

THE CLINICAL SIGNIFICANCE OF ANTIPHOSPHOLIPID ANTIBODIES IN NON-HODGKIN LYMPHOMA PATIENTS IN HUSM

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Introduction: Cancer patients are at risk of developing thromboembolism (TE). Among all malignancies, lymphoma is the fourth most likely cancer at risk of thrombosis with significant morbidity and mortality. The association of antiphospholipid antibodies (APA) with Non Hodgkin Lymphoma (NHL) has been reported and complete remission was associated with disappearance of APA. APA is a group of autoantibodies, which include anticardiolipin antibody (ACA), anti-beta2 glycoprotein 1 (anti-B2GP-1) and lupus anticoagulant.

Objective: To determine the prevalence of APA and its clinical significance in HUSM.

Methodology: A pilot study was conducted in HUSM for 1-year period to recruit 53 selected NHL patients for detection of APA at presentation. Patient's blood was tested for the presence of ACA and anti-B2GP-1 antibodies using ELISA technique. They were followed-up over a median period of 6 months to detect the occurrence of TE and bone marrow recovery following chemotherapy using full blood count.

Results: We found APA in 23 out of 53 NHL patients (43.4%), with ACA 35.8% and anti-B2GP-1 antibodies 18.9%. The incidence of elevated APA increased with age especially for those with age more than 40 years (91.3%). However, positivity for APA was not associated with gender, survival, histology or staging of lymphoma. There were three patients who developed TE during the follow-up period, and all of them were APA positive. There was no significant association between APA and TE. Positive APA was found to correlate with thrombocytopenia at presentation. It was also found to be associated with delayed platelet recovery following chemotherapy ($p < 0.05$). These findings indicate thrombocytopenia could be part of APA.

Conclusion: There was no significant association between APA positive in NHL patients and thrombosis. Therefore, investigation for APA in NHL cases is not recommended as routinely investigation to detect potential TE in our institution.

ASYMPTOMATIC APPENDICEAL ENDOMETRIOSIS ASSOCIATED WITH RIGHT PYOSALPINX IN A PREGNANT WOMAN – A RARE CASE REPORT

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Introduction: Presence of endometrial tissue outside the endometrium and myometrium is known as endometriosis. We reported a rare presentation of appendiceal endometriosis incidentally diagnosed in a pregnant woman.

Case report: Twenty eight year old Malay lady with 17 weeks period of amenorrhoea presented with severe pain in the right iliac fossa for 2 days and acute appendicitis was suspected. Intra operatively the appendix appeared normal and its tip was adherent to the fimbrial end of the right fallopian tube. Hence a right salpingectomy and appendicectomy were performed.

The fallopian tube showed typical features of acute salpingitis. The appendix showed a polypoidal lesion composed of decidual cells. The overlying epithelium was cuboidal and positive for progesterone receptors. Hence a definite diagnosis of endometriosis with decidual change was made.

During pregnancy the appendiceal endometriosis frequently undergoes initial enlargement with occasional ulceration and bleeding followed by shrinkage. The marked decidual reaction may cause obstruction of lumen and predispose to acute appendicitis or perforation. In the present case, the appendiceal mucosa showed marked decidual reaction and thinning of the muscular layer. The fimbriae were adherent to the tip of the appendix. This could have happened due to an appendiceal perforation, which was sealed by the fimbriae of the fallopian tube as sequelae of inflammatory process. The adherent fimbriae might lead to occlusion of fallopian tube and predisposed to acute salpingitis. Endometriosis of vermiform appendix is rare and usually asymptomatic and this is the first case report of appendiceal endometriosis associated with pyosalpinx.

THE USE OF BURROW INK TEST (BIT) IN DIAGNOSING SCABIES

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Introduction: Definitive diagnosis for scabies is done by identifying the various stages of mites (adult, larvae, nymph, eggs), scybala or tunnels dug by the mites. Burrow Ink Test (BIT) is used to detect tunnels dug by the mites. This technique has been considered as the gold standard technique for diagnosing scabies in temperate countries.

Objective: To evaluate the use of BIT in diagnosing scabies in Malaysia

Methodology: A total of 36 patients whom were clinically diagnosed as having scabies were subjected to the study. Black ink was applied onto scabietic lesions located at the inter-digital areas using a fountain pen. The ink was then removed after 5 minutes using an alcohol swab. The presence of tunnel is described as a dark, wavy line. The same area was then scrapped to confirm the diagnosis.

Results: Three cases (8.3%) were successfully diagnosed using BIT compared to five (13.9%) cases diagnosed by skin scraping. Statistical test (z-test) shows a significant difference between the two techniques ($p < 0.05$).

Conclusion: Burrow Ink Test is a simple, inexpensive and fast technique compared to skin scraping, but it is not useful in diagnosing scabies in Malaysia. However, looking at both techniques, it is obvious that they have limitations, therefore a more efficient method or combinations of techniques are needed for us to be able to come up with a definitive diagnosis for scabies.

DISTRIBUTION OF *Aedes* spp. IN SELECTED AREAS IN THE WEST COAST OF PENINSULAR MALAYSIA

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Introduction: *Aedes* spp. is well known for their role as an important vectors for various viral diseases. In Malaysia, these mosquitoes are an important transmitter for dengue fever and the recent outbreak of this disease prompt an investigation of their distribution in selected habitats.

Objective: To study the distribution of *Aedes* spp. from various habitats in west coast of Peninsular Malaysia.

Methodology: Sampling was done from using a standard technique from various habitats, which include a coconut plantation (Bagan Datoh, Perak), coastal area (Bagan Lalang, Selangor), secondary forests (Ulu Gombak; UKM Reserve Forest, Bangi; Kanching Reserve Forest, Selangor) and Malay suburban settlement in Sungai Buloh, Selangor; Jasin and Durian Tunggal, Melaka. Bare Leg Catch technique (BLC) was performed by allowing adult mosquitoes to bite exposed skin. A plastic tube was then used to trap the mosquitoes. Pupae and larvae were collected using tray and pipette.

Results: *Aedes* spp. was found from all selected habitats. The most dominant species was *Ae albopictus* (65.2%), followed by *Ae. butleri* (26.7%), *Ae. aegypti* (3.1%), *Ae. niveus* (2.2%), *Ae pseudoalbopictus* (0.9%), *Ae (Verralina)* sp. (0.6%) and 0.3% each for *Ae vexans*, *Ae gardnerii imitator*, *Ae (Cancraedes) masculinus* and *Ae (Paraedes) collessi*.

Conclusions: Most of the species collected in the study especially *Ae albopictus* and *Ae aegypti* were of medical importance since these mosquitoes are the most important vectors for rural and urban/suburban dengue fever virus. Other *Aedes* spp. (*Ae butleri*, *Ae niveus* and *Ae vexans*) collected in the study has also been linked to various diseases as indicated by previous researchers in Malaysia.

VIABILITY OF *ACANTHAMOEBA* SPP. CYST AFTER STORAGE IN -70°C FOR SIX MONTHS

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Introduction: Cysts of *Acanthamoeba* spp. is known to be hardy and able to survive harsh and desiccated environment. In our laboratory, these cultures are maintained by sub-culturing every fortnight and kept at 30°C for optimum growth. To aid maintenance of these cultures, a study was done to assess the ability of the *Acanthamoeba* spp. cyst to survive extreme temperature for a long period of time.

Objective: To assess the viability of *Acanthamoeba* cysts after storage for six months in -70°C freezer.

Methodology: Seven-days old cysts of 14 clinical strains were harvested, vortex and washed three times with amoebic saline. Suspension was pipetted into sterile vial and stored in a -70°C freezer and left for six months. Triplicate suspension was prepared for each strain. After six months, frozen suspensions were thawed in room temperature and filtered through a vacuum system using 0.45µm pore size cellulose-nitrate filter membrane. The membrane was then put onto a Non-nutrient Agar overlaid with heat-killed *Escherichia coli*. It is removed on the third day and the presence of trophozoites was monitored daily.

Results: Cysts from ten strains (71.4%) of *Acanthamoeba* spp. used were able to undergo excystation and transformed into trophozoites, which is the active form. These cysts were viable after storage in -70°C for six months. Cysts from the other four strains did not transform into trophozoites and they are considered as non-viable.

Conclusions: A high percentage of cysts are still viable after storage. By applying this method of preservation in our laboratory, it significantly reduces the cost and manpower needed in maintaining the isolated strains for research and teaching purposes. It can also be used in facilities where liquid nitrogen is not available for preservation purposes.

RATS EXPOSED TO COCAINE DURING LATE GESTATION AND EARLY POSTNATAL LIFE SHOW DEFICITS IN HIPPOCAMPAL PYRAMIDAL AND GRANULE CELLS IN LATER LIFE

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Introduction: In humans, the offspring of maternal cocaine abusers are known to have general somatic growth retardation. It was therefore hypothesised that such exposure in animals would also cause effects on the growth and morphological structure of the brain.

Objective: To examine the effects of cocaine exposure in rats at different periods during early life on the total number of neurons in the various subregions (pyramidal cells in the CA1+CA2+CA3 and granule cells in the dentate gyrus granule cell layer) of the hippocampal formation.

Methodology: Timed-pregnant nulliparous Wistar rats were injected with cocaine hydrochloride intraperitoneally from embryonic day 15 (E15) to postnatal day six (PND6). Samples of the cocaine-exposed and control rats were killed for examination at 22 and 150 postnatal days of age. Stereological procedures (the Cavalieri principle together with the physical disector method) were utilised to estimate the total number of pyramidal and granule cells in defined regions of the hippocampal formation.

Results: At 22 days of age, the control offspring had about 373,000 pyramidal cells whereas the cocaine-treated animals only had about 310,000 cells in the CA1+CA2+CA3 region. The differences between age-matched groups were statistically significant. There were about 626,000 and 687,000 dentate gyrus granule cells in the 22-day-old control and cocaine-treated groups respectively. By postnatal day 150, the control rats had about 832,000 granule cells whilst the cocaine-treated rats had about 693,000. There was a significant main effect of age and group x age interaction in this measure.

Conclusion: Even moderate exposure to cocaine during the late gestation and early postnatal period in rats is a potent teratogen and can markedly influence the development of neurons in the hippocampal formation.

RELATIONSHIP BETWEEN GLYCAEMIC CONTROL AND MICROVASCULATURE CHANGES IN THE SKIN BIOPSY OF TYPE 2 DIABETIC PATIENTS

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Objective: To investigate the relationship between the level of HbA_{1c} and the microvasculature changes in the skin biopsy of type 2 diabetics.

Methodology: A cross-sectional study was conducted from August 2003 to January 2005. Forty type 2 diabetics and 49 non-diabetics age between 20 to 70 years were included in this study. Blood sample was obtained from each patient for HbA_{1c} analysis. Skin biopsy samples were stained with Haematoxylin and Eosin (H&E), Periodic Acid Schiff (PAS) and Masson Trichrome (MT) stains. The tissue sections were also subjected to immunohistochemical stain for factor VIII.

Results: The difference of mean HbA_{1c} was highly significant ($p < 0.001$) between the non-diabetic (4.9 ± 0.6) and diabetic (9.3 ± 2.0) groups. HbA_{1c} showed good correlation ($r = 0.731$) with blood vessel counting ($p < 0.001$) and thickness of endothelial cells ($r = 0.569$, $p = 0.001$). However, there is no significant correlation between HbA_{1c} and endothelial cell counting.

Conclusion: Poor glycaemic control (as indicated by the high mean percentage of HbA_{1c} exceeding 7%) in type 2 diabetic patients may play a role in the microvasculature changes in skin tissue. However, the elucidation of mechanism for the direct involvement of HbA_{1c} in skin microvasculature changes will need further studies.

COMPARATIVE CHARACTERISTICS OF IMMUNOMODULATION INDUCED BY CHRONIC NEUROGENIC AND PSYCHOGENIC STRESS IN THE PREWEANING ANIMALS

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Introduction: Exposure to chronic stress is known to induce prominent immunosuppression manifested by the accidental thymic involution and certain changes in the other compartments of the immune system. It was recently shown that stress experienced at early stage of development is able to cause deviation in post-stress adaptation for the rest of life. Information on the effect of different types of stress on the immunoarchitecture of the immune organs at preweaning stage is still lacking.

Objective: To evaluate the extent of accidental thymic involution in pre-weaning animals exposed to chronic neurogenic and psychogenic stress.

Methodology: Fourteen days old Sprague-Dawley rats were exposed to 5-hours daily of neurogenic stress (water immersion at room temperature) and psychogenic stress (observing other rats exposed to stress) for 7 consecutive days. There were 6 animals in each group. Rats were euthanised immediately after last stress session. Thymus were removed and processed for routine histology and immunohistochemistry using antibodies against PCNA, ED1 and CD8a. Quantitative analysis of volume density and numeric density of immunoreactive reactions were conducted by 2 independent investigators using image analysis software (ImagePro Plus).

Results: Quantitative immunohistochemical analysis showed that CD8a+ thymocyte depletion was more pronounced in the animals exposed to neurogenic stress compared to psychogenic stress. The number of PCNA immunoreactive cells was significantly reduced in animals exposed to neurogenic stress. The number of ED1 immunoreactive cells was significantly increased in animals exposed to neurogenic stress, not in animals exposed to psychogenic stress.

Conclusion: Prewaning rats undergo more prominent immunosuppression under exposure to chronic neurogenic stress compared to psychogenic stress. The mechanism of post-stress double positive thymocyte depletion is mainly due to increased apoptosis and to lesser extent by reduced lymphoid proliferation in the thymic cortex.

ACANTHAMOEBA KERATITIS: INCIDENCE AND RISK FACTORS FOR CASES IN MALAYSIA

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Introduction: The first case of Acanthamoeba keratitis in Malaysia was reported in 1995 followed by a report in 2000 and 2003. A preliminary report about the incidence in 2004 showed that Acanthamoeba keratitis is not rare and associated with poor hygiene of contact lens care.

Objective: To determine the incidence of Acanthamoeba keratitis in Malaysia

Methodology: Eighty-six keratitis cases were diagnosed at participating hospitals between December 2003 to March 2005. Corneal scrapings were sent to Acanthamoeba Culture Laboratory, UKM to isolate *Acanthamoeba spp.* Specimens were cultured onto nonnutrient agar overlaid with *E. coli* and were incubated in 30°C. Plates were observed daily under an inverted microscope for 11 days to detect any growth of *Acanthamoeba spp.*

Results: Nine (10.5%) keratitis cases from participating hospitals were diagnosed as Acanthamoeba keratitis. All patients were contact lens wearers and eight of them were females. Eight patients used soft contact lenses and one wore RGP lens. Two of them swim occasionally with their contact lenses on. One patient never used proper disinfections system. Seven patients did not clean the contact lens cases everyday and four of them used tap water to clean their cases. Eight patients never stored their cases dry daily. Six of them never consulted practitioners for contact lens care.

Conclusion: The incidence rate of Acanthamoeba keratitis in Malaysia is 10.5% and poor hygiene of contact lens care is the most probable risk factor.

GIANT CELL TUMOUR OF SACRUM: COMMON ENTITY, UNCOMMON SITE

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Introduction: Giant cell tumours (GCT) represent 5% of all primary bone tumours. World Health Organization (WHO) defined GCT as a benign, locally aggressive neoplasm which is composed of sheets of neoplastic ovoid mononuclear cells interspersed with uniformly distributed large, osteoclast-giant cells. They typically arise in epiphyses of long tubular bones especially the distal femur, proximal tibia, distal radius and proximal humerus. Peak incidence is between 20-45 years with slight female predominance. The sacrum is a rather unusual location of this tumour, and pose significant difficulty in management.

Case report: We report a case of a 31-year-old woman; complain of pain and swelling over the lower back for 1-year duration without preceding history of trauma. The swelling gradually increased in size for the past 4 months prior to admission. However, she denied any constitutional symptoms. Plain x-ray shows destruction of the lower piece of sacrum and coccyx. MRI shows large mass involving the sacrococcygeal bone extending from S2 down to coccyx, which is solid. Histologically, biopsy showed a giant cell rich tumour without any osteoid or chondroid formation. The stromal cells have similar shape nuclei as the giant cells, and show presence of moderate mitoses. There are no physaliphorous cells seen. Giant cell tumours are locally aggressive entity, of which 1-5% metastases. A review of sacral giant cell tumours cases is presented.

INCIDENCE OF TUMOUR SEEDLING IN OPEN BIOPSY TRACT OF OSTEOSARCOMA RESECTION - PRELIMINARY REPORT FROM STUDY OF 12 CASES

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Introduction: Osteosarcoma is the most common primary malignant bone tumour, typically occurring at childhood and adolescence. The standard method of diagnosis is to biopsy suspected lesion. The placement of the biopsy tract is of great importance, as the tumour would be resected en bloc with the whole biopsy tract. This is to prevent local recurrence at the biopsy tract.

Objectives: To investigate the incidence of tumour infiltration in osteosarcoma biopsy tract, namely in the surrounding muscle, fascia, subcutaneous tissue and skin. Secondly, to verify the safe resection margin for the biopsy scar.

Methodology: All cases with histopathological diagnosis of osteosarcoma, which have undergone limb salvage surgery/amputation in Universiti Sains Malaysia Orthopaedic Oncology and Reconstructive Unit between the time period of January 2003 and December 2004 were collected. The biopsy tracts were examined histologically for tumour presence.

Results: Twelve of 30 cases had been examined. Eight (66%) of the cases did not show any tumour infiltration to the muscle, subcutaneous tissue or skin. Two cases (17%) have tumour infiltration into the muscle, and another two cases (17%) infiltration is seen into the subcutaneous tissue. None of the cases have skin infiltration.

Conclusion: The preliminary finding suggests that resection of the biopsy tract en bloc with the tumour may be necessary in limb salvage surgery for osteosarcoma. However, the rest of the cases have to be looked at, and a solution to the problem of tissue preservation offered.

AMBULANCE SERVICES IN KELANTAN – ARE WE GOOD ENOUGH?

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Introduction: Many countries through out the world monitor their ambulance services through public feedback. There has been no study in Malaysia looking into the perception of the public towards our ambulance services.

Objective: To determine the level of satisfaction among public towards ambulance services in Kota Bharu, Kelantan.

Methodology: A cross sectional study evaluating public satisfaction on ambulance services was done for a year at Kota Bharu Hospital and Hospital Universiti Sains Malaysia. Open and closed ended questionnaires adapted and modified from Balance Scorecard (1999) were utilized for this study. Ambulance Response Time (ART) will determine the efficiency of the ambulance services.

Result: 741 ambulance calls were involved. Mean ART was 27.9 minutes. 631 customers participated in answering the questionnaires. Majorities of them (536 or 84.9%) claimed ambulance services were poor.

Conclusion: Public perceives our ambulance services are less efficient. This perception is correlated with ART findings, which is below the international standard (4 – 5 minutes).

LONG TERM EFFECT OF ETHANOLIC EXTRACT OF ANDROGRAPHIS PANICULATA IN STREPTOZOTOCIN INDUCED DIABETIC FEMALE RATS

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Introduction: Diabetes mellitus (DM) is a chronic disease, characterized by hyperglycemia and other metabolic abnormalities. Insulin resistance is believed to be the pathogenic factor in diabetic complications. Most published data showed that *Andrographis paniculata* (AP) extract has a strong short term hypoglycemic effect. However, studies of long term effects (6 weeks) of AP on DM is not only essential but of significant importance.

Objective: To evaluate the long-term effect of 95% ethanolic extract of AP on streptozotocin (STZ)-induced female rats.

Methodology: Rats with regular estrous cycle were randomly divided into five groups. The normal and diabetic controls were given vehicle. Other diabetic groups were treated orally with AP extracts. The rat's body weight, fasting blood glucose and insulin level were measured and daily estrous cycle evaluation were performed. At the end of the experiment, rats were sacrificed and their pancreases were removed for histological examination.

Results: The survival rates of AP treated diabetic groups were increased with dose dependent. Only rats treated with 50mg/kg showed significant reduction ($p < 0.05$) in the blood glucose level compare to diabetic control group at day 21. Diabetic rats treated with 100mg/kg, showed significant decreased ($p < 0.05$) in the insulin level compare to diabetic control group. Endocrine cells densities were significantly increased ($p < 0.05$) in 50mg/kg AP-treated diabetic rats compared to both diabetic and normal control groups while histological changes were also observed.

Conclusion: AP extract was found to have low antihyperglycemic and antihypoinsulinemic effects in diabetic rats. This extract show some possibilities of increasing the survival rate while also changes in the morphology of islet cells.

EFFECT OF SEA CORAL IMPLANTATION ON CHROMOSOMES IN RABBITS

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Introduction: Coral has been used as a bone substitute in many experimental studies. It has been proven to be biocompatible, biodegradable and has not been found to cause any inflammatory responses. An ideal bone substitute should be biocompatible, which means acceptance of the implant to the tissue surface.

Objective: To determine the cytotoxic and clastogenic effect of sea-coral granules implantation (obtained from the *Porites species* and processed by tissue bank of Universiti Sains Malaysia, Health Campus, Kubang Kerian) on the chromosomes of rabbits.

Methodology: Five male rabbits of New Zealand White breed were used in the present study. A cavity of size 2.5cm x 0.5cm x 0.5cm was made in the femur of the rabbits using a surgical bur and 500 mg of Sea coral granules was implanted into the cavity. Blood samples were collected prior to (which acted as the control) and after the implantation (which acted as the treatment) of the biomaterial. Cultures were set and incubated at 37 °C for 72 hours. The cell division was arrested using Colcemid after which the cells were harvested for chromosome analysis.

Results: The mean mitotic index values before and after implantation of Sea Coral granules were 3.84 ± 0.54 and 3.76 ± 0.23 per cent respectively. In the present study, no chromosome aberrations, both numerical and structural were observed either before or after implantation of the Sea Coral.

Conclusions: The mitotic indices indicate the non-cytotoxic nature of the Sea Coral granules and the absence of chromosome aberrations in the treatment group indicates that Sea Coral granules are non-clastogenic under the present test conditions in rabbits.

ONE STEP MULTIPLEX RT-PCR FOR BCR/ABL GENE IN MALAY PATIENTS DIAGNOSED AS LEUKAEMIA

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Introduction: BCR/ABL gene is a product derived from translocation of chromosome 22 to chromosome 9. Its presence confers a diagnostic and prognostic value for Chronic Myeloid Leukemia (CML) and Acute Lymphoblastic Leukaemia (ALL) respectively. The common breakpoints in BCR cluster regions are at b3a2, b2a2 and e1a2 junction.

Objective: To establish a method in detecting the presence of BCR/ABL fusion gene using a one step multiplex RT-PCR and to identify types of breakpoints in leukaemic patients in HUSM.

Methodology: Twenty-six and 14 Malay patients diagnosed as ALL and CML respectively were enrolled into the study. RNA was extracted from the blood and bone marrow samples and was subjected to one-step multiplex RT-PCR for BCR/ABL gene. The PCR product was visualized directly in ethidium bromide stained gel and photographed. The PCR product for e1a2 breakpoint was 481 bp, 310bp for b2a2 and 385 bp for b3a2. The internal control was the bcr gene, which showed an 808 bp PCR product.

Results: The mean age of ALL and CML patients were 4 years and 43 years respectively. Two of ALL patients (7.1%) had BCR/ABL fusion gene, with a breakpoint at e1a2 junction while thirteen (92.8%) of CML patients had the gene. Of these later patients, 85% had a breakpoint at b2a3 junction and 15% at b2a2.

Conclusion: One step multiplex RT-PCR has been successfully developed to detect BCR/ABL fusion gene. It is a fast and effective technique. The results were comparable with previously reported studies. It should be done routinely in all patients with ALL and CML, as its presence is useful in the management of patients.

FREQUENCIES OF THE ABO AND RHESUS BLOOD GROUPS IN DIFFERENT ETHNIC GROUPS IN KELANTAN

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Introduction: The frequencies of ABO and Rhesus D blood groups vary from one population to another.

Objective: To determine the frequencies of the ABO and Rhesus D blood group of different ethnic groups in Kelantan.

Methodology: A retrospective study using blood donation data from Transfusion Medicine Unit, Hospital Universiti Sains Malaysia was conducted from year 2000 to 2004. Only first time blood donors were included. Their ethnicity and ABO/Rhesus phenotype were determined.

Results: A total of 21558 blood donors were registered during this period. These consisted of Malays (89.56%), Chinese (7.50%), Indians (1.0%) and Siamese (1.95%). Blood group O was the most frequent in all ethnic groups: (38.59 % in Malay, 40.22% in Chinese, 41.86% in Indian and 34.52% in Siamese). The frequency of blood group A and B were almost similar among all ethnic groups (27.27% in Malay, 26.61% in Chinese, 19.53% in Indian and 22.62% in Siamese). However as expected AB blood group had the lowest frequency (6.84% in Malay, 7.12% in Chinese, 6.98% in Indian and 10% in Siamese). Overall the frequencies of ABO blood groups among four ethnic groups were 38.66%, 27.05%, 27.36% and 6.92% for blood group O, A, B, and AB respectively. During this period, 99.56% registered blood donors were Rhesus positive and only 0.44% were Rhesus negative.

Conclusion: In all ethnic groups, blood group O was the most frequent and group AB was least frequent. Rhesus negative blood group is rare in our population.

A PRELIMINARY STUDY ON THE GENE FREQUENCIES OF HPA-5 IN MALAY POPULATIONS

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Introduction: Human platelet specific antigens (HPAs) are found on glycoprotein (GP) IIIa (CD 61) of human platelets. Typing for HPA has important role in clinical practice such as neonatal alloimmune thrombocytopenia, post transfusion purpura and platelet transfusion refractoriness. A population studies have shown that phenotype and genotype frequencies of HPAs vary between different ethnic groups.

Objective: To determine the frequency of the HPA genes in Malay apheresis platelet donors in Kelantan.

Methodology: Two mls of EDTA-anticoagulated peripheral venous blood were collected from 26 unrelated Malay regular blood donors. DNA was isolated by phase lock gel method. The genotypes for HPA-5a and HPA-5b were determined by polymerase chain reaction using allele specific oligonucleotide hybridization (ASO). A set of HGH primers were included in each reaction as an internal control. The PCR product was visualized directly in ethidium bromide gel and photographed.

Results: The PCR product was at 230 bp and 231 bp for HPA-5a and HPA-5b respectively. The HGH (control) PCR product showed as 422 bp. The results of this preliminary study showed HPA-5a allele in all samples. None of the sample had HPA-5b allele.

Conclusions: This preliminary study showed the prevalence of human specific platelet antigen in one population especially in Malays. A large study with adequate sample size is much needed to elucidate the exact frequencies of HPA in Malay population, which in turn will help in future management of platelet transfusion.

PRESEPTAL TRANSCONJUNCTIVAL APPROACH IN ORBITAL RIM FRACTURE: REVIEW OF 7 CASES

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Introduction: Preseptal transconjunctival approach is one of the alternative approaches to the inferior orbital rim and floor. The main unwanted complications of surgical approaches dealing with orbital rim and floor fracture are eyelid malposition (ectropion or entropion) and post unfavorable surgical scar. Concerning these problems the preseptal transconjunctival approach was used in treating the fracture in these cases.

Objective: To assess the post operative complications of preseptal transconjunctival approach in orbital rim fracture.

Methodology: Six patients with facial fracture including Le fort II, zygoma and isolated inferior orbital rim had undergone internal reduction and fixation with plating under general anesthesia. All the patients required plating to the orbital rim. The preseptal transconjunctival approach was used in these cases. Bilateral involvement with similar surgical approach was reported in one case and two cases were combined with lateral canthotomy.

Results: In review of 7 cases, which were performed in this hospital, none of the cases presented with neither ectropion nor unsightly post-surgical scar.

Conclusion: This approach provides adequate surgical field for orbital floor and inferomedial part of the orbital rim. However it requires additional lateral canthotomy for the lateral part of the orbital rim and wall.

ISOLATION OF *ACANTHAMOEBA* SPP. FROM HOT SPRINGS

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Introduction: *Acanthamoeba* spp. an ubiquitous organism has been recently isolated from contact lens-care solution. Contact lens casing contaminated with *Acanthamoeba* spp. are a major risk factor for a number of cases of corneal infection, *Acanthamoeba* Keratitis.

Objective: To isolate *Acanthamoeba* spp. from hot springs in Kuala Lumpur and Selangor.

Methodology: A total of fifty samples which included hot spring waters (twenty-five samples) and swabs of inner wall of hot spring ponds (twenty-five samples) from three places in Kuala Lumpur and Selangor were taken. Sterile cotton swab were used and 500 ml of hot spring water was collected in Schott bottle. The samples were then inoculated onto non-nutrient agar (NN-A) with the surface of the plate seeded with heat killed *Escherichia coli*. The plates were then incubated at 40°C and examined daily for fourteen days. Inverted light microscopy was used to identify *Acanthamoeba* trophozoites and cysts using the morphology of the trophozoites and cysts as their taxonomic criteria.

Results: Three (6%) of the samples were positive for *Acanthamoeba* spp. Two (4%) of the positive samples were from swabs, while one (2%) was from hot spring water.

Conclusion: These findings suggest the possibility of hot spring water acting as an environmental niches for the multiplication of *Acanthamoeba* spp. The popularity of hot spring water as a therapeutic agent from the Malaysian public's perspective may contribute as a potential source of *Acanthamoeba* spp. Infection especially to contact lens wearer.

c-Kit PROTO-ONCOGENE EXPRESSION IN UTERINE LEIOMYOSARCOMAS: CASE SERIES

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Introduction: The proto-oncogene c-kit is the cellular homologue of the oncogene v-kit of HZ4 feline sarcoma virus. It is located on chromosome 4 (4q11-12) in the human genome. Interaction between the c-kit receptor and its ligand, stem cell factor, is essential in the development of tissues. c-kit expression has been identified in a number of different neoplasms like seminoma/dysgerminoma, and gastrointestinal stromal tumors (GIST). Recently it has been reported that c-Kit is also present in leiomyosarcomas. Tyrosine kinase inhibitors (TKIs) are a promising new therapy in the treatment of cancer. These agents target cellular proteins like kit and its related homologs decreasing cellular proliferation and survival.

Objective: To investigate for the expression of c-Kit in leiomyosarcomas

Methodology: In this study a total of 6 cases diagnosed as leiomyosarcomas at department of pathology, USM were investigated for reactivity for c-Kit using immunohistochemical stain. Stain was considered positive if more than 10 percent of the cells showed membrane or cytoplasmic positivity.

Results: Two leiomyosarcomas stained faintly with c-Kit and in less than 10 percent of the cells. The other 4 cases showed no staining. The control showed good membrane and cytoplasmic positivity.

Conclusion: Uterine leiomyosarcomas did not express c-Kit. The reason for this could be that the tumors are inherently c-Kit negative. More study using larger number of cases is required to validate these findings and further molecular characterization of these mesenchymal tumors are needed to identify the true nature of these sarcomas.

ENDOMETRIAL STROMAL TUMOUR – CASE REPORT OF AN UNUSUAL BEHAVIOUR AND REVIEW OF LITERATURE

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Introduction: Endometrial stromal tumours are very rare tumours arising predominantly within the endometrium. Most of these patients present with abnormal uterine bleeding and occasionally pelvic pain. It is difficult to diagnose this disease based upon small sampling or curetting of the endometrium. It is necessary to correctly identify these tumors so as to provide appropriate treatment, which is surgery.

Case Report: A 41 years old female was diagnosed as having endometrial stromal tumour when she was 35 years old. The patient was admitted initially with a diagnosis of septic abortion for which dilation and curettage [D&C] was performed. Histopathological examination revealed endometrial stromal tumor and the patient was advised to undergo hysterectomy. As the patient was young and refused surgery, close follow up was advised. Eventually she became pregnant and had a spontaneous vaginal delivery one and half years after diagnosis.

At the 6th year after initial diagnosis the patient complained of per vaginal bleeding and a [D&C] was performed. Histopathological examination of the tissue obtained showed endometrial stromal tumour with a high mitotic index.

The interesting and unusual part is that the patient is healthy and even had a normal pregnancy. This kind of behaviour has not been reported earlier to the best of our knowledge.

NUDE MICE BREEDING: USM EXPERIENCE

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Introduction: Institute for Medical Research (IMR) is the only center that undertakes the nude mice breeding in Malaysia till 2004. We have recently set up a lab equipped with two isolators which serves to exclusively breed nude mice for neurological research.

Case Report: Five pairs of *BALB/c* male and female heterozygous dominant mice (National Laboratory Animal Center, Nakhon Pathom, Thailand) were mated 1 is to 1 in an environmentally controlled isolator (12 hours light/dark cycle, temperature: 23 _ 3_c, humidity: 55 _ 10% and pressure: 3-5mm of water pressure). The mice were given autoclaved commercial pellets with filtered drinking water *et libitum*. From the breeding, a total of 11 nude mice were borne from mating three generations of the mice (F0: 3; F1: 4 and F2: 4). We aim to prepare control pathological slides of major organs of normal healthy nude mice and to maximize the breeding of nude mice.

RAS, c-MYC AND EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) GENE ALTERATION IN HUMAN GLIOMAS IN NORTH EAST MALAYSIAN PATIENTS

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Introduction: Neoplastic transformation appears to be a multi-step process in which the normal controls of cell proliferation and cell-cell interaction are lost, thus transforming from normal into a cancerous cell. The tumorigenic process involves interplay between two classes of genes which are oncogenes and tumor suppressor genes.

Methods: We have selected ras family, c-myc and epidermal growth factor receptor (EGFR) gene to detect whether these abnormalities are associated with expression and progression of the gliomas in Malaysian patients. We used polymerase chain reactions-single stranded conformation polymorphism (PCR-SSCP) to detect polymorphism followed by direct sequencing. For the ras gene family, we screened for point mutations in codons 12 and 61 of the H-, K-, and N- ras gene. For EGFR and c-MYC we only analyzed for exon 1.

Results: No abnormal migration shifts were detected in all of the glioma samples analyzed for mutation on ras, c-MYC and EGFR gene.

Conclusion: Our findings suggested that the frequency of ras, c-MYC and EGFR mutation in gliomas are lower from other populations. These data indicate that these genes may not be important in the oncogenesis of gliomas among patients in Malaysia.

COMPARISON OF HYBRID CAPTURE II (HCII) ASSAY WITH DR.HPV™ CHIP KIT, A PRELIMINARY STUDY

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Introduction: Cervical cancer is the second most common female cancer worldwide. The involvement of human papillomavirus (HPV) as the causative factor in the pathogenesis of cervical cancer is established. Currently, the most widely used routine diagnostic method in detecting HPV is the US Food and Drug Administration (FDA) approved-HCII assay, by Digene.

Objective: To assess the performance of two commercially available HPV detection methods.

Method: The present study compared the performance of HCII assay with Dr. HPV™ Chip Kit developed by Dr. Chip Biotechnology for the detection of HPV in 4 clinical samples suspected to be HPV positive via the conventional Pap smear. Cervical scrapings were kept in the ThinPrep Pap Test bottles prior to HPV detection. Samples were directly processed according to the HCII assay protocol. Meanwhile, DNA was extracted from the samples for Dr. HPV™ Chip Kit and detection was carried out according to manufacturer's protocol.

Results: HPV was detected in all of the 4 clinical samples using the HCII assay while only 3 were positive for HPV using the Dr. HPV™ Chip Kit where two were HPV58 and HPV 16 while the third one could not be elucidated.

Conclusion: Generally, HCII is a well designed method for the detection of high risk-HPVs but lacks in terms of specifically determining the type of HPVs. On the other hand, Dr. HPV™ Chip Kit is excellent in accurately genotyping most of the HPVs.

EFFECT OF OMEPRAZOLE - CHLOROQUINE COMBINATIONS ON CHLOROQUINE RESISTANT PLASMODIA

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Introduction: Chloroquine (CQ) resistance is an important worldwide issue. An increase in V-type H⁺ ATPase and p-glycoprotein-like homologue (pgh1) activity on the digestive vacuole of *P. falciparum* is linked to CQ resistance. Omeprazole (OMP) inhibits both V-type H⁺ ATPase and p-glycoprotein.

Objective: To study the effect of CQ+OMP combinations on CQ-resistant malaria in vitro and in vivo.

Methods: CQ-resistant TM90C2B and CQ-sensitive HB3 (*P. falciparum*) cultures were established. CQ and OMP combinations were assayed in checkerboard pattern on 96-well microplates to determine IC₅₀s for each drug individually and in combination, by assessing schizont maturation relative to controls.

P. berghei was injected intraperitoneally into Swiss Albino mice. Mice developing > 5% parasitemia were treated with CQ and OMP combinations following standard Peter's consecutive 4-day regimes. Daily thin blood smears were made for 7 days post-treatment to assess parasitemia. Day of recrudescence and survival were recorded.

Results: CQ IC₅₀s for TM90C2B and HB3 were 57.72 ng/ml and 5.07 ng/ml respectively whereas OMP IC₅₀s for TM90C2B and HB3 were 18.67 µg/ml and 7.65 µg/ml. All combinations showed slight antagonism (average sum: 1 < FIC < 2). For in vivo assays, OMP improved the rate of decline of parasitemia at a subtherapeutic dose of 5 mg/kg/d CQ. However no difference in day of recrudescence or on survival was noted.

Conclusions: OMP is not a suitable chemosensitizer but its effect is not so detrimental that it needs to be avoided in malaria patients receiving CQ.

SCREENING OF DOMESTIC WATER TAPS FOR *ACANTHAMOEBA* SPP.

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Introduction: *Acanthamoeba* spp. are microscopic, water-borne parasites that may invade the cornea causing *Acanthamoeba* keratitis, a potentially serious corneal infection associated with contact lens wearers. The risk factors for contact lens contamination include using tap water in cleaning, storing contact lens in home made solutions and also wearing contact lens while swimming.

Objective: To screen domestic water taps for *Acanthamoeba* spp.

Methodology: A total of one-hundred water taps were swabbed which include non-direct water taps (fifty samples) and direct water taps (fifty samples) in selected areas in Kelantan, Pahang, Melaka, Perak, Pulau Pinang, Selangor and Kuala Lumpur. The inner part of the water taps were swabbed using sterile cotton swab. The swabs were then inoculated onto non-nutrient agar (NN-A) with the surface of the plate seeded with heat killed *Escherichia coli*. The plates were incubated and examined daily for fourteen days using inverted light microscopy. Plates positive for *Acanthamoeba* spp. were subcultured on non-nutrient agar (NN-A) to eliminate other protozoan, fungi etc. Isolates were then identified, using trophozoites and cysts morphology as their taxonomic criteria.

Results: Only one (1%) of the samples cultured was positive for *Acanthamoeba* spp. The positive sample was isolated from non-direct water tap.

Conclusion: Domestic water taps especially non-direct water taps have the possibility of acting as possible source of *Acanthamoeba* spp. infection and contamination of contact lenses.

EFFECTIVENESS OF SOFT CONTACT LENS DISINFECTING SOLUTIONS AGAINST *ACANTHAMOEBA* SPP. CYSTS

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Introduction: *Acanthamoeba* keratitis among contact lens wearers is being reported with increasing frequency in various parts of the world especially among soft lens wearers. Therefore, the use of contact lens disinfecting solutions that effectively kill *Acanthamoeba* spp. is essential for the prevention of a possible infection to the eye.

Objective: To evaluate the effectiveness of three types of soft contact lens disinfecting solutions against two strains of *Acanthamoeba* spp. cysts

Methodology: Two multipurpose disinfecting solutions for soft contact lenses (Opti-Free Express and Renu MultiPlus) and a one step hydrogen peroxide soft lens disinfecting solution (AoSept Plus) were tested for their effects on cysts of two different strains of *Acanthamoeba* spp. (HTH67 and CLC26) for four, six and eight hours of exposure time. Tests for longer exposure time were done to get the minimum exposure time for killing the cysts.

Results: AoSept Plus showed very good cysticidal effects for both strains while Opti-Free Express and Renu MultiPlus could not effectively destroy the cysts after four, six and eight hours of exposure time. Renu MultiPlus could kill HTH67 and CLC26 strains after 72 and 240 hours while Opti-Free Express could destroy both strains after 120 and 168 hours of exposure time.

Conclusion: The one step hydrogen peroxide system AoSept Plus is a very effective disinfectant solution while both multipurpose disinfecting solutions do not have sufficient cysticidal effects for both strains tested.

VIABILITY OF *ACANTHAMOEBA* SPP. CYSTS AFTER EXPOSURE TO MULTIPURPOSE CONTACT LENS DISINFECTANT SOLUTIONS

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Introduction: Contact lens wear is the most prevalent risk factor for *Acanthamoeba* keratitis, a type of corneal ulcer caused by *Acanthamoeba* spp. Contamination of contact lenses paraphernalia by *Acanthamoeba* spp. is a possible cause for ocular infection. Previous studies showed that multipurpose contact lens solutions were not very effective in killing the cysts of *Acanthamoeba* spp.

Objective: To evaluate the viability of *Acanthamoeba* spp. cysts from four different strains after exposure to four types of readily available multipurpose contact lens disinfectant solutions in Malaysia

Methodology: Two clinical strains of *Acanthamoeba* spp. isolated from specimens of keratitis patients (HTH80 and HKL55) and two non-clinical strains isolated from contact lenses and normal saline solution of asymptomatic lens wearers (CLN32 and CLR31) were exposed to four multipurpose contact lens disinfectant solutions; Opti-Free Express_, Renu MultiPlus_, Complete Moisture Plus_ and Boston Simplicity_ for four, six and eight hours.

Results: All clinical strains were viable after exposure to all disinfectant solution tested. Strain isolated from contact lenses (CLN32) was also resistant to all disinfectant at all exposure time except for eight hours of exposure to Boston Simplicity_. Strain isolated from normal saline solution (CLR31) was killed after four, six and eight hours of exposure to Boston Simplicity_ and eight hours exposure to Opti-Free Express_.

Conclusion: All clinical strains were found to be resistant to multipurpose contact lens disinfectant solutions available in the market but not on non-clinical strains.

ISOLATION OF ACANTHAMOEBA SPP. FROM USED CONTACT LENS SOLUTIONS

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Introduction: *Acanthamoeba* spp. are free-living organisms found in water and soil environment and also can be isolated from dust. Contact lens solutions contaminated by *Acanthamoeba* spp. is a source for contamination of contact lenses and lens casings. This may cause corneal infection to contact lens wearers. *Acanthamoeba* spp. are also found to be resistant to various types of preservatives in contact lens solutions.

Objective: To isolate *Acanthamoeba* spp. from contact lens solutions of asymptomatic lens wearers

Methodology: Contact lens solutions of 70 asymptomatic lens wearers who used various cleaning and disinfecting solutions were examined for the presence of *Acanthamoeba* spp. 10 mls samples of disinfectant solutions, normal saline used for cleaning and eyedrop solutions were collected. Three drops of each samples were filtered through nitrate cellulose membrane and cultured on non-nutrient agar overlaid with *E.coli*. The presence of *Acanthamoeba* spp. was examined under an inverted microscope for 14 days.

Result: *Acanthamoeba* spp. was found in one of 54 disinfectant solutions samples and one of 10 normal saline samples. All three samples of contact lens cleaners and four samples of eyedrop solutions were negative. *Acanthamoeba* spp. from Group III (culbertsonids) were isolated from disinfectant solutions and *Acanthamoeba* spp. from Group II (polyphagids) were isolated from normal saline.

Conclusion: These findings suggest that *Acanthamoeba* spp. can contaminate contact lens solutions and found to be resistant to the preservatives in the solutions.

AN ALTERNATIVE PHYLOTHERAPEUTIC AGENT FOR TREATMENT OF HOSPITAL-ACQUIRED MRSA INFECTIONS

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Introduction: The gall from *Quercus infectoria* (Fagaceae) or locally known as *biji manjakani*, is well-known for its ability to restore postpartum uterine elasticity as well as to relieve itchiness due to white discharge and vaginal infections. In the course of our screening for antibacterial natural products, we recently found that the extracts from the galls of *Q. infectoria* have antibacterial activity against most Gram-positive organisms. Due to the emergence of multi-drug resistant *Staphylococcus aureus* associated with the use of the current antibiotics, the extracts from the galls of *Q. infectoria* were investigated for their antimicrobial activities against methicillin-resistant *Staphylococcus aureus* (MRSA).

Objective: To evaluate the antibacterial potential of *Quercus infectoria* against Methicillin-resistant *Staphylococcus aureus*.

Methodology: The antimicrobial ability was carried out using the disc diffusion method. Each of the extracts at 0.1 mg/disc and Vancomycin (1 µg/disc) as a standard antibiotic (positive control), were positioned on the MRSA-inoculated agar. Incubation was done at 37°C and after 24 hours, inhibition zones were recorded as the mean diameter measured to the nearest millimeter (mm) of growth-free zones using a vernier caliper. Statistical analysis was done using two-tailed paired t-test.

Results: All the extracts from the galls of *Q. infectoria* were capable of inhibiting the growth of MRSA. Out of all the extracts tested, the methanol (MeOH) extract at 0.1 mg/disc showed a significantly higher antimicrobial activity compared to Vancomycin (1 µg/disc).

Conclusion: The extracts from the galls of *Q. infectoria* displayed potentially strong anti-MRSA action and displayed potential phytotherapeutic agents against these hospital-acquired infections.

THE EFFECTS OF MORPHINE IN A RAT MODEL OF NEUROPATHIC PAIN

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Introduction: The efficacy of opioids in acute pain condition is well established. However, there is controversy about the analgesic effect of opioids in neuropathic pain patients.

Objective: To determine the effects of morphine on thalamic VPL neuronal discharges in a rat model of neuropathic pain, spinal nerve ligated (SNL) rats.

Method: Tight ligation of the left L5/6 spinal nerves (SNL, n=6) or sham surgery (n=6) was carried out in anaesthetised rats (weight 80-90g). There was no surgery done to a third group of rats (naïve, n=6). Two weeks after the surgery, all the rats were subjected to *in vivo* stereotaxic electrophysiological recordings under anaesthesia. Basal firing of VPL neurons were recorded using an eight microwire electrode. Cross-correlation analysis and Mann-Whitney tests were performed to compare the coordination of VPL discharges before and after systemic morphine (0.5 mg.kg⁻¹) administration.

Results: Correlated activity of VPL neurons was highest in naive rats (70%) and lowest in SNL rats (23.5%). Systemic administration of morphine induced synchronous discharges of VPL neurons in naïve (P<0.01) and sham operated rats (P<0.05) compared to pre-treatment. However, the increased synchronization of discharges was not seen in SNL rats.

Conclusions: The low correlated activity of VPL neurons is consistent with the result of functional imaging studies that demonstrated reduced thalamic basal activity and blood flow in neuropathic pain condition. The present study suggests of possible alteration in the functional neuronal network in SNL rats that may contribute to the ineffectiveness of morphine administered in neuropathic patients.

HISTOLOGICAL EVALUATION ON THE TOXICITY OF AQUEOUS EXTRACT OF LEAVES OF *PHYLLANTHUS AMARUS*, IN RAT LIVER

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Introduction: Herbal medicines have been used since ancient times. *Phyllanthus amarus* (*Euphorbiaceae*) is widely used traditionally for the treatment of jaundice, diarrhea, dysentery, diabetes and uro-genital disorders. To our knowledge there was no well-documented toxicological investigations have been carried out on this plant.

Objectives: To determine the toxic effects of aqueous extract of leaves of *P.amarus* (grown in Malaysia) on rat liver by assessing its histological changes.

Methodology: Sprague-Dawley rats were used in this study and were divided into acute and chronic toxicity study group. For the acute study, *P.amarus* extract was administered orally (by gavaging) as a single dose (5g/Kg body weight) to male rats. The chronic toxicity study involved oral administration of the extract at 0, 100, 400 and 800 mg/Kg body weight/day for six weeks to male and female rats. In both sex, 0 mg/Kg body weight group served as control. At the end of the experimental period, the rats were sacrificed and liver biopsies were obtained. The tissues were then fixed in 10% formal saline for the histological studies including light microscopic histological examination (liver specimen stained with Hematoxylin and Eosin), Proliferative cell nuclear antigen (PCNA) study and apoptosis study using ApopTAG Kit.

Result: There were no observable histological changes of the liver tissue between control and *P.amarus* extract administered rats.

Conclusion: Oral administration of *P.amarus* aqueous extract does not produce any observable histotoxic effect on rat hepatocytes.

OXIDATIVE STATUS AND ANTIOXIDANT CAPACITY IN CEREBRAL CORTEX OF SPONTANEOUSLY HYPERTENSIVE RAT

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Introduction: Oxidant/antioxidant imbalance has been implicated in the pathogenesis of neurological disorders associated both with aging and hypertension.

Objective: To determine oxidative status and antioxidant capacity in a time-course manner in the cerebral cortex (CC) of spontaneously hypertensive rats (SHR) and Wistar-Kyoto rats (WKY).

Methodology: Six animals from WKY and SHR were sacrificed at 8, 16, 24, 32, 40, 48, 56 and 64 weeks of age. CC was dissected out, homogenized and used for the following estimations:- thiobarbituric acid reactive substances (TBARS), protein carbonyls (PCO), superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GPx), glutathione reductase (GR), glutathione S-transferase (GST), reduced glutathione (GSH), oxidized glutathione (GSSG), total antioxidant status (TAS), Na⁺,K⁺-ATPase and acetylcholinesterase (AChE).

Results: There was significant increase in TBARS and PCO levels, and significant decrease in SOD activity and TAS from week 24 onwards in SHR. GSH levels, GSH/GSSG ratio, GPx and GST activities were significantly decreased from week 16 onwards in SHR. Activities of GR and CAT showed significant decrease from weeks 48 and 56 onwards respectively in SHR. Na⁺,K⁺-ATPase and AChE showed significant decrease in their activities from the weeks 32 and 24 onwards respectively in SHR.

Conclusion: Along with progression of hypertension, there is increased oxidants level and decreased antioxidants capacity with alteration in membrane-bound enzymes activities in CC of SHR. Thus, oxidative stress may play a role in hypertension-associated neurological diseases.

COMPARISON BETWEEN CONVENTIONAL PAP SMEAR AND THIN PREP MONOLAYER CYTOLOGY IN DETECTING CANDIDIASIS

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Introduction: Candidiasis is one of the common causes of chronic inflammatory conditions of the cervix. Generally, diagnosis cervical candidiasis can be accomplished by microscopic examination on cervical scrapping. On Papanicolaou stain, microscopically, candida species are identified as eosinophilic to gray-brown budding yeast or pseudohyphae. In *Candida glabrata*, small, uniform, round budding yeast surrounded by clear halos without pseudohyphae are seen.

Objective: To compare agreement between conventional pap smear and thin prep monolayer cytology in detecting candidiasis.

Methodology: Split samples of conventional pap smear and thin prep monolayer cytology using one cytobrush is used in this study. Samples were taken from 578 patients. Using cytobrush, transformation zone of the cervix is scrapped and spread directly on the slide and immediately fixed by either immersing in 95% alcohol or coating the slides with a surface fixative. Then, the cytobrush was rinsed in the fixative solution (*Preservcyt*®) and monolayer thin prep slides were made using *ThinPrep*®2000. The slides were also fixed in 95% ethanol. Both slides were stained with papanicolaou stain. All slides were examined under microscope.

Results: *Candida species* was detected in 23 of 578 (3.98%) in both conventional and thin prep slides. However, 5 of 23 (21.74%) of positive candidiasis in conventional pap smear are negative in thin prep cytology slides and 6 of 23 (26.09%) of positive candidiasis in thin prep slides are negative in conventional pap smear.

Conclusion: Both thin prep monolayer cytology and conventional pap smear was equally sensitive in detecting cervical candidiasis.

COMPARISON OF CONVENTIONAL PAP SMEAR WITH THIN PREP MONOLAYER CYTOLOGY ON UNSATISFACTORY SLIDES

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Introduction: Pap smear is a screening test to detect precancerous cells in the cervix. The conventional method is by examining the cells after direct spread on the slide from the transformation zone using spatula. This technique is time consuming and errors in sampling and preparation are high. Liquid-based cytology is an alternative method to conventional pap smear in an attempt to overcome some of these problem especially to minimize cells overlap.

Objective: The objective of this study is to compare the effectiveness of these methods to reduce the number of unsatisfactory slides.

Methodology: In this study, split samples of conventional pap smear and thin prep monolayer cytology using one cytobrush is performed. Samples are taken from 578 patients. Using cytobrush, transformation zone of the cervix is scrapped and spread directly on the slide and immediately fix by either immersing in 95% alcohol or coating the slides with a surface fixative. Then, the cytobrush is rinsed in the fixative solution (*Preservcyt*®) and monolayer thin prep slides are made using *ThinPrep*®2000. The slide is also fix in 95% ethanol. Both slides are stained with papanicolaou stain. The slides are examined under microscope.

Results: Unsatisfactory slides were obtained from 31 of 578 (5.36%) slides of conventional pap smears and 49 of 578 (8.48%) slides of thin prep. 15 of 31 (48.4%) unsatisfactory slides of conventional pap smear have adequate thin prep slides. However, 34 of 49 (69.4%) unsatisfactory slides of thin prep smears have adequate conventional pap smear.

Conclusion: Thin prep monolayer cytology has more unsatisfactory slides compared to conventional pap smear.

COMPARISON BETWEEN CONVENTIONAL PAP SMEAR AND THIN PREP MONOLAYER CYTOLOGY – SPLIT SAMPLE

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Introduction: Pap smear is an effective screening test to detect precancerous cells in the cervix. The conventional way has limitation associated with smear preparation, variable false positive and false negative. Thin prep cytology is an alternative method for cervical smears, which provide better cell harvest and cell preservation, even cell distribution and reduction of blood, mucus and air-drying.

Objective: To evaluate both techniques for cervical screening.

Methodology: The split samples were obtained from 578 patients using one cytobrush for both conventional pap smear and thin prep monolayer techniques. The transformation zone of the cervix was scrapped with the cytobrush and spread directly on the slide and immediately fix by either immersing in 95% alcohol or coating the slides with a surface fixative. After rinsing the cytobrush in the fixative solution (*Preservcyt®*), a monolayer thin prep slides were made using *ThinPrep®2000*. The slide was also fixed in 95% ethanol. Both slides were stained with papanicolaou stain for microscopic examination.

Results: Low Grade Squamous Intraepithelial Lesion, Human Papilloma Virus or Cervical Intraepithelial Neoplasm I were detected in 9 samples (1.56%) of conventional pap smear and 8 samples (1.38%) of thin prep slides. High-grade squamous intraepithelial lesions were observed only in 1 samples (0.17%) in thin prep slides but not in conventional pap smear. Infective agents like *Trichomonas vaginalis*, Candidiasis, *Actinomyces* spp. or bacterial vaginosis were detected in 47 samples (8.13%) of conventional pap smear and 46 samples (7.96%) of thin prep slides. Adenocarcinoma and Squamous cell carcinoma were detected in 1 sample (0.17%) in both conventional and thin prep slides. Atypical squamous cell of undetermined significant and atypical glandular of undetermined significant were seen in 1 sample (0.17%) of conventional pap smear but not detected in thin prep slides.

Conclusion: Conventional pap smear and thin prep monolayer cytology has comparable results as a tool for cervical screening.

ORBITAL CELLULITIS SECONDARY TO SUPERIOR OPHTHALMIC VEIN THROMBOSIS

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Introduction: Orbital cellulitis is not only vision threatening but may result in life threatening condition. Any infection in the adjacent structure to eye, including sinuses and oral infection can spread to the orbit. Early detection and prompt management is definitely crucial.

Case Report: A 43-year-old man presented with right dental infection for 3 days duration and signs of left orbital cellulitis. CT-scan showed proptosis of the left eye, right parapharyngeal abscess and right upper maxillary molar abscess. MRI revealed left superior ophthalmic vein thrombosis. Emergency drainage of right parapharyngeal abscess and extraction of infected tooth were performed. Left eye proptosis markedly reduced after initiating heparin and the patient was placed on long-term warfarin. Early identification of dental infection is necessary to avoid vision and life-threatening complications. Prompt treatment with heparin is critical in the management of superior ophthalmic vein thrombosis.

INTRAOSSSEOUS MENINGIOMA

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Introduction: Meningiomas represent 15% of all intracranial tumors and was classified into three basic categories: primary neuroaxial meningiomas (PNM), primary extra-neuroaxial meningiomas (PEM) and metastasize/ secondary meningioma. Intraosseous meningioma is rare entity occurring in 14% cases of PEM. Most intraosseous meningioma is of meningothelial subtype histologically. Average age of diagnosis is 47 years with male to female ratio of 3:7. The common location is within cranial vault and middle ear (37%). Other sites includes sphenoid ridge, frontal bone and orbital roof. It is commonly found near suture lines particularly coronal or pterional sutures. Radiological findings are varies, ranging from extremely rare osteolytic form to more common hyperostotic form. We reported a rare case of intraosseous meningioma, which is arising outside duramater (ectopic).

Case Report: A 35 year-old man with history of chronic headache and fits for 2 years duration was admitted for generalized tonic clonic seizures associated with loss of consciousness, right hemiparesis, transient aphasia, hypertonia and hyper-reflexia with power 4/5 on the right side of the body. CT scan revealed enhancing mass in left frontal lobe with midline shift to the right. Histopathological examination from the resected tumor revealed meningioma of syncitial variant with no evidence of malignancy. Post resection, he was still having seizures despite on anti-epilepsy medication. However, repeat CT scans showed no evidence of tumor recurrence. Brain MRI revealed gliosis at para-sagittal region due to previous surgery with multiple recurrence of meningioma within intradiploic space in the right vertex, anterior and posterior part of falx cerebri.

THE EFFECTS OF CHEMOTHERAPEUTIC DRUGS ON CELL VIABILITY, APOPTOSIS, AND SURVIVIN EXPRESSION IN THE HUMAN BREAST CANCER CELL LINE, MCF-7

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Introduction: Survivin is a new member of the inhibitor of apoptosis protein (IAP) family, selectively over-expressed in common human cancers but not in normal adult tissues. It is also expressed in cancer cell lines. Chemotherapeutic drugs exert adverse effects on cell survival.

Objectives: To study the effects of doxorubicin, 5-fluorouracil, cyclophosphamide, and tamoxifen on cell viability, apoptosis, and survivin expression in the human breast cancer cell line MCF-7.

Methods: After 72 hours incubation, inhibition of MCF-7 growth induced by different concentrations of doxorubicin, 5-fluorouracil, cyclophosphamide, and tamoxifen was evaluated by an MTT assay whilst alteration of survivin expression and subcellular distribution was evaluated by immunocytochemistry. Apoptosis was detected by the propidium iodide/ acridine orange method.

Results: The cell viability was reduced in a dose-dependant pattern when incubated with the drugs. It was found that most of the MCF-7 cell expressed survivin predominantly in the cytoplasm. The percentages of apoptotic cells were increased with the increased drug concentrations.

Conclusions: It was found that the MCF-7 cell line expressed survivin. Cell viability, apoptosis, and survivin expression correlated with the varying concentrations of the test drugs.

SURVIVIN EXPRESSION IN FETAL AND ADULT NORMAL TISSUES OF MOUSE AND RAT

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Introduction: Survivin is an inhibitor of apoptosis protein which also regulates the cell cycle in the G2/M phase. Survivin is expressed during embryonic and fetal development, selectively over-expressed in common human cancers whereas it is completely down-regulated in normal adult tissue.

Objectives: To study the expression of the survivin homologue and its subcellular distribution in the fetal and normal adult tissues of rat and mouse.

Methods: Survivin expression was evaluated by immunohistochemistry in formalin-fixed paraffin embedded tissue sections of fetal and normal adult tissues of rat and mouse using the polyclonal antibody SUR12A-CFI.

Results: In the present study, the polyclonal anti-human survivin serum designated as SUR12A-CFI demonstrated a reactivity with mouse and rat survivin in formalin-fixed paraffin embedded tissue sections in the immunohistochemistry assay. The survivin mouse and rat are the homologues to human survivin. It was further demonstrated that survivin is normally expressed predominantly in the cytoplasm of survivin positive fetal and adult tissues. Moreover, a differential expression of survivin in different tissues was demonstrated.

Conclusions: Survivin was abundantly and prominently expressed during the fetal development of rat and mouse. Polyclonal antibody SUR12A-CFI has reactivity with the rat and mouse surviving.

A NEW SOLUTION TO AN OLD PROBLEM: RECALCITRANT VENOUS ULCER MANAGEMENT

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Introduction: Wound healing proceeds in an orderly fashion but disruption at any stage or stages leads to the development of chronic wounds. Wound healing is deemed delayed if there is no change in wound size in 4 weeks. The management principle of chronic, non-healing wounds is to identify and treat the cause, before embarking on wound management. By utilizing the principles of wound bed preparation and vacuum assisted closure to facilitate wound healing, we are able to demonstrate the ability to manipulate a wound stuck in chronicity.

Case report: An elderly gentleman presented with bilateral, chronic venous ulcers of 14 years duration. He had bilateral varicose veins with venous hypertension for 20 years. Bilateral Trendelenberg operations were performed. SSG of leg wounds failed to take. In addition he developed bilateral DVT two years ago. We subjected him to limb elevation and wound bed preparation with vacuum assisted closure. Skin allografts were utilized to test the prepared bed. SSG was laid and secured with vacuum assisted closure. SSG take was 100%, and remained so on follow up four months later. The conversion of a wound stuck in chronicity requires an in depth understanding of the principles of wound bed preparation. Vacuum assisted closure and allograft skin are useful tools to achieve this end. The use of vacuum assisted closure to enhance SSG take and maintain the preparedness of the wound bed is a novel approach to dealing with chronic venous ulcers.

GROWING VASCULARIZED TISSUE IN ENGINEERED CONSTRUCTS

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Introduction: Tissue engineering has evolutionize a new pathway of using autogenous tissue for reconstructive purposes but at the same time with the most minimal donor morbidity. The possibility of actually being able to synthesize one own tissue and use it for reconstructive purposes without any donor site morbidity is an exciting one. A model chamber for autogenous tissue synthesis was created, combining Lyostypt (medical grade bovine collagen) with a vascular pedicle in a modified silicon chamber.

Objective: To demonstrate the ability to grow autogenous tissue using a flow-through rat animal model.

Methodology: Twelve rats were divided into two groups of six rats each. Each rat had its superficial inferior epigastric artery dissected out. Lyostypt, which is a medical grade bovine collagen, was wrapped around the vessel. In each group, three of the rats had a muscle biopsy taken from the ipsilateral rectus femoris and transplanted into the lyostypt. The composite material was then isolated from the surrounding tissues using a modified silicon chamber. The chamber was then reintroduced back subcutaneously into the rat's groin. The chamber was then harvested at two weeks and four weeks.

Results: Tissue synthesis increase significantly between two weeks and four weeks. There was no difference in the composition of tissue synthesize between the group with muscle biopsy and the group without. Weight of synthesized tissue does not show any significant difference between the two groups.

Conclusion: Vascularized tissue was synthesized at two and four weeks by using lyostypt as the scaffolding material in a modified silicon chamber.

VASORELAXANT EFFECTS OF 17 β -OESTRADIOL ON AORTIC RINGS FROM MALE AND FEMALE RATS.

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Introduction: Vasorelaxant effect of 17 β -oestradiol has been reported previously, but its mechanism remains unclear.

Objective: To investigate the effect of 17 β -oestradiol on KCl and Phenylephrine-induced contraction in aortic rings from male and female rats.

Methodology: Thoracic aortae from 12 week old male (n=10) and female (n=10) Wistar rats were cut into 3 mm rings and suspended in a tissue bath. Isometric contractions were induced by KCl (40mM) and Phenylephrine (10 μ M) and the relaxant effect of cumulative concentrations (10⁻⁸ upto 10⁻⁵M) of 17 β -oestradiol was recorded. Data were analysed using Cricket Graph version 1.3.2 and expressed as mean \pm SEM.

Results: KCl and phenylephrine induced contractions were significantly greater in aortae from male rats (1.21 \pm 0.21g and 0.76 \pm 0.10g for KCl in males and females rats respectively; 0.87 \pm 0.10g and 0.65 \pm 0.10g for phenylephrine in males and females rats respectively). Vasorelaxant effect of 17 β -oestradiol was significantly greater in KCl than in phenylephrine induced contraction (log EC₃₀ -5.65 \pm 0.10 vs. -4.85 \pm 0.43 in KCl and phenylephrine, respectively), and was greater in female than in males rats (log EC₃₀ -6.10 \pm 0.10 vs. -5.00 \pm 0.32, for KCl in males and females, respectively). Nifedipine produced significantly greater relaxations of KCl than phenylephrine induced contractions. In calcium-free solution in which calcium stores were depleted, 17 β -oestradiol significantly reduced the contraction to calcium restoration.

Conclusions: Vasorelaxant effects of 17 β -oestradiol are significantly greater in female than male rats and possibly involves both hyperpolarization and restriction of calcium entry.

LASER DOPPLER IMAGING IN ASSESSMENT OF DEPTH OF BURNS

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Introduction: Accurate and early assessment depth of burn wounds is crucial in the management of burn victims, especially in determining the severity of injuries as well as the timing and requirement of tangential excision and grafting. Conventionally, this is evaluated based on subjective clinical judgement. Thus, Laser Doppler Imaging (LDI) was developed as a noninvasive diagnostic tool for assessment of the depth of burn wounds by determining the perfusion or microvascular blood flow through the defined skin area.

Objective: To determine the accuracy and practicality of LDI in burn wound assessment.

Methodology: A prospective cohort study was conducted involving patients who sustained burns at several parts of their body due to flame or hot liquids. Between 48 to 72 hours after burn injury, the depth of burns of each patient was assessed. The particular burn areas were scanned with the Laser Doppler scanner machine to obtain two-dimensional and colour-coded images indicating perfusion of the burn area. The digital camera was also used to capture the appearance of the burn area for clinical assessment. These findings were compared with the real burn depth confirmed via subsequent tangential excision or rate of healing.

Results: A number of 8 out of total 9 burn wounds assessed using LDI were consistent with the real depth of burn. The accuracy of LDI in assessment the burn depth was 89%, compared with 60-80% using clinical methods.

Conclusion: Laser Doppler Imaging is a simple, accurate, noninvasive, tool in assessing the changes in tissue perfusion and depth of burn wounds. Thus, it is a reliable investigation method to aid clinical management of burn injuries.

ISCHEMIA-REPERFUSION INJURY IN AN ANIMAL MODEL MALE RATS (SPRAGUE-DAWLEY)

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Introduction: Ischemia occurs in microvascular tissue transfer. Reperfusion injury with oxygen-derived free radical is believed to be part of the pathophysiology of the deleterious effect of ischemia in free flap surgery. Ischemia-reperfusion injury is the phenomenon of tissue damage that occurs after the reestablishment of blood flow to tissue that has been subjected to prolonged, global ischemia. This effect can be studied using an animal model. Pharmacotherapy agent effect on ischemia-reperfusion injury can be tested using this simple procedure.

Objective: To study edema and viability of gracilis muscle flaps in the rats after ischemia-reperfusion injury.

Methodology: Twenty male rats were used, divided into 2 groups. In control group, gracilis muscle was harvested. In the test group, the femoral vessels were clamped for four hours and then released to reestablish the blood flow. After 24 hours of reperfusion, the gracilis muscle was harvested. These gracilis muscle were then tested for viability and edema. Nitroblue tetrazolium test was used to test for viability, and the wet weight and dry weight were used to check for muscle edema.

Result: There are significant differences in gracilis muscle viability and edema between the control and test groups.

Conclusion: This test showed that the animal model is suitable to study ischemia-reperfusion injury. It can be used to find potential agents that can be used to prevent ischemia-reperfusion injury.

AN ANIMAL HYPERTROPHIC SCAR MODEL IN WOUND HEALING RESEARCH

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Introduction: An animal model in the study of wound healing and excessive scarring remains very elusive but is a very important tool. A rabbit ear hypertrophic scar model is presented, which shared some clinical and histologic similarities to human hypertrophic scarring.

Objective: To evaluate the rabbit ear hypertrophic model on scar hypertrophy by the histomorphometric analysis and overall visual assessment of scars.

Methodology: Six full thickness wounds were created on the ventral aspect of each of 4 New Zealand White rabbits. Twelve days after wounding, one third of the scars were left exposed as control, another one third were treated with topical tocotrienol, and the remaining one third with topical tocotrienol and Micropore. Following four weeks of treatment, the scars were photographed before the rabbits were being sacrificed. The harvested scars were analysed. Histomorphometric analysis of the scar was done by the measurement of the scar elevation index or hypertrophic index. The dermal collagen organization, vascularity and inflammation were also analysed. An overall visual assessment of the scars was also made.

Results: At 12 days post wounding, the healed wounds were circular and elevated with increased vascularity. Most of the scars remain elevated at 40 days post wounding before harvest. Sixteen scars with epithelialized downgrowths into the connective tissue or fragmentation of the cartilage were eliminated. Thirty-two scars were analyzed histomorphometrically. Two thirds of the scars demonstrated significant cartilage proliferation. There was no significant difference in the scar hypertrophy between the treated and control group. There was also no difference in the overall visual assessment of the scars.

Conclusion: The rabbit ear model for excessive dermal scarring in the acute phase demonstrates some clinical and histologic similarities to human hypertrophic scarring.

BIOCOMPATIBILITY STUDIES OF CHITOSAN FILMS MODIFIED WITH PEG MATERIALS

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Introduction: Chitosan, has been proposed for biomedical application because of its excellent biological properties. However, many barriers still exist due to its physical and chemical limitations. Efforts has been made to modify natural chitosan to overcome these barriers while maintaining its biocompatibility. In this study, the biocompatibility of chitosan modified with polyethylene glycol (PEG) materials was evaluated in vitro by direct contact test method, providing a result for screening biomaterials.

Objective: To study the biocompatibility of chitosan film modified with PEG materials

Methodology: Biocompatibility of chitosan film modified with different concentrations of PEG was tested on fibroblast. The fragments of chitosan film were deposited into the 24-well plate containing confluent layer of fibroblast cells with close contact maintained between the materials and the cells. The contact was maintained for 4, 24, 48 and 72 hours. At the end of incubation period, chitosan products were removed and cell activity test were performed. The cytotoxicities of these chitosan products were compared by measuring cell survival with the tetrazolium salt reduction (MTT) assay.

Result: Cultures of the cells showed that a modified material does not cause any toxic effect to the fibroblast cells at all time period and higher percentage of cell viability was found on 50% chitosan-PEG materials. The compatibility of the materials slightly improved with proper amount of PEG, but the improvement was not significant.

Conclusion: This result demonstrated that Chitosan modified with PEG materials has increased the viability of fibroblast and effectively improved the biocompatibility of the materials.

TISSUE RESPONSE MODEL IN RAT FOLLOWING SUBCUTANEOUS CHITOSAN DERIVATIVES IMPLANT

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Introduction: The foreign body reaction is one of the important host defense mechanisms against tissue damage, which involves inflammation and scarring.

Objective: To evaluate tissue response in rats as animal model following biomaterial subcutaneous implant.

Methodology: Subcutaneous pocket was created at the back of 12 rats and chitosan derivatives gel was inserted. The implanted site were harvested on day 4, 7, 14, 21 and 28 days and fixed in 10% formalin. Specimens were dehydrated in series of alcohol (80%-100%) cleaned in xylene and embedded in paraffin wax. Section were cut into 4mm thickness and stained with Haematoxylin-Eosin and observed under light microscope for inflammatory cells, granulation tissue formation and tissue healing.

Result: At day 4-post implantation, extensive presence of neutrophils and leukocytes indicating acute inflammation were observed. At day 7 and 14, chronic inflammatory response characterized by lymphocytes infiltration was observed. In addition, numerous foreign body granuloma composed of epithelioid histiocytes and multinucleated giant cells were present. At day 21 and 28, fibrous tissue composed of collagen and fibroblasts was formed around the implants. A significant number of inflammatory cells were still present. Chitosan derivatives implants also show only minimal degradation with the increase of implantation period.

Conclusion: Tissue response to implanted chitosan derivatives takes a well-organized and coordinated inflammatory reaction. However, this material is found not to be completely degradable when implanted in vivo.

PERIPHERAL PRIMITIVE NEUROECTODERMAL TUMOUR IN A FIVE YEARS OLD CHILD - UNCOMMON TUMOUR WITH RARE SITE OF OCCURENCE

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Introduction : Peripheral primitive neuroectodermal tumour (PPNET) is a highly aggressive small cell tumour belonging to Ewing's Sarcoma family of tumours. It is rare up to 5 years of age, and accounts for as less as 4% of childhood and adolescent malignancies. We present a case of a 5 year old boy with the tumour arising from subcutaneous tissue over the pubic symphysis which is a rare occurrence site.

Case report: A five year old boy presented with a history of rapidly growing swelling over the pubic area, associated with discomfort locally. Ultrasonography revealed that the swelling was arising from the subcutaneous tissue. Excision biopsy of the tumour was done. Histopathological examination confirmed the mass as peripheral primitive neuroectodermal tumour, with PAS, S-100, Vimentin, NSE, Chromogranin stains positive. Patient responded well to chemotherapy.

PPNET tumour is documented to occur at various sites such as intra-cranial, spinal, intraabdominal viscera such as intestine, mesentery, kidney, adrenal gland, pelvic viscera, head and neck structures, chest wall. Subcutaneous tissue over the pubic area is a rare site of occurrence.

DIPHRAGMATIC ORIGIN OF A HUGE INTRA-ABDOMINAL DESMOID TUMOUR

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Introduction: Desmoid tumours are benign tumours arising commonly from anteriorabdominal wall, and are known for their potential to grow to a huge size. But desmoid tumour arising from costal origin of diaphragm growing to the pelvic cavity and compressing inferior vena cava is rare.

Case report: We reported a case of desmoid tumor in a 33 year-old lady presented with abdominal mass, progressively increasing in size, associated with bilateral pedal edema and mild shortness of breath on lying down. CTscan finding revealed the presence of a huge intra-abdominal mass, which compressed the inferior vena cava. CT scan guided biopsy was performed and confirmed the histological finding of desmoid tumour. During laparotomy for total resection of the tumor, it was found to be diaphragmatic in origin and weighed 11.3 kg. Diaphragmatic origin of such a huge intra-abdominal desmoid tumour is uncommon.

ACUTE INFLAMMATION OF BENIGN PERICARDIAL CYST IN A 2- YEAR OLD CHILD

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Introduction : Benign pericardial cyst is a relatively rare disease of pericardium seen incidently on chest x-ray in adults, and usually without any symptoms. We present a case of 2 year old child with acute inflammation of benign pericardial cyst with massive pericardial effusion and congestive cardiac failure with diastolic collapse of all the chambers of the heart.

Case report: A 2 years old boy was admitted with severe congestive cardiac failure and 2D-echo demonstrated massive pericardial effusion and a pericardial mass. CT scan could not detect the mass, and it was finally confirmed with cardiac MRI. Urgent thoracotomy and excision of the mass was carried out. Histopathology revealed the benign nature of the mass, and confirmed acutely inflamed pericardial cyst with areas of haemorrhage and necrosis. Patient recovered well after the operation and was discharged well.

Symptomatic pericardial cysts producing such an emergency situation at the age of 2 years is rare.

DETECTION OF FUSION TRANSCRIPTS IN ACUTE MYELOID LEUKEMIA (AML) USING MULTIPLEX REVERSE-TRANSCRIPTASE POLYMERIZED CHAIN (RT-PCR) REACTION

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Introduction: Leukemia associated translocations usually give rise to a chimeric gene, which will transcribe to a fusion transcript. In this study, molecular method is employed to detect these aberrations. Molecular diagnosis is useful as it can be used for risk group classification and for the detection of minimal residual disease during follow-ups.

Objective: To establish multiplex RT-PCR for detection of fusion transcripts in AML.

Methodology: Samples of bone marrow or whole blood were obtained from suspected cases of AML. The diagnosis was later confirmed by bone marrow examination. RNA extraction was performed. Quantified RNAs were subjected to one tube multiplex RT-PCR assay followed by individual nested PCRs. RT was performed at 50°C for 30 minutes followed by the first round of PCR. Aliquots were then taken from the tube for nested PCR using primers specific for each of the fusion transcript. PCR product was run on 2% agarose gel for analysis.

Results: 29 samples of suspected cases were recruited. Bone marrow aspirate confirmed the diagnosis of AML and FAB classification revealed that 9 (31.0%), 3 (10.3%), 3 (10.3%) and 14 (48.4%) cases were M2, M3, M4 and the other subtypes of AML respectively. Of these samples *AML1/ETO* fusion transcript was found in 77.8% of M2 and 66.7% of M4. All patients with M3 had *PML/RAR_α* fusion transcript.

Conclusion: Multiplex RT-PCR had been successfully established to detect fusion transcript in AML. It is a very useful and simple screening method for all patients diagnosed as AML.

RESPIRATORY SYMPTOMS AMONG SAWMILL WORKERS IN KELANTAN

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Introduction: Although sawdusts are not organic or inorganic material, the irritation effect on respiratory tract is expected.

Objective: To determine the prevalence of respiratory symptoms among sawmill workers. The association of respiratory symptoms and demographic variables were also determined.

Methodology: A cross-sectional study was conducted from May to December 2003 among randomly selected 118 sawmill workers in Kelantan. A modified version of the questionnaire for respiratory symptoms approved by the Medical Research Council Committee on Research into Chronic Bronchitis (Phoon, 1988) was used. As most of the workers are illiterate, interviews were conducted. The respiratory symptom score or index was calculated by summing up the rank of each respiratory symptom.

Results: All were Malay and 79 (66.9%) were male. The mean age was 42.6 (10.15) years. The prevalence of respiratory symptoms were 44.9%, 38.1%, 22.9%, 45.8% for cough, phlegm, chest tightness, and shortness of breath on exertion respectively. About 73% had at least one symptom. The maximum respiratory symptom index was 8.0. The study reported the distribution of symptoms and index by plots. The index of female was significantly higher than that of male after adjusting for age ($p=0.011$).

Conclusion: The study revealed that the respiratory symptoms experienced by sawmill workers were substantial. Further appropriate investigation should be done in this population so that appropriate action can be taken.

KNOWLEDGE, ATTITUDE, AND PRACTICE RELATED TO HYPERTENSION IN KIJANG VILLAGE, PANTAI CAHAYA BULAN, KELANTAN

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Introduction: Kijang Village is a rural village in Malaysia. As hypertension (HPT) was prevalent among adults (age 30 years and above) in this village 29.1% according to our recent survey, it is important to study about knowledge (K), attitude (A), and practice (P) related to hypertension (HPT) of this population.

Objectives: To determine KAP level related to HPT, to identify the specific weak area of the KAP, and to identify the high risk group (in terms of age, sex, and education level) in relation to the KAP.

Method: A cross-sectional study was conducted in January, 2005, among 103 randomly selected villagers age 30 years and above from the Kijang Village. The villagers were interviewed by using a set of questionnaire. We developed the questionnaire and conducted the interviews.

Result: There were 40 males and 63 females. All were Malays and Muslims. The prevalences of unsatisfactory level of scores were 65%, 99%, and 46.6% for knowledge, attitude and practice respectively. The weak areas identified were knowledge about early symptoms and consequences of HPT; attitudes towards sports and exercise in relation to HPT; and exercise and stress related practices. Regarding the risk groups, male had poorer practice than females; age above 50 had poorer knowledge than age between 41 to 50; and those with no formal education had poorest knowledge and practice.

Conclusion: The high prevalence of those with KAP unsatisfactory level indicates the needs for health education intervention. The study highlighted the weak areas where the intervention should be designed to focus.

ORAL CARE NURSING OF HOSPITALIZED ORAL CANCER PATIENTS: NURSES KNOWLEDGE AND AWARENESS PERSPECTIVES STUDY

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Introduction: Oral care provided by nurses in the ward is part of total holistic nursing care. Oral assessment is conducted to evaluate systemic conditions and its oral manifestations. Not much written data is available on its implementation at hospitals especially in Malaysia. There is also a vacuum of literature-probing nurses' awareness and knowledge on oral care with regards to oral cancer.

Objectives: To assess nurses' knowledge and awareness in oral care management and oral cancer. Validated Questionnaires with digital photograph for identifying oral cancers were used as a protocol for the study.

Result: 96.3% nurses agreed that oral assessment should be conducted on patients during their first admission to the wards. 91.3% nurses never used any form of guidelines for oral charting assessment. 50% nurses did not know the factors to be assessed in establishing oral health status. 67.5% of the nurses could not identify early signs of oral cancer. Majority of them acknowledged the various etiology factors of oral cancer. 68.8% nurses could not relate the effect of medication on oral health.

Conclusion: Nurses' knowledge and awareness of oral health assessment and care is inadequate. A standard evidence based oral nursing assessment protocol and charting should be created and implemented especially to nurses involved in oral care practice.

PERCUTANEOUS DRAINAGE FOR POST-TRAUMATIC HEPATIC INFECTED BILOMA AND INTRA-ABDOMINAL ABSCESS UNDER ULTRASOUND IMAGING IN A TWO-YEAR OLD GIRL

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Introduction: Hepatic biloma and intra-abdominal abscess post-blunt an intra-abdominal injury is rare in children. Percutaneous drainage under ultrasound imaging is useful for definitive diagnosis for biloma and intra-abdominal abscess. Further more, it is safe and useful therapeutic method even in a small child.

Case report: We reported a two year-old girl with grade four liver injuries and associated infected biloma and intra-abdominal abscess following blunt abdominal trauma. She underwent emergency laparotomy due to haemodynamic instability. Liver suturing was performed for nearly transected segment 4 and 5 liver injuries. Post-operatively, she was ventilated for five weeks in ICU and had *Klebsiella pneumonia* bacteremia and right hydrothorax. She did not develop jaundice even though her liver enzymes were markedly increased (AST more than 3,000 IU). Although she underwent a right pleural drainage and antibiotic therapy, and the subsequent CXR showed an improvement, high-grade fever persisted. Computed tomography showed a well-defined collection in the previous area of transected liver and huge left pelvic intra-abdominal fluid collection causing left hydronephrosis. Both fluid collections were successfully treated by ultrasound-guided percutaneous drainage. The biloma drain was kept for seven days and the intra-abdominal abscess was kept for ten days. Subsequent ultrasound imaging revealed resolved biloma and intra-abdominal abscess.

BESTIOSEXUALITY: CHICKEN ON DANGER!

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Introduction: This is a rare case of paraphilias, results from underlying arteriosclerotic changes and specific fronto-temporal deficit of the brain.

Case report: Mr. JMS, a 66-year-old Malay gentleman, studied up to Standard 6, a four-time divorcee, with past history of psychiatric admission with ?pseudodementia and depression was brought by a daughter with 3 years history of increased talkativeness, sodomizing domestic animals, kissing to women's picture in magazines and female undergarments secretly. On one occasion, he was seen attempted to touch a young girl with sexual intention. There is no history suggestive of irritability, hostility, grandiosity or other psychotic symptoms. He worked as a fishmonger until 1992 and currently doesn't have any financial responsibilities. He spent his time by wandering around the village, visiting coffee shop and sleep in the 'mosalla'. MSE revealed highly cooperative and well-mannered man with, overfamiliarity, jocularity and with infectious affect. No formal thought disorder or other psychotic or mood symptoms could be elicited. MMSE revealed impairment in short-term memory. Physical examination revealed no CNS abnormalities. Neuropsychological assessment revealed of fronto-temporal deficits with no evidence for diffuse brain impairment. Blood investigations to rule out syphilis/inflammatory disease were within normal limits. CT scan revealed multifocal cerebellar infarctions, lacuna infarction in the limbic areas, old occipital infarctions and ectatic vertebrobasilar arteries suggestive of underlying arteriosclerotic disease. This case report illustrates how behavioural manifestation could be evident due to organic pathology.

ASSESSMENT OF MALE REPRODUCTIVE PERFORMANCE IN NORMAL AND *ANDROGRAPHIS PANICULATA* TREATED RATS

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Introduction: Reproductive toxicity forms an important aspect of the safety profile of herbal formulation. The present study is designed to investigate possible toxic effects of *Andrographis paniculata* (AP) on male reproductive system. Various researchers had reported that AP has anti fertility effects and potential toxicity. Therefore investigation into its possible toxic effects is extremely important before product could be recommended for human consumption.

Objective: To compare the male reproductive performance (MRP) using mating, pregnancy and fertility indices between the rats treated with AP and controls.

Methodology: Fifty male rats were given a 50% ethanol extract of AP (APE) by gavaging for 10 weeks, while another 10 male rats were given distilled water. In the MRP procedure, each male rat was separated into a single cage and was caged with three female rats, 3 hours daily for 14 days. Vaginal smears were performed daily following mating period. Mating, pregnancy and fertility indices were obtained.

Results: There are no significant difference observed in mating index, pregnancy index and fertility index among control and groups treated with APE.

Conclusion: APE did not affect male rat's mating, pregnancy and fertility indices.

ANAEMIA: SOCIAL IMPACT OF AN AVOIDABLE MISTAKE

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Introduction. Anaemia is a condition rather than a disease. Both thalassaemia and iron deficiency anaemia (IDA) give rise to hypochromic microcytic anaemia. At a glance the full blood picture may not be enough to differentiate between the two conditions. Proper history taking as well as confirmatory tests are required to establish the diagnosis. Patients with IDA can be cured with simple inexpensive therapy whereas those with thalassaemia live on carrying a genetic defect with them.

Case Report. A 48-years old man presented with symptomatic anaemia 13 years ago and was diagnosed as having thalassaemia, hence treated with regular blood transfusions every 3 to 4 months. He remained single for he did not wish his genetic defect to be transmitted to his offspring. He did not receive any form of iron therapy. He then presented to us with a hemoglobin (Hb) level of 3.9g%, very pale and thin, with normal facies and no splenomegaly. Se Ferritin was 8.6 ng/mls and marrow iron stores were absent. Hb electrophoresis showed normal globin chain pattern. There was no evidence of alpha thalassaemia. He had IDA. Following 6 weeks of oral iron supplements alone his hemoglobin increased by 3.4g%, his weight gained 5kg and he appeared healthier. The cause for his IDA remained elusive despite extensive investigations. His hemoglobin subsequently normalized and he now leads a normal life in body and mind. We wished him well and perhaps not too late to look for a bride.

SCREENING OF IN VITRO GENOTOXICITY ACTIVITY OF LOCALLY PRODUCED HYDROXYAPATITE USING DDRT-PCR TECHNIQUES

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Introduction: Toxicogenomics is the study of the toxic effects on the genome. In this study, a metabolic reaction to the xenobiotic, hydroxyapatite (HA) was analysed by studying the expression of genes affected by this compound.

Objective: To screen for genes that may be induced by HA in osteoblasts.

Methodology: The gene expression of osteoblast cell line treated with different HA concentration were observed. RNA was extracted from osteoblast cells and transcribed into cDNA. Using random primer from *GeneFishing* kit, the genes were subsequently amplified using a technique known as *differential display – PCR* (DD-PCR). The pattern of gene expression from the treated osteoblast cell line was compared to the untreated cells as well as a cells treated with Mitomycin C.

Results: Some differences in DNA amplification were detected. However, there is no difference of genes expressed was detected in cells with different HA concentrations.

Conclusion: Further analysis by cloning DNA fragments and DNA sequencing should be carried out to determine which genes are differentially expressed in respond to HA.

CONSUMPTION OF TRADITIONAL MEDICINES/HERBS AMONG MALAY KELANTENESE WOMEN AT (HUSM)

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Introduction: In Malaysia, the use of traditional medicines/herbs had been a part of the traditional postnatal beliefs and practices among the postnatal women. Traditional medicines/herbs has been used for primary health care in developing countries, and in countries where conventional medicine is predominant in the national health care system. It is important that health care professionals acquire information of traditional medicines/herbs consumption among Malay Kelantanese women.

Objectives: To avail information of traditional medicines/herbs consumption among Malay Kelantanese women, types and preparation used, and to explore their views on integration of traditional medicines/herbs with modern health care delivery system.

Methodology: This is a descriptive study. 70 women attending Antenatal Clinic, Hospital USM were survey and their views on traditional medicines/herbs consumption analyzed by SPSS version 11 using frequency and descriptive statistics.

Results: Majority 34.2% respondents consumed traditional medicines/herbs due to its beneficial effect in enhancing uterine contraction after childbirth while another 34.2% consumed them for vitality. The main medicinal/herb utilized were Manjakani (*Cympsballae Tinctoria*). Majority 10% (strongly agree) and 85.8% (agree) support for integration of traditional medicines/herbs into modern medicines.

Conclusion: Manjakani hold important position in the Malay Kelantanese community. Traditional medicines/herbs would continue to be use and most respondents support for integration of traditional medicines/herbs into modern medicines. Dosage of these traditional medicines/herbs were found to be varied and regimes not consistent. More work need to be done to establish the safety. The issue standardization and optimization of dosage is of paramount importance and can help in its acceptance into modern, evidence based health care system.

SPRING-LOADED PLUNGER ATTACHMENT FOR RETENTION OF REMOVAL PARTIAL DENTURE: A CASE REPORT

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Introduction: The purpose of constructing partial denture is to restore function and aesthetic of partially edentulous patients. However, in order to achieve the point, a good denture design should be obtained. The use of traditional clasp as a retainer has been proven sufficient to retain a partial denture in patient's mouth. Even so, the clasp can compromise the aesthetic of the denture especially when placed at the visible teeth such as in the anterior area. In the situation where the use of clasp may compromise the aesthetic, other type of attachment should be used to retain a denture, such as spring-loaded plunger attachment.

Case report: Spring-loaded plunger attachment is one of the attachments that can be used to provide retention of a denture. The attachment is placed in the denture where a plunger part is facing and in contact with the adjacent tooth; in the rest position, the attachment is placed about 1mm below undercut and totally in passive state. The attachment does not require crown preparation, simple in fabrication, allows hinge freedom and slight vertical resilience, and provides excellence retention with superior aesthetic and hygiene. This clinical report describes the use of spring-loaded plunger attachment to achieved aesthetic and function in fabrication of denture. The spring-loaded plunger attachment was used to replace the unsightly traditional clasp at teeth in anterior region.

TIME COURSE STUDY ON OXIDATIVE STRESS IN KIDNEY OF SPONTANEOUSLY HYPERTENSIVE RAT

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Introduction: Oxidative stress as assessed by lipid peroxidation and antioxidant levels, has been observed in hypertension. Oxidative stress has also been recognised to lead to hypertensive kidney damage.

Objective: To determine lipid peroxidation and antioxidant levels in a time course manner in spontaneously hypertensive rats (SHR) as compared to normal Wistar-Kyoto rats (WKY).

Methodology: Age matched (8, 16, 24, 32, 40 and 48 weeks old) groups of SHR and WKY rats (n = 6 / group) were used for the study. At each age period, the rats were sacrificed after measuring their blood pressure and body weight. Blood was collected for measuring serum total antioxidant status (TAS) and kidney homogenates were used for the estimation of lipid peroxidation (thiobarbituric acid reactive substances - TBARS), enzymatic antioxidants (superoxide dismutase - SOD, catalase - CAT, glutathione peroxidase - GPx, glutathione reductase - GR, glutathione S-transferase - GST) and non-enzymatic antioxidant (reduced glutathione - GSH).

Results: Blood pressure of SHR increased progressively from 8 weeks onwards and was significantly higher than WKY throughout the study. TBARS levels was significantly higher in the kidney of SHR from 24 weeks onwards. Most of the kidney antioxidant enzymes studied as well as GSH and serum TAS, showed significantly reduced activity in SHR.

Conclusion: Overall the findings showed that there is progressive increase in lipid peroxidation and reduction in antioxidant levels in the kidney of SHR resulting in oxidative stress. This implies that oxidative stress plays a role in hypertensive kidney damage.

PRACTICE OF NURSES IN DRUG ADMINISTRATION PROCESS IN A GENERAL HOSPITAL IN MALAYSIA

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Introduction: Drug administration process involves determination of drug by physicians, preparation of drug by pharmacists, and administration of drug by nurses. In implementing these events by multidisciplinary teams, medication errors, which include wrong drug and wrong dose of medication given to patients, may occur and nurses always hold the responsibilities for the mistakes.

Objectives: To assess nurses' practice in drug administration process and identify factors contributing to drug administrations errors.

Methodology: This descriptive study was conducted in Hospital Kuala Lumpur in Malaysia. Thirty registered nurses from medical and surgical pediatric wards were randomly selected. Data were collected using a checklist to assess nurses' drug administration practice and a questionnaire to identify factors contributing to medication errors. SPSS 11 was used to analyze the results.

Results: There was low prevalence of medication errors (26.7% (n=8)). In contrast, all nurses in the study were not following the right practice of drug administration procedure when giving drugs to patients. The contributing factors related to medication errors were unclear prescription by physician (mean 4.13±1.00), vague verbal prescription (mean 4.13±0.86) and nurses were frequently disturbed with other tasks during drug administration process (mean 4.13±0.78).

Conclusion: Nurses in the study failed to conform to the right procedure of drug administration. Additionally, important factors contributing to medication errors were physician and ward management system factors. It is recommended that both issues should be addressed urgently for the sake of both patients and nurses.

MICROBIAL STATUS OF FOOD AND DRINKS IN CAMPUS CAFETERIAS

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Introduction: Microbes in food and drinks can be cross-contaminated to people if hygienic food preparation is not being practiced. Consequently, it may contribute to various foodborne illnesses. This preliminary study was conducted to determine the microbial status and to assess the safety and sanitation level of food and drinks from several campus cafeterias.

Methodology: Fifty foods and drinks samples sold by five cafeterias in a local university campus were used in this study. These samples were collected randomly, then kept in the iceboxes and analyzed within one hour in order to inhibit microbial multiplication. Analysis was done to detect Aerobic Plate Count (APC), and Total Coliform (TC).

Results: Result of the study has demonstrated significant count of microbes ($>50,000$ CFU/g or CFU/mL for APC) and (>10 CFU/g or CFU/mL for TC) was found in 22 % (n=11) of the analyzed samples. This indicates that there was high bacteria contamination in these food samples.

Conclusion: From the results of the study, it is recommended that food handlers should adhere to the basic food safety practices as contaminated food may contribute to food poisoning outbreak. Thus, regular food safety monitoring and education should be given to these food handlers. It is advisable to follow the HACCP standards of food preparation and handling to ensure food safety in the campus cafeterias.

MORPHOLOGICAL CHANGES OF EARLY MOUSE EMBRYOS IN THE PRESENCE OF PERITONEAL FLUID FROM INFERTILE WOMEN WITH ENDOMETRIOSIS

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Introduction: Peritoneal fluid from infertile women with endometriosis (PF-E) causes degeneration of early embryos *in vitro*. However, morphological changes of the degenerated embryos cultured in PF-E and the mechanism of their degeneration have not been clearly described.

Objectives: To determine the effects of peritoneal fluid from infertile women with different stages of endometriosis, on the development of early mouse embryos and to document the morphological changes in embryos cultured in peritoneal fluid from infertile women with endometriosis (PF-E)

Methodology: Peritoneal fluid was obtained from 21 infertile women with endometriosis (7 minimal or mild; 7 moderate; 7 severe endometriosis) during laparoscopy. Freshly retrieved two-cell mouse embryos were cultured for 3 days in 1ml modified Whitten's medium either in the presence or absence of 50µl (5%) of PF-E. Embryo development was observed microscopically at 24, 48 and 72 hours.

Results: Development of two-cell mouse embryos to blastocysts was suppressed in all cultures containing peritoneal fluid ($p < 0.001$, Fisher exact test). Embryos that did not develop normally underwent degeneration characterized either by dark granular cytoplasm, blastomere fragmentation or cell mass retraction from the zona pellucida. These changes were observed in degenerated embryos cultured in peritoneal fluid from all stages of endometriosis.

Conclusion: Peritoneal fluid from infertile women with endometriosis was embryotoxic. However, the morphological changes of the degenerated embryos in the presence of PF-E were not strongly characteristic of either apoptosis or necrosis. Previous study has shown that interleukin-6 has role as putative embryotoxic factor in PF-E.

DUODENAL ATRESIA

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Introduction: Duodenal atresia is a rare condition. The incidence of duodenal atresia is 1:6000 who usually present within hours of birth with vomiting.

Case Report: We report a case of a newborn boy born premature at 35 weeks was noted to have an epigastric mass at day 2 of life. He also had features of Down syndrome. Abdominal radiograph revealed 'double-bubble' appearance demonstrating the bubble of stomach and the dilated duodenum with no distal gas. Laparotomy with duodeno-duodenostomy was performed the next day. On day 3 post-operation, the anastomotic site was perforated as evidenced by pneumoperitoneum and confirmed by upper gastrointestinal study. Relaparotomy with duodenostomy and omental patch was performed. He was discharged well one month after second laparotomy.

THE VARIOUS RADIOLOGICAL PRESENTATION OF CONGENITAL DIAPHRAGMATIC HERNIA – THE HUSM EXPERIENCE

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Introduction: CDH is classified into two types, Bochdalek hernia (most common) and Morgagni hernia. The classical radiographic appearance of congenital diaphragmatic hernia includes presence of cyst like structures (loops of bowel) within the hemithorax with or without contralateral mediastinal shift (depending on severity). The abdomen is relatively devoid of gas. However in Morgagni hernia, the classical radiographic presentation appears as unilateral, mediastinal, and basal masses containing a variety of abdominal organs, including air-filled loops of intestine. Differential diagnosis of congenital diaphragmatic hernia should be ruled out such as congenital cyst adenomatoid malformation (CCAM), congenital lobar emphysema (CLE) or eventration of the diaphragm. We illustrated 4 different radiological appearance of CDH seen in our set up.

Case Report: We presented four cases of CDH, which were operated in HUSM from 2001-2004. Intra-operatively, the diaphragmatic defects were postero-lateral in 3 cases, which constitute Bochdalek hernia and one case involved both leaves of the diaphragm. The plain chest radiograph in the cases showed a variable presentation range from classical radiographic appearance to not so classical.

Recognition of radiological features of CDH is essential for correct treatment to be made such as medical or surgical treatment.

DEMOGRAPHIC CHARACTERISTICS OF COLORECTAL CANCER UNDER FORTY IN HUSM

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Introduction: Colorectal cancer (CRC) is rarely seen in young adults and their early presentation is often overlooked resulting in late presentation of the disease.

Objective: To determine the demographic data and clinical characteristics of colorectal cancer in patients less than forty years of age in Hospital USM.

Methodology: All cases of patient less than 40 years old presenting with primary carcinoma of the colon and rectum during 1998 to 2004 are collected. Their demographic data and presenting symptoms are reviewed.

Results: A total of 19 patients were analysed and their mean age is 29 years old. The main presenting symptoms are abdominal pain (89.5%), altered bowel habits (89.5%) and significant weight loss (89.5%). The average delay between the onset of symptoms and treatment was 10 months.

Conclusion: Due to the rarity of colorectal cancer in the young adults; physicians and health care personnel need to thoroughly investigate young patients presenting with abdominal pain and altered bowel habits.

A STUDY ON THE PREVALENCE OF HIGH CARIES AMONG 16-YEAR-OLD SCHOOL CHILDREN IN TUMPAT DISTRICT, KELANTAN

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Introduction: Dental caries is ubiquitous in all population in the world. Since 1970s there was a decreasing pattern of caries in Malaysia but in Kelantan, the caries rate is among the worst in Peninsular Malaysia, with pockets of population still experiencing high prevalence of dental caries.

Objectives: To describe the prevalence of caries among 16-year-old school children in Tumpat district.

Methodology: This is a cross-sectional study involving 1088 consented 16-year-old school children in Tumpat district. Intraoral examination was carried out using DMF score in their school on a portable dental chair using portable dental light. The subject were considered having high caries experience if the DMFS score is ≥ 8 . Data was analyzed using SPSS version 11.

Result: The prevalence of caries was 82.1%. The percentage of subjects having high caries experience was 23.4% (n=254). Girls (75.2%) were more susceptible to develop caries as compared to boys (24.8%). The major component was D (decay) component, which indicate a big volume of untreated lesions in this group. Similar with other studies it was found that the most susceptible teeth to dental caries were molars.

Conclusion: In spite of tremendous reduction of dental caries in Malaysia, the incidence among 16-year-old school children in our local population is still high. The factors contributing to this need to be explored and immediate remedy need to be implemented.

ORAL HEALTH STATUS AND PROSTHETIC NEEDS OF AN ELDERLY POPULATION LIVING IN “PONDOK” IN KELANTAN.

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Introduction: The average life expectancy for Malaysian population's has progressively increase to 70 years for males and 75 for females.

Objective: To describe the dentition, prosthetic status and dental needs among elderly living in “Pondok” in Kelantan.

Methodology: It was a cross-sectional study and 396 subjects were selected using simple random sampling technique. The response rate was 93.2% (369 subjects participated).

Results: Majority of the subjects were females (92.4%) and edentulous (81.0%). Among the dentate subjects, the mean number of natural teeth present was 14.63 (8.02 SD), only 38.6% presented with 20 or more functional natural teeth, 55.7% had between 1-19 functional teeth, and 5.7% had none. Of the edentulous subjects 14.0% reported not having any prosthesis and among complete denture-wearers, 38.9% were found to have defective and poor dentures.

Conclusions: The findings of this analysis clearly demonstrate high unmet needs for prosthetic care where 74.4% of the dentate and 47.5% of the edentate subjects were found in need of dentures for improved function and aesthetics. Thus, there is a need to implement oral health care programme for elderly with the aim of improving their oral health status and their quality of life.

CALIBRATION OF DENTAL NURSES FOR EVALUATION OF FISSURE SEALANT PROGRAMME AMONG SCHOOL CHILDREN IN THE DISTRICT OF PONTIAN

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Introduction: It has been proposed that, the duty of oral examinations in dental epidemiological studies which traditionally done by dental officers, can be extended to dental nurses. An example of such studies is the evaluation of fissure sealant program, a preventive program to prevent and control caries in pit and fissures of the teeth.

Objectives: To determine the level of agreement of examiners (dental nurses) against the standard examiner (dental officer) in detecting caries and also to compare the mean caries experience (DMFT) of examined teeth between examiners and standard examiner.

Methodology: All dental nurses (n=10) in Pontian district were included in this study. One-day training was conducted to get them familiarized with the criteria of caries diagnosis by using visual method. In the study, 40 molar teeth were examined. The agreement was analyzed in terms of kappa statistic, 95% confidence interval of mean DMFT and sensitivity and specificity values.

Results: Four examiners achieved almost perfect agreement (0.81 or greater). Kappa statistic ranged from 0.471 to 1. Overall kappa statistic was 0.6048. Mean DMFT for standard examiner was 0.17(0.063). The mean DMFT tooth for dental nurses ranged from 0.14 to 0.28. Two examiners had mean DMFT scores too high compared to that of standard examiner. Sensitivity scores from 0.667 to 1 and specificity ranged from 0.867 to 1.

Conclusion: Dental nurses can be qualified as dental examiners by giving the proper training. The conduct and content of the training should be further studied.

TOOTH WEAR: PREVALENCE AND ASSOCIATED FACTORS AMONG 16-YEAR- OLD SCHOOL CHILDREN : A PILOT STUDY

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Introduction: Tooth wear has been used to describe the non-carious pathological loss of tooth tissue which results from the interaction of three processes: attrition, erosion and abrasion.

Objectives: To estimate the prevalence of tooth wear among 16-year old school children and to determine the feasible sample size from the variable explored in the study.

Methodology: Fifty-five subjects were examined clinically, then followed by self administered questionnaires for them to answer. Questionnaires consisted of socio demographic and associated variables for tooth wear which were gathered from literatures. Charting of tooth wear and caries experiences were done using Smith and Knight tooth wear index 1984 and WHO criteria respectively. Raw data of tooth wear were then entered into the software programme to determine the pathological tooth wear.

Result: Subjects were all Malays with 49.1% females and 50.9 % males. 63.6 % had very mild tooth wear, 10.9 % mild tooth wear, 5.5% moderate tooth wear and 1.8 % severe tooth wear. From these only 18.2% had pathological tooth wear. From all the associated variables explored, the feasible sample size was 740.

Conclusion: Overall prevalence of raw tooth wear among these school children was 81.8 % and the prevalence of pathological tooth wear was 18.2%. Although the biggest sample size revealed from the study was 1695, 740 were chosen for the purpose of research due to time constraint.

CEREBRAL VENOUS THROMBOSIS IN A CHILD

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Introduction: Cerebral venous thrombosis in children is rare, occurring in 0.67 case per 100,000 children. Causes of cerebral vein thrombosis are broadly categorized as septic or aseptic causes. Homocystinuria is due to defect of methionine metabolism, which occurs in 1 case per 344,000 populations, may present as a thrombotic syndrome. High levels of homocystine lead to endothelial damage and increased platelet aggregation. CT, MR imaging, conventional angiography, and CT venography have been used to detect cerebral venous thrombosis. Imaging findings in cerebral venous thrombosis can be grouped into (a) intraluminal thrombus (such as empty delta sign, "cord sign"), (b) venous collateral flow, (such as gyral and tentorial enhancement), (c) brain involvement (such as hemorrhage, infarcts, edema), and (d) changes in flow dynamics, which are most evident at MR imaging. Anticoagulation therapy is one for the treatment option. We reported a rare cause of cerebral venous thrombosis in a 12 year-old girl.

Case Report: A 12 year-old girl, a suspected case of homocystinuria presented with history of headaches for 5 days duration. She also developed two episodes of generalized tonic clonic fits and acute onset of upper limb and lower limb weakness. Physical examination revealed right-sided hemiparesis with absent right-sided light reflex. CT scan revealed presence of subarachnoid haemorrhage at the vertex and the cerebral angiogram showed features of cerebral venous thrombosis. Cerebral venous thrombosis in childhood is a serious disease that is being increasingly diagnosed by more sensitive diagnostic tools and increasing clinical awareness of the disease.

KNOWLEDGE, ATTITUDE AND PRACTICE OF SMOKING AMONG SECONDARY SCHOOL STUDENTS

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Introduction: Smoking has been a major public health problem in Malaysia. Among the various strategies, educating school children about smoking is considered important.

Objectives: To explore the knowledge (K), attitude (A) and practice (P) related to smoking among secondary school students in Sekolah Menengah Kebangsaan Kedai Buloh, Kota Bharu. To determine the KAP level, weak area related to KAP, and identify risk groups in the aspect of KAP.

Method: A cross-sectional study was conducted in January 2005 among 200 randomly selected secondary school students (Form 2 students) by using self administered questionnaire developed by authors.

Result: Among 200 students, all were 14 years old, and 99 (49.3%) were male. Twenty-three (11.5%) students reported as being smokers, and 19% of them smoked more than 5 cigarettes per day. About 69%, 54%, and 52% of students had lower level of Knowledge, attitude and practice respectively, than satisfactory levels which are 75 percent scores. The weakest areas were identified as awareness of contents of cigarette, attitude towards no smoking area, and practice of avoiding smoking. Males are poorer in knowledge, attitude and practice compared to females.

Conclusion: Prevalence of unsatisfactory level of KAP is alarming. The proper health education intervention programme is indicated. Weak areas where the intervention should be designed to focus, is highlighted.

THE INFLUENCE OF COUNSELING ON THE COMPLIANCE OF CANCER PATIENT UNDERGOING CHEMOTHERAPY AND RADIOTHERAPY TREATMENT

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Introduction: Cancer treatment can be a stressful time for patients, family, loved one and care providers. Oncology counseling can assist with the emotional aspects of cancer including adjustment to illness, role changes coping, anxiety and healing.

Objective: To determine the influence of counseling on the compliance of cancer patient undergoing chemotherapy and radiotherapy.

Methodology: This is a comparative study involving all cancer patients attending Department of nuclear medicine, Radiotherapy and Oncology from 1st January until 31st December 2004. The patients were divided into two groups, one group received counseling and the other without counseling prior to the treatment plan. The content of counseling consists of education about her/his disease, prognosis, treatment option and palliative care. The compliance towards radiotherapy and chemotherapy treatment were recorded and compared.

Result: 410 cancer patients were involved in this study. There were 210 patients who received counseling and 200 without counseling. From that 209 (51%) underwent chemotherapy while 201 (49%) underwent radiotherapy. 15 patients defaulted their chemotherapy treatment in non-counseled group compared to 4 patients in counseled group ($p=0.026$). In radiotherapy treatment, only 5 patients who received counseling defaulted the treatment compared to 20 patients among those without counseling ($p=0.00$).

Conclusion: Counseling improves the compliance of cancer patients undergoing chemotherapy and radiotherapy.

ASSESSMENT OF NUTRITIONAL STATUS AMONG CANCER PATIENTS UNDERGOING RADIOTHERAPY AND CHEMOTHERAPY

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Introduction: Malnutrition is a common complication of cancer and its treatment. Prevention or early intervention must be the primary goal. All patients with cancer should have their nutritional status screened and assessed at the time of diagnosis and re-evaluated throughout the course of treatment and recovery.

Objectives: To determine the baseline nutritional status and to detect its changes in cancer patients undergoing chemotherapy and radiotherapy.

Methodology: The overall wellbeing of cancer patients receiving radiotherapy and chemotherapy in the Oncology Ward and Oncology Clinic of HUSM were assessed. The patients were assessed for the nutritional status, Body Mass Index (BMI) and performance status before, during and after their treatment.

Result: 64 cancer patients have been assessed so far, ranging from age 13-73 years. There were 39 male and 25 female. Before chemotherapy, 19% of patients were severely malnourished while 50% were mild to moderately malnourished. In radiotherapy group, 35% were malnourished and 24% were mild to moderately malnourished. BMI decreased during and after chemotherapy but it improved in patients receiving radiotherapy. This could be due to the nutrition counselling that was given to the patients intermittently. The performance status remain almost the same before and after treatment in both group.

Conclusion: Malnutrition should be detected early so that health education and appropriate nutritional advise can be incooperated into the treatment protocol. This improves quality of life of cancer patients.

OPTIC NERVE HEAD CHARACTERISTICS OF ADULT MALAYS USING HEIDELBERG RETINAL TOMOGRAPH II (HRT II)

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Objective: The utilisation of confocal laser scanning ophthalmoscope (HRTII) to determine the optic nerve head parameters in a adult Malay population

Methodology: This is a cross-sectional study involving 92 healthy adult Malay volunteers. Both eyes of the volunteers were subjected to optic nerve head topography using HRT II. Exclusion criteria included significant ocular diseases, family history of glaucoma, raised intraocular pressure and abnormal visual fields.

Result: There were 34 males (mean: 39.34 +/- 9.27, 23-54 years) and 58 females (mean: 33.29 +/- 8.55, 23-52 years). Gender of patient did not influence the optic nerve head parameters. Optic nerve head parameters of the Malay population include disc area = 2.46 +/- 0.48mm², cup area = 0.53 +/- 0.43mm² and retinal nerve fibre layer cross sectional area = 1.47 +/- 0.40mm². Mean horizontal cup-disc ratio (CDR), vertical CDR and linear CDR were 0.45 +/- 0.20, 0.31 +/- 0.21 and 0.43 +/- 0.16 respectively.

Conclusion: Optic nerve head parameters in Malays differ from Caucasians. HRT II provides objective and quantitative assessments of the optic nerve head. However normative data is essential to differentiate early optic nerve head glaucomatous damage from normal. This study provides the required normative data for the Malay population.

VALIDATION STUDY OF AMBULANCE SERVICE FORM EMERGENCY DEPARTMENT, HUSM

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Introduction: Pre-hospital service is an important entity in emergency services. With the development of Emergency Medical Dispatch Team HUSM, proper documentation is needed to ensure the quality of the service for the benefit of patients care and future research on pre-hospital service.

Objective: This study is to validate the Emergency Department, HUSM Ambulance Service form.

Methodology: The Ambulance Service form Emergency Department, HUSM was formatted and undergone Face validity, Content validity and Inter rater reliability. Three Emergency Medical dispatchers (EMD) were selected and 30 case scenarios were built up. Those EMD received 30 ambulance telephone calls each and given similar 30 case scenarios by similar caller. All EMD needed to fill in the forms. All filled forms were collected and 43 elements of the form were analyzed by Kappa agreement and Intra-class Correlation Coefficient.

Results: Content validity had been obtained by a literature, representatives of EMD and Emergency Physicians. 70% of the elements had perfect agreement. 20% of the elements gave Kappa value between -0.0541 to 0.2676 and 7% of the elements gave Single measures intra-class correlation in between 0.257 to 0.851 (95% CI -0.44 – 0.921; $p < 0.001$ to 0.054).

Conclusion: This form has good reliability and valid to be used as Ambulance Service Form.

THE EFFECTS OF 15-DEOXY-^{12,14}PROSTAGLANDIN J₂ ON CELL GROWTH AND APOPTOSIS INDUCTION IN HeLa CELLS

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Introduction: Activation of Peroxisome proliferator-activated receptor (PPAR) has been linked to induction of differentiation and apoptosis in a number of cancer cells. However, the possible effects of PPAR agonists on human cervical cancer cells are still unclear.

Objective: To determine the effects of 15-deoxy-^{12,14} prostaglandin J₂ on cell growth and apoptosis induction in HeLa cells.

Methodology: In this study, a natural PPAR ligand, 15-deoxy-^{12,14}-Prostaglandin J₂ (15d-PGJ₂) was used to treat HeLa cells, a human cervical cancer cell line, at various incubation periods. The cytotoxic effect of 15d-PGJ₂ was determined by lactate dehydrogenase (LDH) release assay. In addition, a fluorescein-conjugated monoclonal antibody against cytokeratin-18 (CK18) was used to measure apoptosis by flow cytometry.

Results: We found that 15d-PGJ₂ significantly induced cytotoxicity and reduced cervical cancer cell growth after 6 h of ligand treatment ($p < 0.01$). Consistent to this, 15d-PGJ₂ also increased the percentage of apoptosis in HeLa cells after 6 h treatment ($p < 0.01$), as measured by the increase in CK18.

Conclusion: From these results, we propose that PPAR may inhibit cervical tumour progression, possibly via induction of apoptosis and may therefore be an important therapeutic target in preventing cervical cancer.

A PLASMID DNA VACCINE ENCODING ANTIGEN Mtb 8.4 AND Ag85B AS A CANDIDATE VACCINE AGAINST TUBERCULOSIS

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Introduction: Tuberculosis (TB) is caused by *Mycobacterium tuberculosis* and is spread from person to person through the air. At present TB is the sixth largest cause of death and active infection is present in 60 million persons at one time. The only TB vaccine currently available is an attenuated strain of *Mycobacterium bovis*, bacille Calmette Guerin (BCG). However, the efficacy of BCG vaccines continues to be debated. BCG imparts inconsistent efficacy varying between 0 to 80% in randomized control trials. BCG was also not efficient against pulmonary TB in adults. Therefore, a more effective vaccine against TB is urgently needed. DNA vaccination is a new approach to the control of infectious agents. Previous studies in animals have shown that DNA vaccine was able to induce both humoral and cellular immune responses. Mtb 8.4 recombinant protein elicit strong CD4⁺ T cell and CD8⁺ CTL responses, while rBCG overexpressing Ag85B have been reported to provide better protection than BCG.

Objectives: To develop a plasmid DNA vaccine encoding the candidate TB antigens Mtb 8.4 and Ag85B by using assembly PCR.

Methodology: In this study, Balb/c mice were immunized intramuscularly (i.m) with 50 μ g of a DNA vaccine containing the two antigens, namely pNMN023, in each hindleg.

Results: Intracellular cytokines analysis showed that both CD4⁺ and CD8⁺ T cells produced IFN- γ when stimulated *in vitro* with both antigens. Splenocytes from immunized mice were also found to proliferate more aggressively when stimulated with the antigens compared to the vector alone.

Conclusion: DNA vaccine encoding selected epitopes of *Mycobacterium tuberculosis* is a potential candidate vaccine against tuberculosis.

IMMUNOGENICITY OF RECOMBINANT *MYCOBACTERIUM BOVIS* BACILLE CALMETTE GUERIN EXPRESSING 19 kDa C-TERMINUS OF MEROZOITE SURFACE PROTEIN-1 (MSP-1C) IN BALB/C MICE

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Objective: To develop a recombinant BCG (rBCG) expressing the 19 kDa C-terminus of merozoite surface protein-1 (MSP-1C) of *Plasmodium falciparum* that can enhance both cellular and humoral immune responses.

Methodology: The expression of rBCG containing the synthetic MSP-1C was determined by Western blotting. Immunogenicity studies have been carried out by immunizing BALB/c mice with 2×10^6 CFU of rBCG-pNMN016 containing the MSP-1C epitope through the intraperitoneal route. The sera collected from immunized mice were tested by ELISA analysis to demonstrate the production of specific antibodies against MSP-1C epitope. The lymphocyte proliferative response to MSP-1C antigen from rBCG-pNMN016 immunized mice was also determined by performing lymphocytes proliferation assay.

Results: A rBCG expressing MSP-1C was successfully expressed in BCG under the control of the heat shock protein 65 promoter from *M. tuberculosis*. The sera collected from immunized mice demonstrated a significant increase in all the IgG subclasses against MSP-1C epitope than those immunized with the parent BCG or with the carrier buffer, PBS-T₈₀. Booster immunizations enhanced the production of specific antibodies against MSP-1C. Furthermore the lymphocyte proliferative response to MSP-1C antigen from rBCG-pNMN016 immunized mice was also significantly higher than those in the control groups.

Conclusion: Our preliminary study demonstrated that the rBCG-pNMN016 is able to induce a specific immune response against the malarial epitope and has the potential to be a vaccine against this disease.

A RARE CASE OF A SPLENIC CYST IN A CHILD WITH 'CORNELIA DE LANGE' SYNDROME

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Introduction: Cornelia de Lange Syndrome was originally reported by Cornelia de Lange in 1933. These patient show a marked retardation of growth, failure to thrive and had feeding difficulties. About 30% of Cornelia de Lange had gastro intestinal problems mainly gastro esophageal reflux, various forms of obstruction including duplication of gut, malrotation of colon with volvulus and pyloric stenosis.

Case report: We report a 9 year-old Malay boy, a known case of Cornelia de Lange Syndrome presented with abdomen distention for 3 weeks. He also had frequent non-bilious vomiting, associated loss of appetite and loss of weight. On abdominal examination, there was a mass felt over left upper quadrant, measuring about 10x 8cm, firm in consistency, and smooth surface. CT scan abdomen showed a huge heterogeneous mass measuring 8.4cm x 12 cm x 15.5 cm, pushing the spleen laterally. The impression of ? Foregut duplication cyst was made. However, barium meal showed a normal gastrointestinal tract with the stomach and small intestine pushed to the right. He underwent exploratory laparotomy and splenectomy. The finding was a huge splenic cyst with multiple splenic infarcts. Post operative period was uneventful. Exploratory laparotomy was indicated because there were features of upper intestinal obstruction. A primary cause for splenic cyst is rare. Clinicians treating patients with this syndrome should be aware that such patients might be at risk of developing severe gastrointestinal anomalies.

SPONTANEOUS BOWEL EVISCERATION SECONDARY TO UMBILICAL CORD SEPSIS (OMPHALITIS)

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Introduction: Umbilical cord sepsis (omphalitis) may cause serious complications and contribute to neonate morbidity and mortality. The incidence of omphalitis in hospital born babies was 2.3%. About 21.3% babies delivered at home were admitted for neonatal sepsis, meningitis, birth asphyxia and other cause. They were found to be concomitantly suffering from omphalitis. The primary pathogens implicated in these infections were *Staphylococcus aureus* and *Streptococcus pyogenes*. The Gram-negative organisms were responsible for omphalitis in 51.7% cases.

Case Report: A 63-day-old baby girl presented to district hospital with a bowel protruding out from umbilical region. She was born full term, spontaneous vaginal delivery with birth weight of 3.2 kg. Antenatal was uneventful. One week prior to the admission, she had abdomen distension and fever. There was discharged from the umbilical stump. Immediate fluid resuscitation done and urgent blood investigation revealed significant dehydration with blood urea 15.5 and prolong INR.

After fluid resuscitation and correction of coagulation profile, she underwent wound exploration and 50cc intra-abdominal pus was found originating from the umbilical wound, about 10 cent coin in diameter with significant inter-loop abscess. Post-operative was uneventful, she improved well and the fever subsided.

Although modern perinatal practice has dramatically reduced the incidence of omphalitis, infections of the umbilicus still occur. Rigorous asepsis and the routine application of antimicrobial agents to the umbilical such as alcohol and hexachlophene may save newborn from severe umbilical sepsis.

OVERGROWTH OF THE MICROORGANISMS IN THE HOSE PIPES OF THE TOILET

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Introduction: In our culture hosepipes are placed in the toilets for after toilet cleaning. But most of the users are found to be quiet ignorant about the importance of hygienic maintenance of the hosepipes. In most of the toilets, the pipes are seldom placed in proper position and are seen to be thrown into the floor and even sometimes they are in contact with the toilet bowls.

Objective: To compare the growth of bacteria in the hosepipes that are unhygienically kept as compared to the hose pipes which are placed properly in the fixed place after being used.

Methodology: Total of ten swabs, five from properly placed and five from unhygienically placed hosepipes were taken and cultured to observe any growth of microorganisms. Gram staining and biochemical tests were done to identify them.

Result: Properly placed hosepipes did not have any growth of bacteria as compared to the unhygienically placed hosepipes. In the unhygienically placed hosepipes, only one sample (20%) had very few growth of any organisms. *Pseudomonas* and fungus were present in four (80%) samples; *Enterobacter spp* was present in 3 samples (60%). *Staphylococcus aureus* were present in 2 samples (40%), *Escherichia coli* was present in one sample (20%).

Conclusion: This study had identified the microorganisms that grew and accumulated in the unhygienically placed hosepipes. Although the health hazards of using this contaminated hosepipes in a regular basis is not clear but our finding will help us to increase the awareness of the users towards hygienic maintenance of the hosepipes in the toilets.

OCCURRENCE OF LIPID OXIDATION IN REPEATEDLY USED COOKING OIL IN KELANTAN

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Introduction: Lipid oxidation is the oxidative deterioration of lipids containing any number of carbon-carbon double bonds. It is a chain reaction providing a continuous supply of free radicals that initiate further oxidation. Unspecific oxidation of polyunsaturated fatty acids due to the high temperature during frying and frequent reused of oil can lead to lipid oxidation, resulting in the generation of fatty acids radicals that can react with other lipids, proteins, or free radicals in tissues and may result in biochemical changes in the liver and oxidative damage to the nucleic acid.

Objectives: To standardize a simple and cheap method and for estimating oxidation of lipids in the repeatedly used cooking oil samples.

Methodology: Four fried bananas stalls were randomly chosen and reused oil samples were collected on a daily basis for quantitative tests. The estimation of thiobarbituric acid reactive substance (TBARS) as biomarker of lipid oxidation was performed according to the reaction method of Fatum and Haider (2002).

Results: Our study has shown that the malondialdehyde concentration in repeatedly used oil at all four stalls was increased by 100% to 200% during the period (30 days) of our study. The factors which caused an increased in malondialdehyde concentration were due to the length of time period the oil was used and an infrequent replacement of the reused oil with a fresh one.

Conclusion: It can be concluded that consumption of the repeatedly used oil can bring ill-health effects to the human population.

EFFECT OF ZEA MAYS HAIRS EXTRACT ON BIOCHEMICAL PARAMETERS

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Objective: The aqueous extract of *Zea mays* hairs was screened for the effects on biochemical parameters viz, blood glucose, lipid profiles and liver function tests.

Methodology: Forty-two male albino rats of Wistar strain weighing about 180 to 200gm were divided into seven groups with six rats in each group. One was control group, three groups were treated with the extract at the dose of 50mg/kg body weight and another three groups were treated with 100mg/kg for seven days, fourteen days and twenty-eight days respectively.

Results: The rats that received treatment with 50 mg/kg extracts did not show any blood glucose changes in all the three groups. Total cholesterol, triglycerides, HDL and VLDL decreased significantly after 28 days treatment with 50mg/kg extract. Albumin decreased significantly after 14 days treatment with 50mg/kg extract. The liver enzyme did not show any significant change.

The rats that received 100 mg/kg extracts showed a significantly decreased in blood glucose level after 28 days of treatment. Triglycerides and VLDL decreased significantly after 7 days of treatment. Albumin also decreased significantly and prominently more compared to that of 50mg/kg treatment. Albumin/globulin ratio was also decreased after 14 days of treatment. There was no significant change noted in the liver enzyme levels.

Conclusion: The study reveals that the extract is effective in reducing blood sugar level and lipid level. It is also safe as far as liver is concerned because the liver function tests did not show any changes in liver enzyme levels.

COMPARISON OF TWO ESTABLISHED TECHNIQUES FOR MITOCHONDRIAL DNA EXTRACTION FROM TOOTH DENTINE

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Intoduction: Previous studies showed that a tooth is a good source of nuclear and mitochondrial DNA. In the case of extraction of DNA from dentine of teeth, a few techniques are available (Hernandez et al, 2003; Pfeifer et al. 1998; Budowle et al., 2000, Rohland et al., 2004).

Objective: To evaluate the feasibility of our laboratory set-up to accomplish mitochondrial DNA (mtDNA) isolation and analysis from teeth by comparing two existing methods; Pfeifer et al. 1998 & Budowle et al., 2000. Both methods had been widely applied in population and forensic study respectively.

Methodology: Tooth was kept at -20°C until used. It was then cleaned mechanically, washed (10% commercial bleach, 95% alcohol and sterile distilled water). The pulp was extracted out. The root was cut using burr and crushed into powder. The isolated dentine was then subjected to mtDNA extraction using methodology based on protocol by Pfeifer et al. (1998) and Budowle et al. (2000). Mitochondrial DNA was extracted and measured using spectrophotometer, and then continued with polymerase chain reaction (PCR) analysis.

Results: Based on the spectrophotometry reading, a good amount of mtDNA had effectively been extracted using both techniques. The DNA also had successfully been amplified.

Conclusions: Both techniques proved to be effective. Further test on the quality of the extracted mtDNA will be carried out in order to confirm the viability of the mtDNA as a source of genetic material.

PAEDIATRIC NON-UNION OF TYPE 2 DENS FRACTURES: MANAGEMENT OF TWO RARE CASES

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Introduction: We reported two rare of traumatic type 2 Dens non-union fractures in young children, which was managed successfully with transoral decompression and posterior cervical fusion.

Case report: Case 1: A 6 year-old boy was involved in a road traffic accident 2 years ago. He was diagnosed to have a type 2 Dens fracture with mild displacement. There was non-union after Halo Vest management and parents refused surgery. Later, he developed sudden onset of paraplegia and apnea after a trivial fall at home. He was subsequently managed with traction and Halo Vest with urgent decompression of his odontoid process. A C₂-C₃ cerclage titanium wire was placed posterior with an isograft. Case 2: A 7 year-old girl presented a type 2 dens fracture following history of trauma, which did not heal after 8 months. A transoral procedure was done electively with posterior fusion with a Gallie procedure using titanium wires and isograft.

Both patient recovered well and are on physiotherapy at this moment. These rare non-union cases of dens fractures must be managed promptly before sudden death or tetraplegia happens causing mortality or morbidity.

A RARE CASE OF MULTIPLE INTRACEREBRAL HAEMORRHAGHE IN A FEMALE WITH ABNORMAL PLATELET AGGREGATION TEST AND A RIGHT MIDDLE CEREBRAL ARTERY ANEURYSM

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Introduction: A patient with abnormal platelet aggregation test was admitted with multiple intracerebral haemorrhages and ruptured right middle cerebral artery aneurysm. The use of heparin in patients with history of platelet dysfunction must be done with caution following angiographic procedure. Patients may develop haemorrhagic infarct after embolisation instead of pure ischaemic infarct if complications set in. This must be managed with aggressive platelet transfusion preembolisation and postembolisation especially when complications such as haemorrhage may or have occurred.

Case report: A 65 year-old Malay lady presented with multiple intracerebral hemorrhages and abnormal platelet aggregation test. We successfully embolised her right middle cerebral artery aneurysm. Unfortunately, she developed haemorrhagic infarction on the site of the middle cerebral aneurysm. Further investigations revealed defect in the dynamic homeostasis pathway. Eventually she developed a lacunar infarct after the first diagnostic angiogram on the left side, which was managed with antiplatelet therapy. She developed severe ecchymoses and hematuria following the therapy, which was later discontinued.

AN ACUTE TYPE 2 DENS FRACTURE: ODONTOID SCREW FIXATION - TO REMOVE OR NOT TO REMOVE AFTER FUSION?

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Introduction : An acute type 2 dens fracture is best treated with odontoid screw fixation. There were several pre-requisites: horizontal better than oblique fracture, no extensive bone comminution, ability to restore C1-2 alignment, ability to achieve the appropriate trajectory and of course availability of an appropriate instruments. This case highlighted the importance of the later. The dens screw length available must match the proposed measuring length of screw placement site on imaging.

Case report : A 15 year-old boy sustained mild head injury following motor vehicle accident. He complained of suboccipital and neck pain. The initial CT scan of brain, atlas and axis did reveal the abnormalities. He had an acute type 2 dens fracture without displacement. The fracture was nearly horizontal and had a good C1-2 alignment. He underwent single odontoid screw fixation using Leibinger dens system. This system supplied the shortest cannulated lag screw of 37 mm, the pre operative 3-D CT measurement from base of axis to tip of the dens was 32 mm. Despite this discrepancy, we decided to proceed with surgery. The surgery itself was uneventful. We decided to remove that screw after solid fusion was confirmed later. The availability of an appropriate length of dens screw is important to ensure its safety.

NEUROCHEMICAL MONITORING USING INTRACEREBRAL MICRODIALYSIS IN PATIENTS WITH SPONTANEOUS SUPRATENTORIAL INTRACEREBRAL HEMORRHAGE (ICH)

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Introduction: Spontaneous supratentorial intracerebral hemorrhages (ICH) account for about 10-30% of all strokes but have the highest mortality of all stroke sub-types. Some 62% of patients die and up to half of survivors are left severely disabled. This unfavourable outcome has been attributed to the neuronal damage inflicted by the hematoma on the surrounding brain tissue. Animal models of intracerebral hemorrhage have shown that blood is irritating to the brain parenchyma, and there is an area of oedema, ischemia and hemorrhagic necrosis at the margin of the clot namely "ischemic penumbra".

Objective: To study the disturbance in brain energy metabolism in the area of perihemorrhagic penumbra using intracerebral microdialysis in patients with intracerebral hemorrhage.

Methodology: An observational, case series were conducted involving 10 patients who were admitted to Neurosciences Intensive Care Unit following a diagnosis of spontaneous ICH based on the Computed Tomography (CT) of the brain. All patients underwent surgical evacuation of the hematoma and a 10-mm-membrane microdialysis catheter was inserted in the parenchyma adjacent to the evacuated hematoma. The microdialysis perfusates were collected in microvials and analysed immediately for concentration of glucose, lactate and pyruvate for the duration of 3-5 days before the catheter was removed. The position of catheter tip in the penumbra area is confirmed with a post-operative computed tomography (CT) of the brain.

Results: Of the 10 patients analysed, 5 patients exhibited an increased in lactate/pyruvate ratio in association with a period of raised intracranial pressure during the monitoring period which could suggest an evidence of ischemia. The lactate/pyruvate ratio in the remaining subjects was unchanged or constant.

Conclusion: Intracerebral microdialysis has the potential to provide a valuable method in the detection of tissue ischemia in spontaneous ICH.

PRE-OPERATIVE EVALUATION FOR REFRACTORY EPILEPSY: UNIVERSITY SAINS MALAYSIA PROGRAMME

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Introduction: Over half of refractory epilepsy patients have a single foci that act as trigger point that cause seizure. To ensure successful epilepsy surgery programme, an accurate localization of this foci is crucial. These non-invasive investigations include proper history taking, EEG, VEEG (video EEG), visual field assessment, neuropsychological assessment and brain MRI.

Case report: A total of seven patients have completed this series of investigations. Four with good clinico-electrico-radiological concordance from the above mention assessments had successfully undergone surgery, two awaits vagal nerve stimulation and one currently waiting for surgery.

Our first patient was operated on July 2004. He had left mesial temporal sclerosis (MTS) with dysembryoplastic neuroepithelial tumour on the ipsilateral temporal lobe. Both lesions were removed at one sitting. Our second patient had right MTS and underwent right anterior temporal lobectomy with amygdalo-hippocampectomy. Her seizure frequency have drop from once weekly to once monthly with no secondary generalization. Our third patient had right frontal cavernous malformation with ipsilateral MTS. Both lesions were removed with the help of image guided surgery. His seizure frequency dropped from twice weekly to twice monthly complex partial seizure without generalization. The fourth patient was similar to the second but he had left MTS.

The two patients that were not operated on have bilateral lesion. This is seen on MRI, VEEG, EEG and neuropsychological assessment.

OSSIFICATION OF THE POSTERIOR LONGITUDINAL LIGAMENT: REPORT OF A RARE CASE AND ITS MANAGEMENT

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Case report: A 37 year old female patient developed progressive tetraparesis after a road traffic accident 1 year ago, which worsened after a lower section caesarian section few weeks prior to acute aggravation of her symptoms early this year.

A Magnetic Resonance Imaging, CT-Scan of her cervical spine as well as isotope static bone scan revealed evidence of a calcified posterior longitudinal ligament which was 2.5 mm thick with compression on her spinal cord at the level of C₃-C₄. There was also compression involving the left side of the posterior part of T2 due to a thickened ligamentum flavum. Intraoperatively the lamina was drilled with intraoperative Somato Sensory Evoked Potential (SSEP) monitoring which revealed a sudden drop with recovery of her SSEP values during microdissection at the lamina of C₂-C₃ levels. She was operated in a Halo Vest to prevent her spine from hyperflexing or hyperextending. The vest was removed after 3 days and she was given an Aspen Collar. Unfortunately, she developed a fatal upper gastrointestinal bleed with coagulopathy and passed on at day 4 postoperatively.

STEREOTACTIC RADIOTHERAPY FOR A LEFT SIDED BRAIN STEM ARTERIOVENOUS MALFORMATION (AVM)

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Introduction: Reports of brain stem AVM managed with single dose Gamma Knife, Boron Capture or X Knife Radiosurgery are mentioned in the English literature. Due to the high incidence of Radionecrosis this patient was managed with the Gill Thomas Cosman frame and fractionated dose was given.

Case report: We reported a case of brain stem arteriovenous malformation (AVM) that was detected incidentally in a 29-year old Chinese man. He was managed for the first time with fractionated radiosurgery instead of single dose radiosurgery. The follow up of this patient is too early for conclusions regarding mortality or morbidity to be made. A full outcome should be observed for at least another 5 years.

THE USE OF SSEP AND EEG IN THE MANAGEMENT OF INTERVENTIONAL RADIOLOGY OF MOTOR CORTEX ARTERIOVENOUS MALFORMATION (AVM), GIANT ANEURYSMS AND SPINAL CORD AVM

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Introduction: Somatosensory Evoked Potential (SSEP) monitoring as well as Electroencephalography (EEG) monitoring are rarely used in the neurophysiological monitoring of interventional cerebrovascular procedures especially in the developing world.

Case reports: : We describe various neurophysiological procedures in five different patients; 2 males with a motor cortex AVM, one female with a giant aneurysm of the left cavernous sinus section of the carotid artery, one person with a middle cerebral artery aneurysm and a spinal cord AVM.

Somato Sensory Evoked Potential and Electroencephalography has been done to guide both the interventionalist and the neurosurgeon in deciding which part of the nidus to embolise or how to do a compression test of the anterior or posterior circulation or how intraarterial rtpa can be given to open a thrombosed artery without compromising the motor and sensory tracts of these five patients..

The uses for these neurophysiological monitoring devices are important to help both neurosurgeons and neurointerventionalist achieve maximal therapy and thus reduce mortality and morbidity in these five cases.

MANAGEMENT OF DURAL ARTERIOVENOUS FISTULA (DAVF) WITH THROMBOSIS OF THE TRANSVERSE / SIGMOID SINUS

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Introduction: DAVF can cause confusion in diagnosis especially with thrombosis of one of the major draining veins and be a therapeutic nightmare due to collateral reperfusion after surgery or embolisation. We illustrate two cases of DAVF which were successfully managed without complication purely by interventional radiology (glue embolisation).

Case report: We report on two male patients, 15 and 17 years old referred from Hospital Ipoh. The former with signs of cerebellar stroke and the later for suspected arteriovenous malformation. The first patient developed obstructive hydrocephalus and the second developed dysphasia. Despite both pathologies the MRI of the brain revealed neither haemorrhage nor infarct. Both DAVF occurred without any known etiology and both came with evidence of neurological deficits mainly cerebellar signs. Both patients received glue embolisation done by the same operator without any operative intervention. This has not been previously reported in the literatures. Post embolisation both patients recovered. They were functionally well with no evidence of recurrence by angiogram at 3 months follow up.

EMBOLIZATION OF ARTERIOVENOUS MALFORMATION WITH ONYX. OUR FIRST EXPERIENCE IN HUSM

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Introduction: Endovascular embolization is one of the modalities that can be used to treat arteriovenous malformation (AVM). The endovascular embolization involves the use of catheters to deliver occlusive agents such as sclerosing drugs, thrombosing coils, balloons and glues. However, the most commonly used embolic agents for AVMs are the liquid acrylic-based glues (n-Butyl cyanoacrylate). The disadvantages with glues include difficulty in delivery and adhesion to all surfaces including catheters. Onyx which is a mixture of ethylene vinyl alcohol co-polymer (EVOH) is another embolic agent which has occlusive effect like acrylic-based glues. Upon contact with blood, the solvent rapidly diffuses away leading to precipitation of a soft radiopaque polymeric embolus. Onyx is available in a range of liquid viscosities intended to have delivery and precipitation characteristics optimized for the type of lesion being treated.

Case Report: We use this material in our first patient who is a young 10 year old Chinese boy diagnosed with left temporal AVM with intranidus aneurysm with no major complications. We concluded that Onyx is easier to administer and less problematic in terms of adhesion to surfaces compared to other available materials.

THE COURSE OF CHRONIC SUBDURAL HEMATOMAS AFTER BURR HOLE CRANIOSTOMY AND DRAINAGE WITH OR WITHOUT IRRIGATION BASED ON INTERNAL ARCHITECTURE ON CT SCAN

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Objectives: To determine the recurrence rate of chronic subdural hematomas after burr hole drainage with or without irrigations between the different types of chronic subdural hematomas based on their internal architecture and intracranial extension on CT scan.

Methodology: Eighty two patients with chronic subdural hematomas were treated in Hospital Sultanah Aminah between February 2002 to September 2004. The chronic subdural hematomas were classified based on their internal architecture and intracranial extension. They are either subjected to burr hole craniostomy (single or 2 burr holes) and drainage with or without irrigation. Factors such as age, sex, predisposing factors, signs & symptoms, presence or absence of post-operative intracapsular air, recurrence, morbidity & mortality were analyzed. Outcome of the treatment within the two groups were analyzed based on the Glasgow Coma Scale and Markwalder grading scale pre- and post-operatively.

Conclusion: Burr hole craniostomy and drainage with or without irrigation provide an excellent outcome in the treatment of chronic subdural hematomas.

THE EVALUATION OF THE PREDICTORS OF DELAYED TRAUMATIC INTRACRANIAL HAEMORRHAGE (DTICH) AND PROGRESSIVE TRAUMATIC BRAIN INJURY (PTBI) IN TRAUMATIC HEAD INJURED PATIENTS FROM HOSPITAL KUALA LUMPUR

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Objectives: To determine the important predictors for early detection of delayed traumatic intracranial hemorrhage and progressive traumatic brain injury (DTICH/PTBI) before Glasgow Coma Scale (GCS) drops and the ideal timing of repeating CT brain.

Methodology: 81 patients were included in this univariate retrospective study by comparing the first and second CT brain to diagnose the presence of DTICH/PTBI. The predictors tested are broadly categorized into patient factors, CT brain findings and laboratory investigations.

Results: Mean age was 33.1 ± 15.7 years, male preponderance of 6.36:1. 81.5% of them suffered from MVA, GCS range from 4 – 15 (median of 12) upon admission and; mean time interval between trauma. The first CT brain was performed at mean of 179.8 ± 121.3 minutes in cases of PTBI. In DTICH, 9.9% of the patients were found to have new clots. Significant predictors detected include different referral hospitals ($p=0.02$), GCS status ($p=0.026$), GCS status~motor component ($p=0.05$), haemoglobin level ($p=0.001$), Platelet count ($p=0.023$) and time interval between trauma and first CT brain ($p=0.002$). In PTBI, 42.0% of the patients were found to have new changes (new clot occurrence, old clot expansion and edema) in the repeat CT brain. Univariate statistical analysis had pointed out age ($p=0.03$), race ($p=0.035$), types of admission ($p=0.024$), GCS status ($p=0.02$), pupillary changes ($p=0.014$), no. of intracranial lesion ($p=0.004$), haemoglobin level ($p=0.038$), prothrombin time ($p=0.011$) and time interval between trauma and 1st CT brain ($p=0.047$) as the best predictors.

Conclusion: Any patients who had traumatic head injury are advised to have repeat CT brain at within 12 hours of trauma regardless of the duration between trauma and initial scanning especially in neurosurgical centers with 24 hour CTscan services.

COBB SYNDROME TREATED BY STAGED INTRAVASCULAR EMBOLISATION AND SURGERY: A CASE PRESENTATION

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Introduction: Cobb syndrome better known as cutaneomeningospinal angiomatosis is defined by the presence of a cutaneous vascular lesion in one or more dermatome which corresponds to the segments of spinal cord vascular malformation.

Case report : A 28-year old Malay man with evidence of upper motor neuron cord lesion was diagnosed to have a C7 to T2 spinal arterio-venous malformation and associated, cutaneous vascular lesion. He agreed for treatment after a period of 5 years after his progressive spastic right lower limb became worse and he was unable to mobilize himself due to a paresis of his right lower limb of grade 1/5. A two staged intravascular procedure was done followed by surgery with recovery of ASIA impairment scale grade B.

SCREENING OF CYCLIN DEPENDENT KINASE INHIBITOR, P27 AND CYCLIN D1 GENES IN ASSOCIATION WITH GLIOMAS AND MENINGIOMAS IN MALAYSIA

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Introduction: Protein overexpression of Cyclin D1 (CCND1) and gene alterations of p27 gene are frequently reported in a broad range of human tumor types. Cyclin D1 acts in cell cycle by binding to the CDKs to form complexes which in turn induce the progression from G1 to S phase. Activities of these complexes are negatively regulated by p27 gene which is the family of Cyclin dependent kinase inhibitor (CDKI).

Objective: To investigate the sequence variations in exon 4 of Cyclin D1 gene and exon 1 and 2 of p27 gene in gliomas and meningiomas patients.

Methodology: The alteration within the region of interest was detected by using denaturing HPLC technique. The PCR products were prepared prior to dHPLC analysis by performing slow re-annealing method to allow the formation of heteroduplex peaks. Samples which show heteroduplex profiles were sent for DNA sequencing to confirm the allelic involved.

Results: Based on the dHPLC profiles, 1 (9.01%) gliomas and 2 (13.3%) meningiomas showed heteroduplex peaks in exon 4 of Cyclin D1 gene. The DNA sequencing results revealed that only one base deletion (base G) was discovered in glioma patient at nucleotide 82 of codon 28, while none mutation was found in meningioma samples.

Conclusion: The G base deletion of Cyclin D1 gene will lead to formation of abnormal protein which in turn, may cause cells to proliferate uncontrollably. However, the results show that mutation of cyclin D1 gene is infrequent in brain tumors but it might play important roles in brain tumorigenesis.

THE ALTERATIONS IN THE PROMOTER REGION OF MATRIX METALLOPROTEINASE- 3 (MMP3) IN MENINGIOMAS

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Introduction: Members of Matrix metalloproteinase family are involved in the physiological remodeling of tissues and embryonic development as well as pathological destruction of extracellular matrix components. Matrix Metalloproteinase 3 (MMP-3) gene has 5A/6A polymorphism in the promoter region. Its location at the promoter of the gene indicated its possible role in regulation of MMP-3 gene transcription.

Objectives: To identify alteration of MMP3 gene in cases of meningiomas.

Methodology: Tumor tissues were obtained from 7 patients who had undergone brain tumor resection at Hospital Universiti Sains Malaysia. Samples were extracted for the genomic DNA. Polymerase Chain Reaction (PCR)-direct sequencing was performed to detect the alteration in the promoter region of MMP3.

Results: All samples were successfully analyzed by using direct sequencing with 6 samples showed 5A allele and 1 sample showed 6A allele in the promoter region.

Conclusion: These preliminary results showed presence of MMP3 gene 5A/6A polymorphism in meningiomas. This study implies that it is possible that the alteration of the promoter MMP-3 gene may be associated with development of brain cancer but a controlled study is needed to clarify this point.

ACHEH EXPERIENCE AS A TRAINING GROUND IN DISASTER MANAGEMENT FOR MMED (EMERGENCY MEDICINE) CANDIDATES

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Introduction: Disaster management or mass casualty management system is very important subject in Emergency Medicine. It is a vital issue for future generation of Emergency Physician. There are positive developments in this area since September 11 incident at New York on year 2001. In fact, one of the missions of Ministry of Health for 9th Malaysia Plan is to standardize and upgrades the hospital disaster plan. Disaster management is complex and requires multidiscipline approach. By sending Emergency Medicine candidates to disaster area, will expose them to the true scenario picture of disaster and definitely will make them a better physician in the future.

Case report: Large magnitude of tsunami strikes Aceh on 26th December 2004 and caused 200, 000 deaths. 4 doctors from Emergency Department were sent to Aceh within 3 days under the umbrella of MERCY for 2 weeks. They were exposed and learned how to manage the hospital during the response phase. Another 2 doctors were sent to Aceh a week later under SALAM. Their exposures to the disaster management at the field during the response phase were tremendous and dangerous. Another group was sent 2 week later whereby they learned more about disaster management during the recovery phase and early reconstruction phase.

The best teacher to teach Disaster Medicine is own experiences. You never understand of it till you experience it by yourselves.

AUGMENTATION OF POST-EXTRACTION SOCKETS WITH THE AID OF LOCALLY PRODUCED HYDROXYAPATITE: PRELIMINARY CLINICAL AND RADIOGRAPHIC RESULTS

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Introduction: Bone resorption after dental extraction is one of the problems in prosthodontic and implantology. Many techniques for augmentation of the alveolar ridge have been reported. Although autogenous bone grafting is considered to be the best procedure, this technique needs a harvesting operation with notable risk. Since the 1980s hydroxyapatite (HA) has been used as bone substitute materials because of their nonantigenicity and biocompatibility.

Objective: To determine the effects of HA in preservation of alveolar bone height.

Methodology: This study comprised of 40 patients that had dental extractions, divided into two groups of 20. Group 1 had augmentation with HA post-extraction while group 2 served as a base line. Following local anesthesia and atraumatic tooth removal, HA was grafted into the dento-alveolar sockets. Graft containment and soft tissue closure was obtained. Sutures were removed 2 weeks after the surgery. Patients were subsequently examined at 1 and 3 months after surgery. OPGs were taken to measure the bone height before and after augmentation with the aid of a computerized soft ware orthoralix 9200.

Results: The mean height for sockets grafted with HA was +0.67 mm mesial and +0.58 mm distal while in the control group there was resorption of the alveolar bone which we referred to as (negative), -2.18 mm mesial and -2.34 mm distal.

Conclusion: Human application of this bone graft material suggested its continuous use as a bone substitute. This study demonstrated that locally produced HA is not only biocompatible but also prevented alveolar bone resorption.

STUDY ON GENOTOXICITY OF POLYHYDROXYBUTY ON POLYHYDROXYBUTYRATE – A SYNTHETIC BIOMATERIAL USING SALMONELLA/MICROSOME TEST

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Introduction: Polyhydroxybutyrate (PHB) is a thermoplastic belonging to the family of polyhydroxyalkanoates (PHA). It is generally derived through fermentation of glucose and sucrose of fatty acids by microorganisms. PHB is crystalline polyester of great technological interest, because it is a truly biodegradable and a highly biocompatible polymer. It is used as a biodegradable ecologically friendly alternative to conventional plastics. M.Lemoigne discovered PHB in the bacterium *Bacillus megaterium* in 1926. In recent years, several papers appeared on PHB synthesis in transgenic plants.

Objective: To determine the mutagenicity of PHB.

Methodology: PHB is incubated with special genotype variants of the bacterium *Salmonella typhimurium* (Ames test). The number of revertant colonies assesses this test. Five tester strains (TA1535, TA1537, TA1538, TA98 and TA 100) are used with and without metabolic activation.

Results: The average numbers of revertant colonies per plate treated with PHB was less than double as compared to that of negative control.

Conclusion: The reduction in the number of revertant colonies by at least double with the test material, PHB indicates that PHB is non-mutagenic under the present test conditions and that the synthetic biomaterial PHB is biocompatible.

EVALUATION OF DENTAL TREATMENT NEEDS IN SCHOOL CHILDREN OF SKKK3 BY DENTAL STUDENTS

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Introduction: Dental caries is an important community dental health problem. Its high morbidity potential among children has brought this disease into the focus of dental health professionals.

Objective: To determine the caries prevalence and treatment needs for dental caries in 7-10 year old school children attending Student's Clinic, School of Dental Sciences.

Methodology: Retrospective record review on folders of school going children aged between 7 to 10 years from Sekolah Kebangsaan Kubang Kerian 3 was conducted. Total 319 folders were reviewed. Out of that, 175 (54.9%) were boys and 144 (45.1%) were girls. The dental charting and dental treatment needs were recorded. DMFX (D = decayed, M = missing, F = filled, X = indicated for extraction) and dft (d = decayed, f = filled, t = teeth) indices were used in recording dental caries status of permanent teeth and primary teeth respectively.

Results: The prevalence of dental caries in primary teeth was 93% and in permanent teeth was 38.1%. Mean dft was 6.2(SD 3.39) and DMFX for the permanent teeth ranged from 0 to 8. Only 6% of children were caries free in primary teeth. Regarding treatment needs in both primary and permanent teeth, 35.4% needed one surface filling, 34.7% needed extraction, 24.5% needed two or more surfaces filling, and 5.6% needed pulp care and restoration.

Conclusion: The caries prevalence amongst the study sample was high and most of the carious teeth were untreated. The most needed treatment for these children was restoration.

MEDIAL MAXILLECTOMY IN LATERAL NASAL WALL INVERTED PAPILOMA WITH ORBITAL EXTENSION

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Introduction: Lateral rhinotomy and medial maxillectomy have evolved in the last 25 years as the treatment of choice for most neoplastic lesions involving the lateral nasal wall. Technical refinements have allowed this procedure to be performed with acceptable and minimal morbidity.

We reported a case of inverted papilloma with orbital extension removed via medial maxillectomy and en bloc resection of the ethmoid labyrinth.

Case Report: A 40 year-old Malay gentleman presented to us with progressive unilateral right nasal block for 2 years, which was associated with self-limiting intermittent epistaxis. He denied any history of rhinorhea, postnasal drip or disturbances of smell. A month prior to his first consultation visit, he developed a right paranasal budge. He has no prior medical illness. He has no exposure to wood or metal dust.

Clinically there was a lobulated mass occupying the right nostril, which and bled when touched by the tip of the rigid endoscope. On endoscopic examination, the nasopharynx was normal.

CT scan of the paranasal sinuses demonstrated a soft tissue mass in the right maxilla destroying the medial wall of the right maxilla and has extended to the right ethmoid sinuses. The floor of the orbit has also been breached but no involvement of the eyeball was seen. A biopsy by a senior pathologist confirmed an inverted papilloma. The lesion was successfully removed via medial maxillectomy approach. This approach has had its widest application in the treatment of inverted papilloma, with a concomitant marked reduction in the recurrence rate of this tumor compared with more limited procedures. The tumor is locally aggressive, has a high rate of recurrence and associated with malignancy.

CLINICAL AND RADIOLOGICAL STUDY OF IMMEDIATE PLACEMENT OF DENTAL IMPLANTS WITH CORAL BONE GRAFT

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Introduction: Placement of an implant immediately following loss or extraction of a tooth is associated with obvious advantages with regards to preservation of the alveolar ridge. The number of complex surgical procedures is reduced and the time during which patient is partially edentulous is shortened, because healing of the alveolus and healing-in of the implant occur simultaneously.

Objective: To study the efficacy of dental implant coated with coral bone graft immediately placed into dental post extraction socket of human.

Methodology: This study comprised of 14 patients who had elective extraction of mandibular or maxillary teeth and divided into 2 groups. The dental implant (Fralits-2) was used. For patients in-group 1, immediate implants with coral bone grafting was placed, while group 2 implant without coral were applied. Orthopantograph (OPG) was made to assess postoperative results. The patients were monitored clinically and radiographically in the periods of 1, 2, 3 weeks and 3 months post-operative.

Results: Out of a total 7 patients in Group 1, six patients showed good results (87.5%) and one patient failed (12.5%). In Group 2, three patients were grafted and all showed good results (100%), revealed no meaningful difference in healing between the implant and bone. Based on OPG analysis, all implants showed osseointegration at 3 months postoperative.

Conclusion: Immediate implant with or with out coral bone graft showed good results and can be used as an alternative treatment for implant stabilization.

EXTENDED COLLAR INCISION – AN ENLARGED APPROACH FOR THYROID CARCINOMA WITH BIG NECK SECONDARIES

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Introduction: Many methods of incision have been described in the treatment planning for differentiated thyroid cancer with clinically positive neck nodes. It is very important for surgeons to choose the right incision as this will aid in the exposure during the operation and managing the wound postoperatively.

In HUSM we frequently encountered patients who have neck secondaries related to thyroid carcinoma.

Case report: We describe our experience in choosing an extended collar incision technique in a 75 years old lady who was diagnosed to have papillary thyroid carcinoma with a big left sided cervical nodes secondaries.

A standard collar incision was carried out 2 finger-breath above the sternum from sternocleidomastoid to sternocleidomastoid muscles. This incision was extended laterally on the left side to the posterior border of the sternocleidomastoid and superiorly to the mastoid process. An incision was made vertical to this incision and downwards to the upper border of the clavicle.

A radical neck dissection was undertaken, removing all the lymph nodes levels 1 through V together with the sternocleidomastoid muscle, internal jugular vein and accessory nerve. The operation was completed with a total thyroidectomy. The parathyroids were removed together with the thyroid gland. Both of the recurrent laryngeal nerve was preserved. The wound was closed in 2 layers with redivac drain.

This incision provided a good exposure to both the thyroid gland as well as for the lateral neck structures. Despite the big mass access to the other lymph nodes and internal jugular vein was easy. Wound healing is the same as for the other incision.

We find that this incision is a good approach for removing the thyroid gland as well as for neck dissection for big sized neck secondaries.

DENTAL CAST PHOTOCOPIER TECHNIQUE

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Introduction: Dental parameters such as arch width, dental spaces, tooth size and etc can be measured directly from the dental cast with ruler, digital caliper and other instruments. These parameters can also be measured indirectly using the photocopied image of the cast as proxy.

Objective: To evaluate the accuracy of the cast photocopier technique.

Methodology: Five cast models (upper and lower arch) and their corresponding photocopied images were studied. Measurements were made at four selected distance; canine-canine, 1st premolar-1st premolar, 2nd premolar-2nd premolar and 1st molar-1st molar for both casts (direct measurement) and their images (indirect measurement). An average of three readings from each studied distance were then compared between the direct and the indirect measurements.

Results: There were no differences between the two measurement technique at all selected points.

Conclusion: The results of this study indicate that photocopied images of dental casts reliably represent the actual dental cast and allow its use as a surrogate proxy for making various dental measurements.

VALIDATION OF THE MALAY VERSION OF THE DEPRESSION, ANXIETY AND STRESS SCALE QUESTIONNAIRE (DASS) 21 ITEMS IN AN AUTOMOBILE INDUSTRY

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Introduction: The Depression, Anxiety and Stress Scale (DASS) are a well known and widely used self-rating scale for the measurement of the negative emotional states of depression, anxiety and stress which is increasingly used in diverse setting.

Objective: To assess the reliability and construct validity of the Malay Version of Depression, Anxiety and Stress Scale with 21 items as a screening tool for depression, anxiety and stress in the automobile setting.

Methodology: Complete data of DASS 21 item were collected from 50 workers of an automobile industry in Kota Bharu, Kelantan. All workers provided written informed consent before participating in the study. Firstly, the questionnaire was translated into Malay and then back translates. Statistical analysis included internal consistency reliability and construct validity by exploratory factor analysis using principal components and Varimax rotation method using Statistical Package for Social Sciences (SPSS).

Result: Internal consistency of the DASS 21 items for depression, anxiety and stress scales were 0.83, 0.78 and 0.84 respectively. The corrected item-total correlation each item for depression, anxiety and stress scales were ranging from 0.47-0.72, 0.36-0.72 and 0.47-0.65 respectively. Factor analysis revealed that selected items were appropriate in their corresponding domains.

Conclusion: The study revealed that Malay version of the questionnaire was fairly good in terms of internal consistency reliability and construct validity.

FROM TOOTH FAIRY TO STEM CELL BANK

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Introduction: Stem cells are the body's "master cells" - that have the potential to develop into a wide variety of different types of cells. Putative post-natal stem cells were recently identified in the human dental pulp called dental pulp stem cells (DPSCs).

Objectives: To isolate human dental pulp stem cells (DPSCs) from freshly extracted deciduous teeth and study their morphological properties.

Methodology: Six normal human exfoliated deciduous teeth were collected from children (7-8 years of age). The pulp tissue was gently separated from the crown and root and then digested in a solution of 3mg/ml collagenase type I and 4mg/ml dispase for 1h at 37°C. Cell suspensions of dental pulp were seeded in a falcon with alpha modification of Eagle's.

Results: A clonogenic highly proliferate cell populations were isolated from dental pulp tissue. The cells within each colony appeared as round shape after 24 hours, transforming into fibroblast-like cells at 48 hours. On the third day the cells have typical fibroblast-like morphology.

Conclusion: This study demonstrated that postnatal dental pulp contains cells that are clonogenic and highly proliferative. These are stem cells defining properties. Analogous to the differentiating properties seen in muscles and nervous tissue stem cells, DPSCs may represents a population of stem cells that could repair damaged tooth structures, induce bone formation and treat neural tissue injury.

LATERAL TRACHEOSTOMY IN ANAPLASTIC THYROID CARCINOMA USING A TRACHEOFLEX TUBE

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Introduction: Anaplastic thyroid carcinoma is one of the most aggressive malignancies, with a poor prognosis. Although rare, representing only 2% of clinically recognized thyroid cancers, the overall median survival is limited to months. Most patients are elderly and seek treatment with a rapidly growing mass. Airway management involves debulking of the tumour and doing an anterior tracheostomy.

Objective: To demonstrate the method of doing lateral tracheostomy using tracheoflex tube for a patient with advanced anaplastic thyroid carcinoma presented with huge anterior neck mass and upper airway obstruction.

Methodology: Midline elective tracheostomy is the standard procedure for patients with upper airway obstruction without huge midline neck mass. However, anterior tracheostomy can be very difficult and may lead to complications. Lateral tracheostomy performed by using a tracheoflex tube can overcome the difficulty encountered and minimize the morbidity.

Result: Lateral tracheostomy using tracheoflex tube is can be used as an alternative for airway management in this group of patients.

Conclusion: Although performing tracheostomy in patients with huge neck mass continues to be a challenge we believe that lateral tracheostomy using tracheoflex tube in this type of case is helpful and can necessitate post-operative tracheostomy care.

MUTATIONAL ANALYSIS OF CODON 12 OF THE H-RAS GENE AMONGST ORAL CANCER PATIENTS TREATED IN HUSM

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Introduction: Point mutations in the ras proto-oncogene family are among the most frequent genetic alterations found in human cancer. Mutations detected primarily in codons 12, 13, or 61 of the H-, K-, and N-ras genes convert these genes into oncogenes. These mutations are uncommon in oral cancers in the Western World, occurring in less than 5% of all cases. In contrast, 55% of lip cancers and 35% of oral cancers in the Asian population have H-ras mutation, where it is associated with betel nut chewing.

Objective: To investigate the presence of mutations in codon 12 of H-ras gene using restriction fragment length polymorphism (RFLP) technique in oral cancer patients from Hospital Universiti Sains Malaysia (HUSM).

Methodology: Genomic DNA was extracted from tissue samples obtained surgically from 12 oral cancer patients operated at HUSM using commercial DNA extraction kit. H-ras codon 12 was amplified. The amplified products were electrophoresed on 2% agarose gel. Purified products were then digested using the restriction enzyme, *MspI* before analysed on 4% agarose gel.

Results: The heterozygous mutation in codon 12 of the H-ras gene was found in 16.7% of the samples analysed.

Conclusion: The results demonstrate the presence of mutation in codon 12 of the H-ras gene. Further study using larger database is required to yield more precise results. Sequencing is required to confirm types of the mutations.

COLLOCALIA FUCIPHAGA NEST – ‘CAVIAR OF THE EAST’

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Introduction: ‘Caviar of the East’, refer to the edible bird’s nest, an exquisite ‘imperial’ cuisine backdated to the Chinese dynasty period, 1500 years ago. There is a growing interest by both consumers and industry for the development of food products with ‘functional’ properties, or health benefits delivered in the form of dietary supplements. In many cases in Malaysia these are derived from natural sources like sea cucumbers extracts, botanical extracts and bird’s nest. Health professionals play important roles in monitoring the safety of these traditional preparations especially in relation to effects on specific patient groups, contra-indications, warnings and potential adverse reactions.

Objectives: The present pilot study discussed data required in determining nest topography, qualitative analysis of its ingredients in assessing the safety in consuming the *Collocalia Fuciphaga* nest. Data collected can provide advisory information on the development of risk assessment strategies consistent with due diligence under existing food regulations.

Material and methods: A pilot study was conducted utilizing light microscopy integrated with image analyzer and Variable Pressure Scanning Electron Microscope (incorporated with energy dispersive x-ray scanning) at 27 Pascal pressure and 8mm working distance and FTIR as research probes for sample analysis.

Results: Surface areas of the avian nests taken from caves were well polished and free from infective organisms. No feather-like structures were observed present. FTIR revealed presence of thiocynate (SCN).

Conclusion: This study provides an insight of the nest architectural structure and the presence of a potential antibacterial element in this edible bird’s nest.

BÊCHE-DE-MER: TAXONOMICAL NIGHTMARE

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Introduction: Sea cucumber known as *gamat* in Malay is a marine animal closely related to starfish. Sea cucumber extracts have been used as therapeutic remedies by the Malays and other races. Their morphology and sizes vary dramatically worldwide. These have dogged researchers and pose significant challenges in the process of proper taxonomical undertaking of this order of marine animal.

Objective: To characterize the external and internal tissue morphology and identify elements present, thus help in obtaining a proper taxonomy and to assist in the identification of sea cucumbers species.

Methodology: The harvested sea cucumbers were prepared for light microscopy and variable pressure scanning electron microscopy. Presences of elements were detected by Energy Dispersive X-ray Analysis (EDX) and Atomic Absorption Spectroscopy (AAS)

Results: The structures observed, especially the ossicles and morula found at the dermis of the sample is highly suggestive of *Cucumaria frondosa*, a type of sea cucumber. The connective tissue fibers are loose and dense in its arrangement. Muscle-like-elements found were not clearly striated nor are they reminiscent of skeletal muscle. The elements found upon EDX and AAS analysis were Si, Cl, Na, Sr, Fe, Mg and Zn. The presence of Zinc and Strontium in association with morula cells and abundant collagenous fibres may suggest repetitive regenerative processes taking place.

Conclusion: Clear identification and taxonomy characterisation is valuable for proper interpretation of reported pharmacotherapeutic benefit linked to these marine animals. Presence of morula cell together with silica is suggestive that these marine animals present a primitive developmental and structural features which is related to it being 'perpetually young'.

A PRELIMINARY REPORT ON THE PROFILE OF TRAUMATIC BRAIN INJURY CASES IN HOSPITAL UNIVERSITI SAINS MALAYSIA IN 2004

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Introduction: Traumatic brain injury (TBI) is one of the leading causes of death and disability. Hospital admissions in Hospital Universiti Sains Malaysia (HUSM) indicated 1,176 cases of head injuries from 1997-1999.

Objective: To determine the profile TBI patients admitted to HUSM in 2004.

Methodology: A retrospective study was conducted by involving patients admitted to the adult ward from January to June 2004. Age, sex, race, Glasgow Coma Scale (GCS) on admission, cause of injury and outcome were obtained. Severity of TBI cases were measured based on their GCS scores on admission to the hospital. Intensive Care Unit (ICU) and paediatric admissions were not included.

Results: There were 349 cases, 291 males (83.4%) and 58 females (16.6%). In terms of ethnicity, 93.8% were Malay, 3.1% Chinese, Indian 1.6% and other races 1.6%. TBI related to motor vehicle accidents (MVA) is the most common cause (83.5%), falls (7.5%), assaults (3.1%), other causes (5.1%) and unknown causes (0.8%). Mean age of admissions is 30.5 ± 19.1 years old, with 53.0% of them were between 12-22 years old. 72.1% had mild TBI, followed by moderate TBI at 17.6% and severe TBI at 10.3%. 14.4% default further follow up and majority were not given follow up appointment (50.6%). From those who adhered to follow up appointment, 6 cases developed neurological deficits and another 6 developed psychiatric disorders, 4 developed a combination of neurological, psychiatric or psychological problems and 106 had no post-trauma complications.

Conclusion: The preliminary result shown that majority of TBI cases were related to MVA and involving young Malay adults. It is suggested that the reason of high default rate among these patients to be investigated and rectified.

MERKEL CELL CARCINOMA – A CASE STUDY IN HUSM

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Introduction: Merkel cell carcinoma is a very rare and aggressive skin tumour. Slightly over 1100 cases have been reported in the literatures since first described in 1972. It arises from Merkel's cells located in the basal layer of the epidermis and expresses neuroendocrine markers.

Case report: A 40 years old Malay man, a land surveyor discovered a reddish skin lesion on the medial aspect of his right arm. It's size increased progressively and became painful. He had recurrence following resection of the lesion. Histopathological examination (HPE) of the resected material showed malignant tumour of neuroendocrine origin with its margin involved. He subsequently underwent wide resection with reconstruction. HPE showed Merkel Cell Carcinoma (MCC). CT scan staging showed metastasis to the right axillary nodes and liver. He received 6 cycles of chemotherapy: Cyclophosphamide, Doxorubicin and Vincristine. The size of the solitary liver nodule reduced only slightly and no changes were seen to the axillary nodes. He deferred axillary lymph nodes dissection. Six months later, he noted painful swelling on the left chest wall. CT scan showed metastasis to T2 vertebra and the 7th left rib associated with surrounding soft tissue swelling. He received palliative radiotherapy for pain relief. He is still alive.

The etiology of MCC is unknown. This case demonstrated the aggressiveness of MCC with local recurrences and early spread to lymph nodes.

LYMPHANGIOMA: A RARE CHILDHOOD ORBITAL TUMOUR

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Introduction: Lymphangioma, is a type of childhood vascular orbital tumour. It is rare and notoriously difficult to treat.

Case Report: A 7 years-old girl presented with left painless progressive proptosis which began as soft tissue swelling in inferior fornix noted since the age of 3. Over the period of 1 year, the swelling progressively enlarged and resulted in deterioration of vision to no perception of light, worsening proptosis, restricted eye movement in all directions and conjunctival prolapse. Magnetic resonance imaging showed a large heterogeneously enhancing mass involving the intra and extraconal space displacing the globe forward. The mass infiltrated the pre and post septal spaces and maxillary antrum. It extended through the optic foramina to the optic chiasm, cavernous sinus and middle cranial fossa. Conjunctival biopsy confirmed the diagnosis of lymphangioma; showing conjunctival stroma containing numerous dilated lymphatic channels of varying sizes surround by lymphoid follicles. The patient's parents refused any major intervention and she was treated conservatively with tarsorrhaphy.

Surgery is difficult as the lesion does not respect tissue planes and bleed easily. Transcranial removal of orbital roof may provide necessary wide exposure. Carbon dioxide and Nd:YAG lasers are useful adjuncts. Role of radiotherapy is poorly defined.

ORAL FUNGAL INFECTION: A CASE REPORT

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Introduction: Fungal infections in the oral cavity are most commonly caused by *Candida* species. Patients taking broad-spectrum antimicrobials or steroids may have acute atrophic (erythematous) candidiasis. Acute atrophic (erythematous) candidosis also may be a feature of HIV disease. However corticosteroid therapy, prolonged broad-spectrum antibiotic therapy, and intravascular catheters also predispose patients, but less common, to infection with other fungal species. We reported a case of an asthmatic patient with recurrent glossitis associated with *Trichosporon asahii*, which had reduced susceptibility to some azoles antifungal agents.

Case Report: A 36 year-old asthmatic patient presented to Oral Medicine Clinic with a chief complaint of burning sensation associated with two red areas on the dorsum of the tongue of three months duration. He was on steroid inhaler. He also has gastritis. The oral lesion appeared as two atrophic erythematous areas. Atrophic candidiasis was suspected. Microbiological investigation revealed the presence of fungal hyphae. Hematological and immunological investigations were recommended to exclude any other underlying systemic disorders. Nystatin suspension was prescribed to the patient for two weeks. His oral complaint and gastritis showed some improvement. Due to slow progression, after further discussion with his physician, Oral Fluconazole was prescribed and the steroid inhaler was change to another type. Complete resolution of the oral lesion was seen and the patient's complaint of gastritis completely subsided. Unfortunately, three months later the oral lesions recurred. *Trichosporon asahii* fungi were isolated from the lesion. Oral Voriconazole was prescribed which successfully eradicated the oral fungal infection.

PCR ASSAY FOR DETECTION OF *LEPTOSPIRA* SPP.

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Introduction: Leptospirosis is a worldwide disease caused by pathogenic spirochetes of the genus *Leptospira*. It is considered the most common zoonosis in the world, affecting wild rodents, domestic animals and humans. It has recently been identified as one of the emerging infectious diseases globally, exemplified by large outbreaks in Nicaragua, Brazil, India, Southeast Asia, and the United States. In Malaysia, there was also an outbreak during the Eco-Challenge Sabah 2000 competition. The disease is generally believed to be under-diagnosed due to shortfalls associated with the various diagnostic techniques currently in use in most laboratories, such as direct examination by dark field microscopy, culture, and serological testing for demonstration of serum antibodies.

Objective: To develop a rapid diagnostic test for leptospirosis based on PCR assay.

Methodology: Specific primer sets for a conserved region of the *Leptospira* LipL32 gene (which encodes a major outer membrane protein) were designed. A PCR assay was developed and optimized for detection of *Leptospira*.

Results: The PCR test was found to be specific, amplifying a 662-bp fragment from 9 serogroups of bacteriologically identified *Leptospira* found in Malaysia (i.e. australis, bataviae, canicola, celledoni, grippotyphosa, hebdomadis, icterohaemorrhagiae, pyrogenes, and sejroe). No specific products were obtained from 16 other genera of non-target commensal and pathogenic bacteria. The assay was also sensitive, able to detect as few as 100 bacteria. Results can be obtained in less than 3 hours.

Conclusion: The PCR assay developed can be a valuable and promising alternative to culture and serological testing for the rapid diagnosis of leptospirosis in human and animals in Malaysia.

COMPUTER-AIDED IDENTIFICATION OF ACID FAST BACILLI

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Introduction: TB is rapidly transmissible but treatable disease, and the key to its control is rapid identification of infected person, initiation of immediate treatment and monitoring of patient on treatment. Currently, in Malaysia the most common method used for TB screening is by detection of Acid Fast Bacilli (AFB) in direct smear, stained by the Ziehl-Neelsen method, followed by manual slide reading by trained technologists. Though this technique is cheap, it is time consuming and requires highly trained personnel to avoid errors. TB direct smear slides is read under 100x10 magnification and this give the technologist a great strain to the eyes. Eye straining as well as fatigue could increase the error made by technologists

Objective: To develop an automatic diagnostic tool for detection of AFB in Ziehl-Neelsen stained smear.

Methodology: Images under the light microscope were captured by the digital camera and saved in the bitmap files. The raw images underwent several stages, which included image enhancement processors, contrast stretching and segmentation. The criteria that were used to develop the diagnostic system included size, shape and the color of the bacilli appeared in the AFB direct smear. Diagnostic software was developed based on an intelligent technique to detect the presence of possible TB bacteria and perform automatic feature extraction of the TB bacteria.

Result: Based on this preliminary study, the overall accuracy of the system to detect individual TB Bacilli was 91.27%, the sensitivity of the system was 95.5% whereas the specificity of the system was 98%.

Conclusion: Automated technique will provide a rapid and accurate identification of TB bacilli.

TRANSITIONAL CELL CARCINOMA OF THE UPPER URINARY TRACT – CASE REPORT

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Introduction: Transitional cell carcinoma (TCC) can arise from any transitional epithelium which covers urinary bladder, ureter and renal pelvis. Though it is the common carcinoma in the transitional epithelium of the bladder but its incidence in upper tract is rather rare. The incidence of transitional cell carcinoma of renal pelvis comprise about 5% of all transitional cell carcinoma.

Transitional cell carcinoma involving renal pelvis are reported in two cases : a 63 years old man presented with painless haematuria (case A) and a 41 years old man presented with loin pain associated with haematuria (case B).

Case report: In the case A, the patient had undergone cystoscopy examination (CE) and biopsy from the urinary bladder taken. Trans-urethral resection of bladder tumour (TURBT) was done and subsequent surveillance CE showed that there was recurrence and repeated TURBT was done. Ultrasound, chest x-ray and bone scan didn't show any local or distance spread of the tumour. Subsequent ultrasound showed left hydronephrosis and proceeded with retrograde pyelogram (RPG) and ureterorenoscopy (URS) which confirmed the diagnosis. In case B, intra-venous uroterogram (IVU) was done which showed left renal and proximal ureteric calculi with partial obstruction and enlarged left kidney. RPG and stenting was done followed by left pyelonephrolithotomy and biopsy of left renal pelvis which showed TCC of renal pelvis.

Both patient underwent nephroureterectomy successfully. Histopathology examination of specimen confirmed TCC of the renal pelvis.

The prognosis of TCC of the renal pelvis is usually worse than TCC of the bladder as its presentation is usually at an advanced state. However, surgical intervention is still the main form of the radical treatment of localised disease.

THE OUTCOME OF STAGHORN CALCULI TREATED IN HOSPITAL UNIVERSITY SAINS MALAYSIA

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Introduction: Urinary stone is a common problem encountered in clinical practice in Kelantan. In previous study by Noori et al, he found that 90% of patients with urinary tract stone disease presented with some degree of renal impairment and 70% of them further deteriorated post treatment.

Objective: To determine any improvement of outcome for staghorn calculi patients that was managed in Hospital University Sains Malaysia (HUSM).

Methodology: Retrospective study was conducted involving all patients treated for staghorn calculi in Hospital Universiti Sains Malaysia from January 1995 to December 2003.

Results: In this study we found that about half of the patients (46%) had various degree of renal impairment at presentation. Six (7.1%) cases had further deterioration, 27.1% had improved renal function and other 65.8% had no change in renal function between 3 to 6 months post treatment. After 1 year follow up, we noted that, 4.8% of cases had deterioration in renal function, 32.3% improve and 62.9% of cases had static renal function.

Conclusion: In contrast to previous study done by Noori et al, the out come of staghorn calculi cases that were managed in HUSM were good and comparable with Western figures.

AN ALTERNATIVE FOR SERUM SUPPLEMENT IN CELL CULTURE TECHNIQUE: A PRELIMINARY STUDY

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Introduction: Fetal Bovine Serum (FBS) is a common growth factor supplement used for cell culture. However, there are problems related to its usage. Its exact composition is still unknown and could be contaminated with hazardous factors. Additionally, there is inconsistency in its composition between batches. There are also concerns about the ways of collecting the FBS, believed to inflict suffering to the fetal calves. Thus, there is scientific, safety, and moral reasons for omitting FBS from culture media and the need to find an alternative growth factor.

Objective: To determine an essential component for serum replacement in cell culture technique.

Methodology: Dry extract was obtained from a species of marine invertebrate believed to contain the alternative growth factor for cell culture. Serial dilutions of the extract with a standard culture media (DMEM) were prepared and tested against osteoblast cells in-vitro. DMEM media alone without the addition of the extract was used as control. The effect of the addition of extract substance to media was investigated using MTT assay to indirectly determine the cell proliferation.

Results: Our data showed that the extract increased the osteoblast cell proliferation in a dose-dependent manner. At the highest extract concentration used at 100mg/ml, there was a 341% increment as compared to the negative control after 72 hours of culture.

Conclusion: We conclude that the component of this extract may potentially be able to either completely replace the serum or to generally improve the culture medium.

VALIDITY AND RELIABILITY STUDY OF ROSENBERG SELF-ESTEEM SCALE IN MALAYSIAN YOUTH

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Introduction: Self-esteem refers to the value or worth, both positive and negative that people associate with or describe themselves. Rosenberg self-esteem scale is a brief and unidimensional measure of global self-esteem. It consists of 10 statements related to overall feelings of self-worth or self-acceptance. The items are answered on a four-point scale ranging from strongly agree to strongly disagree.

Objective: To validate the Rosenberg Self Esteem Scale among Malaysian youth.

Methodology: A survey was conducted among 123 Form two students, aged 12-13 years from King George V, a multiracial school in Seremban, using 10-item Rosenberg Self-esteem Scale (RSE). The questions had been translated and back translation by an experience teacher teaching English for many years. Exploratory factor analysis was used to study criterion validity and Chronbach's alpha for internal consistency. Informed consent was given by students and ethical clearance was granted by King College, London.

Result: Exploratory factor analysis revealed two constructs of: (i) positively worded and, (ii) negatively worded items. Items 1, 2, 4 and 7 correspond to positively worded items and items 3, 5, 6 and 9 correspond to negatively worded items. Item 8 showed inverse correlation in the positively worded construct. This sentence "I wish I could have more respect for myself" could have been said in a different way in the Malaysian context. Positively worded items loaded higher (3.314) compared to negatively worded items (2.467). Chronbach's alpha was 0.8.

Conclusion: Overall, the Malay version of Rosenberg Self-Esteem Scale is valid and reliable tool for assessing self-esteem in Malaysian youth. Item 8 could be dropped or said in a different way in order to suit the Malaysian context.

AN EXPERIMENTAL RNOMICS APPROACH TOWARDS THE IDENTIFICATION AND CHARACTERIZATION OF SMALL-NON-CODING RNAs IN A PATHOGENIC AGENT *SALMONELLA TYPHI*

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Introduction: About 98% of total RNA in a cell consists of non-coding RNA. Many of these RNAs sized between 50-500nt, termed small non-messenger RNA (snmRNAs). They are involved in specific recognition of cellular nucleic acid targets through complementary base pairing, controlling cell growth, differentiation and gene silencing. Some are also associated with abnormalities in imprinted inheritance that occur in several well-known developmental and neurobehavioral disorders.

Objective: By an experimental RNomic approach, we aim to identify and characterize snmRNAs from infectious agent, *S.typhi*.

Methodology: Total RNA from different growth stages of *S.typhi* were extracted, size selected (50-500nt) and constructed into a cDNA library representing snmRNA species. snmRNA species are identified and characterized using NCBI BLAST database search.

Results: Total RNA from different growth stages of *S. typhi* were extracted, size selected and cDNA library representing snmRNA species was successfully constructed. Identified snmRNA was characterized and identified using NCBI BLAST search. The snmRNA secondary structure is predicted and further experimentally confirmed by enzymatic and chemical probing.

Conclusion: This experimental approach could be used to identify snmRNAs from other infectious agents.

ROLE OF ANTI-NUCLEOSOME ANTIBODIES AS A DISEASE MARKER IN SYSTEMIC LUPUS ERYTHEMATOSUS (SLE) AND IT'S CORRELATION WITH DISEASE ACTIVITY

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Introduction: anti-nucleosome antibodies have been described in patients with systemic lupus erythematosus (SLE) and it is suggested that their presence is associated with disease activity.

Objective: To measure the level sensitivity and specificity of antinucleosome antibodies in SLE patients, and to evaluate the relationship between the level of antinucleosome antibodies and the disease activity.

Methodology: In a Cross sectional study, ninety SLE patients, forty-five patients with other connective tissue diseases and ninety healthy individuals were tested for anti-nucleosome antibodies by ELISA and anti-dsDNA antibodies by using IFA on *Crithidia luciliae*. SLE disease activity was evaluated by using SLE-Disease Activity Index (SLEDAI) score.

Results: Positive levels of antinucleosome antibodies were detected in 47/90 (52.2%) of SLE patients, and in 3/45 (6.7%) in other connective tissue diseases patients. None of the 90 healthy individuals showed these antibodies. Thus, the antinucleosome ELISA had a sensitivity of 52.2% and specificity of 93.3% whereas the sensitivity and specificity for anti-dsDNA was 36.7% and 91.3% respectively. A significant correlation ($r=0.777$) was found between the level of antinucleosome antibodies and the disease activity score ($p=0.001$).

Conclusion: Anti-nucleosome antibodies are commonly found in SLE patients. Therefore the measurement of antinucleosome antibodies appears to be an additional useful marker for diagnosis and management of SLE.

A MEDICAL RECONNAISSANCE TEAM AT TSUNAMI STRUCK, SRI LANKA

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Introduction: Emergency Medicine and disaster medicine are two specialties which are similar in the multidisciplinary involvement during the acute phase of the disaster. Recently, there were an increase in the number of disaster in the world and only a few physicians are familiar with its principles, unique organizational demands, coordination and the urgency of medical assistance or relief. This case report delineates our experienced at a tsunami disaster area.

Objective: To set-up medical relief camp at disaster area.

Methodology: Disaster Emergency Medical Assistance Team (DEMAT), HUSM and MERCY Malaysia, made a step forward by forming a medical reconnaissance team, comprised of an emergency doctor from HUSM and two MERCY members. The team flew to Colombo on day 5 after tsunami with medical supplies and related materials and the mission started from December 31st 2004 until January 8th 2005. Our surveillance area covered the Southern and Eastern Province with total distance of 1700 km along the coast. The strategies during this medical reconnaissance were risk analysis, resource matrix, communication and rapport with other relief teams, government agencies, local and international non government organizations

Result: The team was able to set-up a medical relief camp and distributed the relief items to the tsunami victims.

Conclusion: The DEMAT was able to set-up and provide medical relief with limited resources to a large scale disaster situation.

COMPARATIVE GROWTH CHARACTERISTIC OF HUMAN SKIN FIBROBLAST IN NORMAL AND HYPERTROPHIC SCAR CULTURE SYSTEM

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Introduction: Skin is a highly organized, complex structure comprises of essentially; an epidermis and the dermis. The dermal layer which consists of mainly fibroblast provides high tensile strength to the skin. Hypertrophic scar (HSc), a fibroproliferative disorder of the dermis, occurs after wounding. HSc is characterized by excess collagen synthesis and deposition by fibroblast in wound. The proliferation of fibroblast, fibroblast collagen synthesis and collagenase activity, was postulated to be deranged in HSc.

Objective: To determine the comparative growth characteristics of skin fibroblast in normal and hypertrophic scar tissue

Methodology: Fibroblasts were prepared according to a modified version of the Rheinwald & Green protocol. After epithelial sheet dispase removal, dermis was cut into small pieces and followed by trypsin and collagenase digestion for a suspension of fibroblasts. These cells were then cultured with DMEM medium supplemented with serum (FBS) and antibiotics. Cells were harvested by trypsin treatment. The cells were plated and incubated for 2, 4, 6, 8, and 10 d, after which, cells were counted with a heamocytometer.

Result: Samples of HSc and normal fibroblast used maintained a monolayer and displayed contact inhibition. Mean cell count for HSc fibroblast at day 2, 4, 6, 8 and 10 were 17×10^4 cells/ml, 36×10^4 cells/ml, 58×10^4 cells/ml, 80×10^4 cells/ml and 100×10^4 cells/ml respectively. Mean cell count for normal fibroblast at day 2, 4, 6, 8 and 10 were 2×10^4 cells/ml, 5×10^4 cells/ml, 8×10^4 cells/ml, 13×10^4 cells/ml and 30×10^4 cells/ml. There was significant difference between the mean cell count of the HSc and normal fibroblast at each experimental time point.

Conclusion: HSc fibroblast cell cultures exhibited linear growth and sustained a high cellular viability when compared to normal skin fibroblast.

RETROPERITONEAL LIPOSARCOMA – A CASE REPORT

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Introduction: Soft tissue sarcoma are rare mesenchymal neoplasms accounting for less than 1 % of all malignancies and 10% arise in the retroperitoneal tissues. Complete surgical resection is the treatment of choice but this is often difficult because of the anatomical location, late onset of symptoms and frequent invasion of contiguous retroperitoneal structures.

Objective : To report a case of retroperitoneal liposarcoma in a 32 year old lady who presented with huge abdominal distension.

Methodology: Following ultrasonographic study and CT-scan of the abdomen, exploratory laparotomy was done which was followed by complete surgical excision of the tumour, bowel resection and end to end anastomosis was done. Mass was sent for histopathological examination.

Results: There were three huge lobulated, well circumscribed, multiple discontinuous mass of yellow to pink in colour with total weight of 27 kilogram. The descending colon was anterior to the mass and overstretched. Abdominal aorta and inferior vena cava were pushed to the right by the mass. Histopathological examination revealed well differentiated liposarcoma.

Conclusion: The prognosis of retroperitoneal liposarcoma is poor but better prognosis can be achieved if complete excision done and follow up for life.

THE APPLICATION OF MULTICOLOUR FLUORESCENCE IN SITU HYBRIDISATION (M-FISH) IN DETECTING MARKER CHROMOSOME

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Introduction: Multicolor FISH (M-FISH) allows the simultaneous visualization of all human chromosomes in a different colour and consequently allows the examination of the human genome in a single hybridization.

Objective: To determine the origin of marker chromosome found in a six-year-old girl who presented with developmental delay. Multicolour fluorescence in situ hybridization (M-FISH) and fluorescence in situ hybridization (FISH) using locus specific probe were the major tools applied in this study.

Method. Conventional and molecular cytogenetic analysis, which include karyotyping, M-FISH and FISH were applied in this study. Blood sample of the patient were cultured and harvested following standard protocol. For conventional method, ten metaphases were analyzed. M-FISH using SpectraVysion Assay (Vysis) was done to ascertain the origin of the marker chromosome while FISH using LSI SNRPN Spectrum Orange/ CEP 15 D15Z1 Spectrum Green/PML Spectrum Orange (Vysis) was applied to validate the finding of M-FISH. Blood samples of the parents were also karyotyped to rule out carrier status.

Results. Karyotype of the patient showed presence of marker chromosome; 47,XX,+mar. M-FISH identified the marker as chromosome 15. FISH analysis confirmed the finding. Karyotype of both of the parents showed normal karyotype; 46,XX in the mother and 46,XY in the father.

Conclusion. The technologies of M-FISH and FISH have enabled the marker chromosome to be identified in which conventional method was unable to.

GENETIC SCREENING OF A1555G MITOCHONDRIA DNA MUTATION IN NON SYNDROMIC SENSORINEURAL HEARING LOSS IN HOSPITAL UNIVERSITI SAINS MALAYSIA – A POTENTIAL SCREENING METHOD

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Introduction: Hearing loss is the most common sensory disorder in the human population. The incidence of congenital deafness is estimated at 2-6 in 1,000 life births, of which approximately equal numbers of cases are attributed to environmental and genetic factors. The homoplasmic A1555G mutation in the mitochondrial 12S ribosomal RNA gene has been the first mitochondrial DNA mutation to be associated with nonsyndromic sensorineural hearing loss.

Objectives: To determine the frequency of A1555G mtDNA mutation among 75 patients with nonsyndromic sensorineural hearing loss in Hospital USM and the carrier rate of mutation in another 75 unrelated control subjects.

Methodology: A total of 75 children who attended hearing examination at the Otorhinolaryngology Clinic, Hospital Universiti Sains Malaysia were evaluated for the family history relationship, the degree and types of hearing loss using appropriate audiological test. Blood samples from all patients and 75 normal control subjects were extracted by standard method and tested for A1555G mutation by Restriction Fragment Length Polymorphism (RFLP) technique.

Results: Among the 150 samples analyzed, one A1555G mtDNA mutation was detected in a patient and another one in control group. In our population, the carrier rate of A1555G mtDNA mutation was estimated at 1.3%.

Conclusion: This study gives a good indication that mitochondria A1555G mutation is present among the nonsyndromic sensorineural hearing loss patients studied. This warrant further evaluation of deaf cases in the population.

PRELIMINARY STUDY: THE CEPHALOMETRIC FINDINGS OF PATIENTS WITH OBSTRUCTIVE SLEEP APNEA

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Introduction: Obstructive sleep apnea (OSA) is widely prevalent problem characterized by recurrent upper airway obstruction during sleep. The respiratory muscle attempts to inspire, but a blockage in the upper airway prevents air from reaching the lung.

Objective: To describe the craniofacial morphology and pharyngeal anatomy of patient with Obstructive Sleep Apnea and compare it to a control group.

Methodology: The experimental group consists of 9 male, 6 female aged ranged 18-61 years, with a mean age 42 ± 6 years. Obstructive sleep apnea was diagnosed following an overnight polysomnography at Sleep Lab in Hospital Sains Malaysia. The control group consisted of 5 male and 2 female with mean age 35 ± 3 years who are diagnosed as non OSA. Psychiatric patients, edentulous patients and patients taking sedative are excluded from this study. Lateral cephalograms were taken following a standardized produce, with the subject positioned in the cephalostate. The following variables were measured; the length of the soft palate, the soft palate width, the length of the tongue, the distance of the hyoid bone to the mandibular plane, the maxillary position, the mandibular position, the lower face height, and the total facial height.

Results: Correlation of the cephalometric variables indicated a significant linear relationship with hyoid bone position and the length of the soft palate between control group and OSA group ($P<0.05$). No relationships were found in our study sample in maxillary position, mandibular position between the two groups. At the nasopharyngeal and velopharyngeal level the posterior airway space was significantly reduced in the OSA group.

Conclusion: We demonstrate significantly correlation between anatomic variables assessed by cephalometry. These are consistent with hypothesis of an influence of soft tissue configuration and anatomic narrowing on the pharyngeal collapsibility of the OSA group.

OCULAR TUBERCULOSIS: A RARE PRESENTATION

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Introduction: We reported a rare presentation of ocular tuberculosis in a 70-year-old immunocompetent lady. Reemergence of tuberculosis due to migration of people from endemic area, increasing incidence of AIDS and multi drug resistance may lead to rarer presentations of ocular tuberculosis.

Case report: She presented to us with history of sudden onset of painful left eye proptosis associated with diffuse upper lid swelling for a week. Her visual acuity was already poor for the past one year deteriorated further. She is a chronic smoker but denies any symptoms suggestive of pulmonary tuberculosis. Her vision was only hand-movement and presence of relative afferent papillary defect. There was prominent axial proptosis with diffuse and firm upper eyelid swelling, which leads to complete mechanical ptosis. Extraocular muscle movements were restricted in all gazes. Diffuse hyperemic and chemotic conjunctival and necrotic scleral near the superior limbus was noted. Severe anterior granulomatous uveitis with presence of fibrin plaque obscuring the pupil and cataractous lens was observed. B-scan revealed presence of severe vitritis and thickening of sclera. Orbital CT revealed involvement of lacrimal gland and suggestive of orbital infection. Mantoux test was positive but Ziehl-Nielsen staining of sputum and PCR for tuberculosis of the aqueous was negative. Suspicious apical lesion was seen on the chest x-ray. Conjunctival biopsy revealed presence of chronic inflammation. Anti-tuberculosis regime was started simultaneously with systemic steroids. Tremendous improvement of the ocular inflammation and proptosis was observed.

ORTHOTOPIC BLADDER SUBSTITUTION

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Introduction: Orthotopic neobladder substitution (ONS) has passed the test of time. The goals of urinary diversion have evolved from simply diverting the urine through a conduit to orthotopic substitution, which provides a safe and continent means to store and eliminate urine with efforts to provide an improved quality of life. In these patients life is similar to that in individuals with a native lower urinary tract. It provides excellent continence rates, and acceptable complications. Suitable patients undergoing radical cystectomy for stages pT2N0M0 to pT4N0M0 for bladder transitional cell carcinoma (TCC) should be offered orthotopic neobladder substitution.

Case report: A 45 year-old Malay gentleman who had been diagnosed of bladder TCC grade 1, stage pT3N0M0 and who was agreeable for operation, was subjected to total cystectomy and ONS, the Hautmann type that is using terminal ileum in a W-shape. Surgery was carried out successfully and patient recovered well post operatively without any complications. He has resumed his daily routine activity without many disturbances in his quality of life. We would like to share our experience on this case; the first of its type in Hospital Universiti Sains Malaysia (HUSM).

A RELATIONAL DATABASE FOR MATCHING PROSPECTIVE STUDENTS WITH PARTNER MEDICAL SCHOOLS OF THE INTERNATIONAL MEDICAL UNIVERSITY

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Introduction: The International Medical University (IMU) offers a unique system that allows IMU's graduates of their Phase-I Medical Programme to pursue their clinical training with partner medical schools (PMSs) abroad. Since 1990, a specially commissioned computer programme, written in Fortran, has been used to match students with prospective PMSs. However, the programme is not user-friendly and cannot be reprogrammed to accommodate new matching criteria.

Objective: To develop a user-friendly programme, and to compare its matching results with the legacy system, in order to study its feasibility and efficiency.

Methodology: A relational database was developed using Filemaker Pro™ 6 to automate the matching process. Eighty-four Phase-I final-year students and 22 PMSs involved in the 2003/04 M2-matching exercise participated in the study.

Results: All 84 students were successfully matched with PMSs using both programmes. The results showed that 46.4%, 17.9% and 9.5% of students were matched with their first, second and third choice of PMSs, respectively, using the database method compared with 42.9%, 19.0% and 9.5%, respectively, using the Fortran method. There was, however, a 22.6% (19/84) discrepancy in the matched results. Of the 19 mismatched cases, 8 were clearly due to a lack of ability of the Fortran method to resolve ties in weighted values both 'between students' and 'within the same student'.

Conclusion: This study showed that the inclusion of *Class Ranking* and *Student-Choice-Number Ranking* criteria in the matching formula gave the new program better resolution in the matching of students with PMSs. It is recommended that IMU replace the legacy Fortran system with the new relational database system for ease-of-use, modular expansion capabilities, compatibility with existing MS Office™ software, and networking advantages.

STEREOLITHOGRAPHY MODEL IN MANAGEMENT OF UNILATERAL MANDIBULAR CONDYLAR HYPERPLASIA

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Introduction: Condylar hyperplasia presents as a challenge because of its progressiveness and the resulting dentofacial deformity. The stereolithography model is advantageous for surgery planning to facilitate condylectomy.

Case report: We reported a case of condylar hyperplasia in a 33 year-old lady. Clinical, radiographic and scintigraphy finding were consistent with an active unilateral hyperplasia. The stereolithography model was used to assist in the pre-surgical planning. Model surgery was done to produce the desired effect. Hence it reduces the duration of surgery. The condylectomy was performed through the modified pre-auricular approach. The post surgery result was satisfactory.

SINUS AUGMENTATION WITH AUTOGENOUS BONE GRAFT AND XENOGRAFT: 2 CASES PRESENTED

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Introduction: Dental implant is becoming famous in oral rehabilitation recently. However the insufficient bone of maxilla, particularly near the sinus area discourage the dentist to proceed with dental implant. Furthermore the use of autogenous bone graft will withdraw the interest of patient for implant. In this case the used of the xenograft is nobel to serve for these two problems.

Objective: To assess the feasibility of sinus augmentation with autogenous bone and xenograft.

Methodology: Two cases of autogenous bone and xenograft were performed to facilitate the sinus augmentation. The post- operative radiological assessment was carried out at the first and fourth week post operation. Intra oral periapical radiographs were then compare to evaluate the graft condition.

Results: Both types of graft show no evidence of graft failure (resorption) through the radiological assessment.

Conclusions: Sinus augmentation with either autogenous bone or xenograft shows good result, however more cases and longer period of assessment is needed.