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Editorial Board

EVALUATION OF UTERINE ARTERIAL IMPEDANCE IN PREGNANT WOMEN WITH RECURRENT SPONTANEOUS FIRST TRIMESTER ABORTIONS

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Abstract

Introduction: Uterine receptivity is of great importance in achieving a normal pregnancy and is regulated by a number of factors including uterine perfusion. The predictive value of uterine arterial pulsed Doppler velocimetry in recurrent first trimester abortions is controversial.

Aim of the work (Objective): In this prospective study, we measured uterine artery pulsatility index (PI), as a marker of uterine arterial blood flow resistance in pregnant women with and without recurrent pregnancy loss in first trimester by transvaginal pulsed Doppler ultrasonography and evaluated the association of autoantibodies, including antiphospholipid antibodies (APAs).

Patients & Methods: This study was carried out at Mansoura University Hospitals, Obstetrics and Gynaecology, Diagnostic Radiology and Clinical Pathology departments from October 2004 to May 2006. One hundred women at 5 to 7 weeks' gestation were enrolled in the study after informed consent. The study population consisted of two groups: healthy women with one or no abortion (control group: n = 60) and women with three or more successive spontaneous first trimester abortions (recurrent abortions group: n = 40). Uterine artery pulsatility index (PI), was evaluated by transvaginal pulsed Doppler ultrasonography. Blood tests for antinuclear antibodies (ANAs) and antiphospholipid antibodies (APAs) were also performed.

Results: The uterine artery PI was significantly higher in the recurrent spontaneous first trimester abortions group than that in the control

group. Women with abnormal blood tests had a significantly higher PI in the uterine artery. A high PI in the uterine artery was observed in women with antinuclear antibodies and even higher in women with antiphospholipid antibodies. Among women without antinuclear antibodies or those without antiphospholipid antibodies, the uterine artery PI in the recurrent spontaneous first trimester abortions group was significantly higher than that in the control group. This observation suggests that the uterine artery PI may be an independent index for recurrent spontaneous first trimester abortion.

Conclusion: The introduction of pulsed and color Doppler sonography has provided the means for direct non-invasive evaluation of uterine impedance. Analysis of uterine artery PI combined with other blood tests may help in evaluating the risk of pregnant women with recurrent early pregnancy failure.

Key words: Recurrent first trimester abortion, transvaginal pulsed Doppler ultrasonography, uterine artery, antinuclear antibodies, antiphospholipid antibodies.

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PLASMA LEPTIN; TUMOR NECROSIS FACTOR-α AND NUTRITIONAL STATUS IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS

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Abstract

Introduction: Chronic obstructive pulmonary disease (COPD) is a syndrome of chronic wasting associated with a chronic inflammatory response. Leptin is a protein mainly secreted by adipocytes and it has a major role in control of body weight and energy expenditure. It has been suggested that increased levels of circulating leptin may contribute to anorexia in pathologic conditions including COPD.

Aim of work: This study aimed to investigate, prospectively, the potential role of circulating plasma leptin and tumor necrosis factor-α (TNF- α) levels in the malnutrition of COPD patients.

Patients & Methods: Sixty COPD patients and ten healthy control subjects participated in this study. Sixty COPD patients were divided into 3 groups: Group I: acute patients without malnutrition (n=20); Group II: stable patients without malnutrition (n=20); and Group III: stable patients with malnutrition (n=20). To eliminate the effect of sex differences, all patients and controls were males. Body mass index (BMI), triceps skin-fold thickness (TSF), mid-upper arm circumference (MAC), mid-upper arm muscle circumference (MAMC), serum leptin and TNF-α levels, serum transferrin (TF), serum albumin (Alb),serum prealbumin, total lymphocytes count (TLC), forced expiratory volume in one second (FEV1), maximal inspiration pressure (MIP) and maximal expiration pressure (MEP) were measured in all participants. Leptin levels were measured by ELISA; TNF-α levels was measured by ELISA. The difference between group and correlation of

these parameters were analyzed.

Results: Nutritional parameters were significantly lower in Group III than other groups (P<0.05). Serum leptin levels were significantly lower in Group III (COPD, with malnutrition, stable disease) compared to either Group II (COPD, without malnutrition, stable disease) or controls (P <0.05). However, the difference between Group I (COPD, without malnutrition, acute state), Group II (COPD, without malnutrition, stable disease), and controls was not statistically significant (P >0.05). There was no statistically significant difference in serum TNF-α levels between Group I, Group II, Group III and controls (P >0.05). There was no significant correlation between leptin and TNF-α in any group.

Conclusions: Leptin was not involved in anorexia and weight loss of COPD patients. There was no statistically significant difference in serum leptin levels between COPD patients during stable stage and acute exacerbation, and there was no significant correlation between TNF-α and leptin during the regulation of the energy balance in COPD patients. In addition, circulating leptin works independently of the TNF-α system and does not primarily affect BMI in COPD patients.

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EVALUATION OF SOME LIVER FIBROSIS MARKERS IN CHRONIC LIVER DISEASES

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Abstract

Background: Liver fibrosis is a dynamic bi-directional process involving phases of progression and regression. Its diagnosis is dependent on histopathological examination of biopsy specimens. The aim of this study was to evaluate some non invasive serum markers of liver fibrosis and to correlate them with liver biopsy. Methods: Fifty patients with chronic liver diseases matched with 10 age and sex healthy blood donors were included in the study. For both groups; estimation of serum matrix metalloproteinase 9(MMP-9), tissue inhibitor of metalloproteinase 1(TIMP-1) by ELISA technique and haptoglobin by RID, scoring of the age-platelet index (API), AST to platelet ratio index(APRI),and prothrombin time (PT) were done. For the patients, histopathological examination of liver biopsy specimens for assessment of necroinflammatory grade (A) and fibrosis stage (F) applying the METAVIR scoring system. Results: API showed a significant positive correlation with both fibrosis and necroinflammatory activity, by using ROC curve for discrimination of significant fibrosis (F≥ 2) & moderate to severe necroinflammatory activity (A≥ 2), the AUROCs were 0.88 ± 0.09 & 0.69 ± 0.16 respectively. In case of Platelet count the AUROC was 0.80 ± 0.12 for the diagnosis of established cirrhosis (F4). PT showed a significant positive correlation with fibrosis progression, and it was a sensitive predictor of significant fibrosis and the AUROCs, for (F ≥ 2) and (F4) were 0.67 ± 0.15 and 0.76 ± 0.15 respectively. While APRI showed a significant positive correlation with both fibrosis stage and ne-

croinflammatory grade and the AUROCs were 0.68 ± 0.15 and 0.69 ± 0.15, for (F ≥ 2) and (F4) respectively .The mean serum level of MMP-9 was significantly higher in patients than controls (P < 0.05) and showed a significant negative correlation with fibrosis stage (P < 0.05). By using ROC curve to assess MMP-9 for discrimination of significant fibrosis (F≥ 2) and cirrhosis (F4), the AUROCs were 0.67±0.17 and 0.69±0.18 respectively, while for (A≥ 2), it was0.75±0.16. The mean value of serum TIMP-1 was significantly higher in patients than controls (P < 0.05), with significant positive correlation with necroinflammatory grade(P < 0.05). The AUROCs for (F≥ 2) and (F4) were 0.58 ± 0.2 and 0.53 ± 0.19 respectively, while for (A≥ 2), it was 0.67±0.17. Haptoglobin showed a significant negative correlation with fibrosis progression(r=-0.4, P < 0.05) and AUROC for (F≥ 2) and (F4) were 0.75± 0.17 and 0.78 ± 0.15 respectively. Conclusion: MMP-9 was a fair marker of fibrosis as well as inflammatory activity, and TIMP-1 was a sensitive and to a lesser extent specific marker of advanced liver disease, discriminating inflammatory activity rather than fibrosis stage. On the other hand API was the best marker that can discriminate significant fibrosis, while platelet count for diagnosis of cirrhosis. Among the assessed serum markers, haptoglobin, API and PT were the most sensitive predictors of significant fibrosis, while haptoglobin and API were the most sensitive predictors of cirrhosis. Finally , these serum assays, although promising, are still in need of being refined with further prospective studies.

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PREEMPTIVE CAUDAL EPIDURAL ANALGESIA IN ADULT PATIENTS UNDERGOING LUMBAR DISC SURGERY: A COMPARISON BETWEEN NEOSTIGMINE, ROPIVACAINE AND THEIR MIXTURE

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Abstract

Background *This prospective , randomized double blind study was designed to evaluate the analgesic characters and profile of ropivacaine/ neostigmine mixture in comparison with the analgesic characters of ropivacaine and neostigmine when used alone and injected caudally in cases subjected for elective lumbar disc surgery at Mansoura University Hospitals .*

Methods *Thirty adult patients ASA I-II subjected for elective lumbar disc surgery at Mansoura University Hospital were enrolled in this study. General anesthesia was induced with 5 mg /kg thiopental sodium and tracheal intubation was facilitated using atracurium 0.5 mg/kg. Patients were randomly assigned into three equal groups (n= 10) according to the regimen of caudal drug injection. The injectate was prepared by an anesthesiologist not involved in the evaluation of the patients. Patient's groups were as follows : Ropivacaine group (R) , received ropivacaine 0.2 % in saline with total volume 30 ml. Neostgmine group (N), received neostgmine 4 ug /kg in total volume 30 ml . Ropivacaine-Neostgmine group (RN) , patients received ropivacaine 0.2% + neostigmine 4 ug/kg in total volume 30 ml . Intraoperative monitoring for ECG, heart rate,mean arterial blood pressure, arterial oxygen saturation and capnography was recorded every 15 minutes till the end of the study period. Postoperative pain was assessed immediately after surgery and at 2,4,8,12 hour postoperatively by the visual analogue scale (VAS), where 0 =no pain, 5= me-*

dium degree of pain and 10 =severe pain . The time at which first analgesic medications (mepredine,25mg dosage) required by the patient in the postoperative period was recorded .Duration of postoperative analgesia (duration from the end of surgery to the first pain sensation) was recorded. Postoperative complications (nausea , vomiting , and any other complications) were recorded .

Results *There were no statistically significant differences between the three groups as regard hemodynamics, nausea and vomiting while urine retention was more observed in all patients received ropivacaine(R&RN groups). As regard postoperative analgesia , group RN(received ropivacaine+ neostigmine) had the best pain score and longer duration of postoperative analgesia as compared with the other groups .*

Conclusion *Addition of neostigmine 4μg/kg to caudal ropivacaine 0.2% improves the quality of postoperative analgesia and prolongs its duration compared with caudal ropivacaine or neostigmine alone without increasing incidence of side effects in patients subjected for lumbar disc surgery.*

Key words *Analgesia, Caudal epidural, Lumbar disc surgery, Neostigmine, Ropivacaine*

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BLOOD TRANSFUSION IN OBSTETRIC PRACTICE : OUR EXPERIENCE

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Abstract

Objective: *To evaluate the transfusion experience during the year 2004 with regards to factors namely, clinical predictors of transfusion, time course of transfusion in relation to delivery time, in order to determine were we stand among international standard.*

Methods: *A retrospective hospital based study was conducted where all patients who need blood transfusion during the year 2004 at the Obstetric unit of King Abdulaziz University Hospital Jeddah were evaluated compared to the total number of deliveries.*

The hospital record of 80 patients who received blood transfusion were reviewed retrospectively and the circumstances of transfusion for these patients were documented.

Results: *A total of 80 patients received blood transfusion over one-year period of time, during which there were 3790 deliveries which constituted 2.1 % of all obstetric admissions. Of those 80 patients who received transfusion, 44 (55%) were delivered by cesarean section. 33 patients (40%) of all transfused patients received their transfusion either antepartum or pre-operative period.*

Conclusion: *The study highlights the high incidence of patients who need blood transfusion (2.1%). Evaluation of time transfusion in the study patients and time shows more than 40% need their transfusion before either spontaneous or surgical delivery, reflect poor hemoglobin and nutritional status as well as chronic anemia and probably poor compliance with iron intake.*

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BIFURCATION STENOSIS: TWO STENTS VERSUS ONE STENT

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Abstract

Introduction: *Percutaneous coronary intervention for coronary bifurcations is usually associated with a low success rate, a high rate of complications, and a more frequent need for target lesion revascularization.*

Aim of the study : *The purpose of this study was to evaluate two different techniques for dealing with bifurcation lesions: 1) stenting of both branches versus 2) stenting of the main branch and balloon dilatation of the side branch*

Patients and method : *Fifty Patients with significant bifurcation stenosis were divided into 2 groups: (1)Stenting of the main and side branch (n=25) (group I).(2) Stenting of the main branch and balloon angioplasty of the side branch (n=25) (group II).*

Results: *procedural success showed no significant difference between the two groups (84% versus 76%, respectively, p>0.05). There was non statistically difference between the two groups as regard in hospital MI, death or target lesion revasularizasion (3(12%),1(4%) and 4(16%) versus 1(4%), 0(0%) and 0(0%) respectively, p>0.05). Six months follow up showed a non statistically difference between the two groups as regard MI, death, restenosis and target lesion revasularizasion (3(12%),1(4%),5 (20%) and 4(16%) versus 2(8%), 0(0%), 4(16%) and 4 (16%) respectively, p>0.05).*

Conclusion: *Stenting of the main and side branch has no advantage over stenting of the main branch and balloon angioplasty of side branch.*

Key Words: *Bifurcation Stenosis, two stent and one stent*

Abbreviations: *MI- myocardial infarction; STEMI- ST elevation myocardial infarction; TIMI- Thrombolysis in Myocardial Infarction; PCI- Percutaneous coronary intervension.*

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IMPACT OF HIGH DOSE APROTININ ON CARDIAC FUNCTION AND CEREBRAL OXYGENATION IN VALVE REPLACEMENT

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Abstract

Objective: *The aim of this study is to evaluate the effects of full dose aprotinin administration on early and late postoperative myocardial function, cerebral oxygenation by monitoring of jugular bulb oxygen saturation and neurological outcome after cardiac surgery.*

Methods: *Sixty patients underwent elective single valve (mitral or aortic) replacement were randomly classified into two groups: High dose aprotinin group (n=30) and control group (n=30). Patients' parameters were recorded perioperatively, early post operative and after 3 months. Patients parameters include echocardiographic evaluation, operative parameters (spontaneous recovery of the heart, the need for inotropic support to wean the heart from cardiopulmonary bypass), ICU parameters [(duration of intropic support, ventilatory hours, ICU stay) and complications (including low COP syndrome, myocardial infraction, and renal impairment)], lastly jugular venous bulb oxygen saturation, neurological deficits, and mortality rate.*

Results: *The patients who received high dose aprotinin showed a significantly less intraoperative and early postoperative blood loss than control group patients, with significant reduction of postoperative ventilatory support, need for inotropes and total ICU stay. The early postoperative period showed that high dose aprotinin group had marked improvement in the echocardiographic measurements. This was maintained throughout the follow up period. Significant cerebral desaturation was recorded in control group in the early postoperative period. The neurological deficits*

and hospital mortality were significantly higher in control group than aprotinin group.

Conclusion: *We concluded that in elective valve replacement surgery, high dose aprotinin administration provides better intraoperative myocardial and cerebral protection reflected in better postoperative cardiac and cerebral functional recovery.*

Key words: *Anesthesia, cardiac surgery, aprotinin, risk factors, outcome, complications.*

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LAPAROSCOPIC REPAIR OF VENTRAL HERNIA

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Abstract

Background: *Laparoscopic repair of ventral hernia is rapidly becoming more commonplace in the armamentarium of general surgeons. Its utility and low recurrence rates make it a very attractive option. The technique of the laparoscopic repair is based on the principle described by Stoppa, however the hernial sac is not dissected and is left behind. This minimizes difficult dissection, blood loss and large incisions. The laparoscopic technique also ensures that all defects are seen and repaired.*

Objective: *The aim of the study is to evaluate this technique in comparison to open onlay mesh repair of ventral hernia.*

Methods: *From November 2004 to October 2006, 60 patients with ventral hernias were equally randomized into two groups; in group I, laparoscopic repair was practiced using a composite mesh (Parietex®), fixed intraperitoneally by sutures and tackers, while in group II, open mesh repair was employed after dissection, herniotomy and peritoneal closure, a prolene mesh used to close the defect, fixed by continuous prolene 0 suture. The two groups were compared in regard to operative time, postoperative complications, hospital stay, recurrence and the cost.*

Results: *The patients in the two groups were comparable at baseline in terms of sex, age, presenting complaints, and comorbid conditions. The mean surgery durations were 90.6 minutes for the laparoscopic repair and 99.3 minutes for the open repair with no significant difference. The mean postoperative stay was shorter for laparoscopic group than for open hernia group (1.8 Vs 3.7 days with significant difference). There were fewer complications (20% and no recurrences) among the patients who underwent laparoscopic repair than among those who had open repair*

(40% and no recurrence). The cost of composite mesh and tacker were significantly higher than the cost of prolene mesh.

Conclusions: *Laparoscopic ventral hernia repair is safe and resulted in shorter hospital stays, fewer complications and so far no recurrence during the period of follow-up.*

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OUTCOMES OF LAPAROSCOPIC CHOLECYSTECTOMY DURING THE FIRST ADMISSION OF ACUTE BILIARY PANCREATITIS

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Abstract

Objectives: *Biliary stones are the leading cause of acute pancreatitis. Although cholecystectomy and selective endoscopic retrograde cholangiography (ERC) comprise the current treatment in patients with acute biliary pancreatitis (ABP), the time of intervention is still controversial. The aim of the study is to evaluate the policy of laparoscopic cholecystectomy for patients with ABP during the initial admission.*

Methods: *The study was carried out in the period November 2004-October 2006. Thirty patients with ABP were subjected to laparoscopic cholecystectomy during the index admission after clinical and biochemical resolution of the attack. The severity of the disease was assessed using Ranson' criteria; 3 or less indicates mild pancreatitis, while more than 3 is considered severe pancreatitis. ERC and endoscopic sphincterotomy (ES) are used on a selective basis pre- and post-operatively. Standard 4-ports technique was used; timing for surgery, operative difficulty, conversion rate, post-operative morbidity and mortality were evaluated.*

Results: *A total of 30 patients with the diagnosis of ABP were included in this study. Twenty-five patients (83.3%) were categorized as having mild pancreatitis (Ranson' criteria ≤ 3) and 5 patients (16.7%) were categorized as having severe pancreatitis (Ranson' criteria > 3). All patients were managed conservatively and underwent laparoscopic cholecystectomy after clinical and biochemical resolution of the attack on the same hospital admission. The time from admission to the operating room ranged from 3-8 days (median 5.1) in mild pancreatitis, while in severe*

pancreatitis; it ranged from 7-28 days (median 20.2). ERC and ES were performed on selective basis for 6 patients pre-operatively and in 2 patients post-operatively (26.6%). Magnetic resonance cholangiopancreatography (MRCP) was also done on selective basis to clear the anatomy of the region of ampulla of Vater in 4 patients (13.3%) for whom ultrasound (US) was not decisive. Laparoscopic cholecystectomy was feasible in spite of edema, inflammation and adhesion. The rates of conversion, morbidity and mortality were 6.6%, 33.3% and 3.3%, respectively.

Conclusion: *Definitive treatment of ABP can be accomplished effectively and safely by cholecystectomy following clinical and biochemical improvement with acceptable morbidity and mortality during the same admission.*

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UMBILICAL CORD BLOOD PROCALCITONIN AS AN EARLY PREDICTOR OF EARLY-ONSET NEONATAL SEPSIS IN PREMATURE NEONATES: A COMPARATIVE STUDY VERSUS C-REACTIVE PROTEIN

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Abstract

Objectives: *This study aimed to compare the efficacy of umbilical cord blood levels of procalcitonin (PCT) and C-reactive protein (CRP) as early predictors of early-onset sepsis (within 72 hours since delivery) in premature neonate admitted to NICU.*

Patients & Methods: *The study included 88 preterm neonates with mean gestational age of 33.8±3; range: 29-38 weeks and mean birth weight of 1955±234; range: 1480-2350 gm with a mean 5-min Apgar score was 7.7±1.1; 7 neonates were small-for-gestational age and 23 neonates required resuscitation at birth. Neonates were categorized according to the presence of sepsis into two groups: Infected neonates had clinical manifestations of sepsis and positive blood culture and Non-infected neonates showed no clinical manifestations and had negative blood culture at 72 hours since delivery. Two blood samples were obtained: umbilical cord blood samples obtained at time of admission to NICU for estimation of serum CRP and plasma PCT and a venous blood sample was obtained either at time of development of clinical signs of sepsis or at 72 hours since delivery in non-infected groups for blood culture and complete blood count (CBC) to assure the clinical diagnosis of infected cases.*

Results: *Sixty neonates (68.2%) developed clinical signs of sepsis and proved by blood culture to be infected. The mean levels of CRP and PCT estimated in umbilical blood sample obtained at time of admission to NICU were significantly higher ($p<0.05$) in infected compared non-infected*

neonates. Calculation of diagnostic validity characters of each cutoff point defined plasma PCT cutoff at >0.6 ng/ml as the appropriate value for exclusion of neonatal sepsis with 100% sensitivity and negative predictive value (NPV) and specificity rate of 93% and accuracy of diagnosis with rate of 97.7%. Comparison of the diagnostic validity characters of umbilical cord plasma PCT (at cutoff point of >0.6 ng/ml) and umbilical cord serum CRP (at cutoff point of >10 mg/l) as an early predictor of development of neonatal sepsis showed a significant difference in favor of plasma PCT, (X2= 3.19, p<0.01).

Conclusion: It could be concluded that estimation of plasma PCT in umbilical cord blood of preterm neonates could be used as an early specific and sensitive predictor for the possibility of development of early-onset neonatal sepsis at NICU and plasma PCT level at cutoff point of >0.6 ng/ml is appropriate for identification of neonates at risk of developing sepsis with 100% sensitivity and negative predictive value.

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RISK OF UTERINE RUPTURE WITH THE USE OF PROSTAGLANDIN E2 FOR INDUCTION OF LABOR IN WOMEN WITH A PREVIOUS CESAREAN SECTION SCAR

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Abstract

Objective: To determine the risk of symptomtic uterine rupture in women induced with prostaglandin E_2 vaginal tablet (PGE_2) after 1 previous cesarean section.

Study design: A cohort study of all women with a live singleton fetus undergoing a trial of labor (TOL) after a previous low - transverse cesarean delivery was performed in King Faisal Armed Forces Hospital, Saudi Arabia. The current analysis was limited to women at term with 1 prior cesarean delivery. We assessed the risk of uterine rupture for deliveries with spontaneous onset of labor and those in which labor was induced by PGE_2 vaginal tablets. Rates of uterine rupture were compared for these 2 groups. Potential confounding variables were controlled by using logistic regression analysis.

Results: Of 3200 trials of labor, 960 (30%) were PGE_2 induced and 2240 (70%) were spontaneous labor. The uterine rupture rate with PGE_2 - induced trial of labor (24 / 960; 2.5%) was significantly higher than with a spontaneous trials of labor (11 / 2240; 0.50%; P = 0.01). In a logistic regression analysis that was controlled for maternal age, use of epidural analgesia, oxytocin augmentation, birth weight, gestational age, year of trial of labor, and prior vaginal delivery, the odds ratio for uterine rupture in those patients with PGE_2 - induced trial of labor was 5.1 (95% confidence interval, 1.9 -14.2).

Conclusion: For women with one prior cesarean delivery, induction of labor with PGE_2 is associated with an almost 5 - fold greater risk of ute-

rine rupture than those who deliver after spontaneous labor.

Key words: Uterine rupture, labor induction, prostaglandin E_2, vaginal birth after cesarean section.

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DIFFRENT TYPES OF SEIZURES IN PATIENTS WITH CHRONIC RENAL DISEASES UNDER REGULAR HEAMODIALYSIS PROGRAM

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Abstract

This retrospective study was designed to detect the frequency of seizures occurrence in patients with chronic renal failure undergoing regular heamodialysis in Al Gaber Nephrology center Al Ahsa Saudi Arabia ,130 patients were reviewed, seven of them were found to experience one or more seisures during thier dialysis program in the last year 5 of them were found to have tonic clonic seizures , one with partial seizures & one with partial passing into generalized seizures. Three of them were found to experience seizures during heamodialysis session and the others were experiencing seizures in between the dialysis sessions. From this study we could conclude that seizures in patients with chronic renal failure on regular heamodialysis program is an occasional event and not a chronic disorder.

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THE VALUE OF CARDIAC TROPONIN I AS A PREDICTOR OF CARDIAC EVENTS AFTER PERCUTANEOUS CORONARY INTERVENTION

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Abstract

Background : *Elevation of cardiac troponin I(cTnI) is not uncommon after coronary interventions. Many studies tried to find factors responsible for this elevation and its prognosis on short and long term follow up. Whether or not elevation of cardiac troponin post coronary interventions is responsible for early in hospital and late adverse outcome is still under debate.*

Objective : *To identify different predictors of cardiac troponin I elevation after coronary interventions, and to assess the relation between cardiac troponin I elevation post coronary interventions and (early and late) adverse clinical outcome.*

Patients and Methods : *The study included 50 consecutive patients who underwent coronary angioplasty with stenting in the Cardiac Catheterization Laboratory at Benha University Hospital during the period from December 2004 to December 2005.*

All patients were subjected to the following : *Full medical history and clinical data were obtained from the patients with special emphasis on the major documented risk factors for coronary artery disease (CAD) (age, sex, obesity, smoking, diabetes mellitus, hypertension, hypercholesterolemia, positive family history of CAD), and history of previous myocardial infarction (MI) or anginal attack. Twelve-lead standard surface electrocardiogram (ECG) was done routinely before and after intervention, echocardiography was also done to determine the global left ventricular systolic function, and coronary angiography was done for all patients and angiographic analysis was performed. Stenosis was considered*

when there was > 75% reduction in luminal diameter at coronary angiography. Quantitative measurements of the target lesion was performed before intervention by measurement of the lesion length, minimal luminal diameter and reference diameter. Percutaneous Coronary Intervention (PCI) was done and stenting for all patients . The procedure was considered successful when the residual stenosis in the dilated segment was less than 20% . Troponin I and CK-MB were measured 2 hours before the procedure and 8 & 24 hours after the procedure by immuno-inhibition based on the change in troponin I and CK-MB level. The patients were divided into 2 groups: Group I: No elevation of cTnI (0.4ng/l) and , Group II: cTnI (>0.4 ng/l) , which was subdivided into Group IIA : with elevated cTnI + CK-MB > 25 IU/L , and Group IIB: with elevated cTnI + CK-MB 25 IU/L .

RESULTS : *New ST depression and T wave abnormalities post procedural were predictive of post procedural elevation of cardiac troponin I after PCI (p < 0.05) . Parameters of quantitative angiographic analysis of the lesions including preprocedural minimal luminal diameter (p < 0.01), diameter stenosis (p < 0.01)and post procedural minimal luminal diameter (p<0.01)) and diameter stenosis (p < 0.05) were strongly associated with post procedural cardiac troponin I elevation. Shorter stent length was also associated with cardiac troponin I elevation post cath. (p < 0.01). Positive predictive value of cardiac troponin I post procedural for early complications was 23.1 % and negative predictive value was l00%. Concordant cardiac troponin I and CK-MB elevation post procedural were strong predictors for early in hospital complications (p<0.01). Positive predictive value for concordant cTnI and CK-MB elevation for early complications was 60% and negative predictive value was 100%. No association was found between cardiac troponin 1 elevation post cath or concordant elevation of cardiac troponin I and CK-MB elevation with late adverse clinical outcome.*

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CORRELATES OF INTELLECTUAL IMPAIRMENT WITH POTENTIAL RISK FACTORS IN EPILEPTIC CHILDREN

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Abstract

Background and purpose: *Epilepsy is the most common chronic neurological disorder, with the highest incidence being in the first decade of life. Although these patients do not have socially disabling cognitive deficits, detailed neuropsychological assessments may demonstrate subtle impairments. The aim of this study is to assess the intellectual impairment in epileptic children by using the Wechsler Intelligence Scale for Children-Revised (WISC-R) and to correlate this impairment with its possible risk factors.* ***Methods:*** *The study was carried upon 28 epileptic children with idiopathic tonic-clonic seizures, 15 (53.6%) females and 13 (46.4%) males. The patients were recruited from the outpatients Neurology and Paediatric Clinics of Benha University Hospital. The age ranged between 6-16 years. Neurological history was recorded and neuropsychological assessment by using the WISC-R were done. Their results were compared with that of 20 normal, non-epileptic children (control group), included 10 (50%) females and 10 (50%) males.* ***Results:*** *Performance intelligent quotient (PIQ), verbal (V) IQ,and full scale (F)IQ were significantly lower in epileptic children compared with that in control subjects.Patients with epilepsy onset under 6 yr had a significantly lower PIQ, VIQ, and FIQ compared with that of patients with epilepsy onset ≥6 yr.Patients receiving one antiepileptic drug (AED) had a significantly higher PIQ, VIQ, and FIQ compared with those reveiving tow or more AEDs. There were a significant but negative correlations between PIQ, VIQ, and FIQ,with each of the following variables: duration of epilepsy, duration of AEDs, and frequency of seizures. In addition, there was a negative significant*

correlations between VIQ and FIQ with doses of phenytoin, also, between PIQ and FIQ with doses of carbamazepine. Regression analysis showed that there is a significant regression of different IQs on age of epilepsy onset, duration of epilepsy, duration of AEDs exposure,and on frequency of seizures. ***Conclusions:*** *Epileptic seizure itself rather than other risk factors had a detrimental effect on intellectual functions. Early age of seizure onset,long duration of illness,long duration of AEDs exposure,high doses of AEDs, polytherapy and frequency of seizures were the main predictors of deterioration of intellectual functions in epileptic children.*

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CORNEAL TOPOGRAPHIC CHANGES FOLLOWING 20G VITRECTOMY AND SCLERAL BUCKLING SURGERY. A COMPARATIVE STUDY

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Abstract

Purpose: *To Compare the effect of primary vitrectomy with that of scleral buckling surgery on the comeal elevation.*

Settings : *Department of ophthalmology. Benha University. Egypt.*

Methods: *This prospective study included 30 eyes of 30 patients, divided into 2 groups. 15 patients each. All of these patients had rhegmatogenous retinal detachment. Primary 3 ports, 20 gauge pars plana vitrectomy was done for group 1, while scleral buckling was done for group 2.*

The parameters evaluated were best-corrected visual acuity (BCVA), and corneal topographic changes using Orbscan II. The data were collected on the day of surgery, 4 weeks, and 12 weeks postoperative.

Resultes : *The preoperative anterior comeal elevation was 0.005 ± 0.001 for group 1 and 0.005±0.002 for group 2. The postoperative anterior corneal elevation for group 1 was 0.007±0.003 and 0.005±0.002, while that of group 2 was 0.018±0.005 and 0.012±0.005 at 4-weeks and 12-weeks respectively. The preoperative posterior comeal elevation was 0.013 ± 0.002 for group 1 and 0.012±0.003 for group 2. The postoperative posterior corneal elevation was 0.032+0.003 and 0.019+0.003. while that for group 2 was 0.035±0.006 and 0.024±0.005 at 4-weeks and 12-weeks re-spectively. The preoperative simulated keratometry (Sim K) for group 1 was 0.95±0.2 D and 0.9&plusmn0.29 for group 2. The postoperative Sim for group 1 was 1.38±0.25 D and 1.1±0.24, while that for group 2 was 2.47±0.5 and 1.52±0.29 at 4-weeks and 12-weeks respectively.*

Conclusion : *vitreoretinal surgeries caused a significant increase in*

corneal elevations that is more in the posterior comeal elevation than the anterior comeal elevation. Vitrectomy causes less comeal topographic changes in relation to scleral buckling.

Key Words: *Comeal topography, Vitrectomy. Scleral buckling, Corneal elevation.*

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CLOSED RETROGRADE LOCKED NAILING OF THE DIAPHYSEAL HUMERAL FRACTURES

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Abstract

Locked intramedulary nailing of humeral shaft fractures combines the advantages of intramedulary nailing with the added fixation of locked principles allowing for the extension of indications of interlocked nailing as in comminuted fractures. Also the interlocking nailing is superior to plating of diaphyseal fractures as it is a load sharing and control of bending stresses. In addition , the closed technique preserves the soft tissue blood supply and the fracture haematoma preserving the biologic process of fracture healing undisturbed. With retrograde technique most of the complications related to the shoulder joint and rotator cuff violation can be avoided. Fourteen patients with humeral shaft fractures had been treated by retrograde closed locked nailing using interlocking humeral nails. The average follow up period was four months (range from 3 to 10 months). The average healing time of all fractures was eight weeks. After consolidation, the elbow function was excellent in twelve patients (85.7%), the shoulder function was excellent in thirteen patients (92.9%). The functional end results were excellent in nine patients (64.2%), good in three patients (21.4%), fair in one patient (7.1%), and poor in one patient (7.1%). two patients (14.2%) had postoperative radial nerve palsy. There was comminution at the fracture site in three cases. There was one case (7.1%) of deep infection. Two patients (14.2%) had shortening and one case (7.1%) had varus deformity. There were no cases with implant failure. We concluded that closed retrograde locked nailing of fractures of the humeral shaft is an excellent method of fixation with added benefit over antegrade nailing that it does not affect the shoulder movement or disturb the rotator cuff insertion site.

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PCR FUNGAL MASILLARY SINUSITIS IN CHRONIC MYELOID LEUXEMIA

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Abstract

Background : Fungi have been increasingly recognized as important pathogens in sinusitis. Fungal infection, mainly by moulds, can impose a severe acute and chronic sinusitis in the immunocompromised host as chronic myeloid leukemia.

Polymerase Chain Reaction (PCR) is an important tool in diagnosis of fungi even in small amount in the secretions.

Objective(s) : is to detect the causative pathogenic fungi in chronic maxillary sinusitis in cases of chronic myeloid leukemia patients by using PCR technique.

Patients and Methods : 20 patients of chronic myeloid leukemia suffing from maxillary sinusitis and 20 pathients with chronic maxillarry sinusitis not suffering from any immunocompromised disease were used as control group, both groups were subjected to intranasal antrostomy then, antral lavage were subjected to fungal culture and PCR techniques.

Results (S) : PCR detect 80% positive fungi in test group but there was negative in control group, Aspergillus spp., A. fumigatus and Penicillium spp. and Candida were present in positive cases, 20% of cases were detected by simple fungal culture.

There is significant difference between PCR and fungal culture ($P<0.05$).

Conclusion (s) : PCR technique is sensitive tool in diagnosis of fugal infection in chronic maxillary sinusitis in patients with chronic myeloid leukemia; PCR is superior to ordinary fungal culture and can detect funji even in small amount of fungal spores, Aspergillus spp., A. fumigatus and

Penicillium spp. and Candida albicans were present in cases of chronic myeloid leukemia with sinusitis.

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CHROMOGENIC IN-SITU HYBRIDIZATION (CISH) AS A POTENTIAL ECONOMIC TOOL IN DIAGNOSTIC PATHOLOGY

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Abstract

PURPOSE OF THE WORK : *Chromogenic in-situ hybridzation (CISH) is a molecular cytogenetic technique that utillzes non-fluorescent molecules as reporters for the detection of molecular alterations. The clinical experience with CISH is limited. The present study aimed to evaluate the possibility of utilization of CISH in routine pathology laboratory setting.*

MATERIALS AND METHODS : *A total of 177 different tumors and 10 different control tissues collected from three different laboratories were tested. Two tumor cell lines were used for validation studies. Both commercial and in-house CISH probes were utilized for in-situ hybridization.*

RESULTS : *CISH correlated strongly with the more established fluorescent in-situ hybridization technique. Tissue fixation and processing was crucial for the efficiency of CISH hybridization. There was marked variation in the efficiency of hybridization of different tissue types, most prominent in the timg required for tissue pre-treatment. Also there was variation in the efficiency of hybridization of the same tissue type from different sources.*

CONCLUSIONS : *CISH is a useful alternative for detection of molecular genetic abnormalities in routinely fixed tissue. However, tissue flxation and processing is crucial for success of in-situ hybridization experiments and implementing a uniformly utilized flxation and processing protocols is essential.*

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ASSESSMENT OF THE RELATION BETWEEN SERUM-ASCITES ALBUMIN CONCENTRATION GRADIENT WITH ESOPHAGEAL VARICES AND ITS COMPLICATION

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Abstract

OBJECTIVE: We aimed to evaluate the correlation between serum-ascites albumin concentration gradient (SAAG) with esophageal varices (EV) presence and grading, and to assess the relationship between SAAG measurements and the occurrence of gastrointestinal hemorrhage in cirrhotic patients with ascites. METHODS: Our study included 45 non-alcoholic cirrhotic cases with ascites. They had routine clinical, ultrasonographic and laboratory investigations including ascitic fluid analysis. They had measurement of SAAG computed. An upper gastrointestinal endoscopy was done in all cases to assess the presence and size of EV. RESULTS: 36 of our patients (80%) had EV. The mean SAAG level was 1.46 ± 0.27 gm/dL for all cases. No correlation was found between SAAG and any of the studied clinical or biochemical parameters. By using the ROC Curve, a SAAG value at a level of (≥1.55gm/dL), was a good predictor of the presence of EV with 100% sensitivity and 71.4% specificity. The presence of EV was positively correlated with serum bilirubin, prothrombin time (PT), and spleen size. Meanwhile, it was negatively correlated with serum albumin, serum total protein, platelet count and total protein in ascetic fluid. On univariate analysis of variants associated with the presence of large esophageal varices, only the presence of splenomegaly could predict high grade varices. On comparing patients with and without bleeding varices, the EV grade, portal vein diameter (PVD), spleen size and creatinine level were significantly higher in the group of bleeding

varices [p values were 0.002, 0.006, 0.01 and 0.012 respectively]. CONCLUSION: A SAAG score (≥1.55 gm/dL) is a useful predictor of the presence of EV in cirrhotic patients with ascites. This finding can assist clinicians in determining the urgency of care and referral for upper gastrointestinal endoscopy in cases with ascites. Meanwhile, SAAG was not valuable in screening and predicting complications, such as bleeding from esophageal varices.

Keywords: Ascites, Serum-ascites albumin concentration gradient (SAAG), Hematemesis, Esophageal varices (EV), Portal Hypertension (PHTN).

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HEALTH STATUS OF PETROLEUM WORKERS

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Abstract

The continuing expansion of oil industry in Saudi Arabia is leading to a rapid rise in the number of workers in this sector of industry. This study aims to assess health status of three groups of workers (on-shore, off-shore and office workers) in ARAMCO Petroleum Company during their annual routine health check-up. The study revealed that all health problems studied, except obesity, are more prevalent among on-shore and off-shore workers than office workers. Furthermore, most of these hazards are more frequent among off-shore than on-shore workers. Non-fatal work-related injuries, upper and lower respiratory tract problems; skin infections and dermatitis; neuro-psychiatric problems, dental problems; gastro-intestinal as well as eye problems are more frequent among field petroleum workers, especially off-shore group, than the office workers.

Health care personnel caring for these workers are advised to be aware of the possible adverse health effects from work environment. Special emphasis should be given to fire and injury prevention and control, use of protective equipment. Reducing hours of work and bringing families in cities nearer to the place of work may be of value in reducing the medical and psychological health hazards among petroleum workers. Psychological assessment should be an integral part of annual medical check-up of these workers. Further epidemiological research, with environmental measurement and easy access to the available registered data, on the potential hazards of oil industry are highly recommended.

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FIXATION OF SUBTROCHANTERIC FEMORAL FRACTURES : A REVIEW OF TWO DIFFERENT METHODS OF TREATMENT

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Abstract

A review of twenty two cases of comminuted Subtrochateric fracture of the femur treated by two different methods is presented.

Seven Cases were treated by Russel Taylor intramedullary nail and 15 cases by DHS according to the fracture geometry.

The average follow up period was 19.4 weeks (11-30)

The average time to union was 14.2 weeks (10-21)

No major complications were encountered

It had been concluded that if technical details &

proper indication for each type of treatment are respected the outcome will be satisfactory.

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PREVALENCE AND RISK FACTORS OF ABNORMAL URINARY ALBUMIN EXCRETION AMONG CHILDREN WITH INSULIN DEPENDANT DIABETES

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Abstract

Microalbuminuria is an important early marker of risk for diabetic renal disease.

In this study we aimed to detect the prevalence and risk factors for microalbuminuria among Egyptian children.

Research design: Between May 2001 and May 2005, 250 children with insulin dependant diabetes (122 boys and 128 girls) of age between 5-16 years, with duration of diabetes more than one year were included in the study. The diabetic children were assessed in the beginning and annually thereafter. The assessment includes a full medical history of the preceding year, measurement of weight, height, blood pressure, blood sample collection for measurement of HbA1c and urine sample for measurement of urinary albumin and creatinine.

We found that Over 250 diabetic children included in the study 27 (11%) patients had developed persistent microalbuminuria. Microalbuminuric patients were found to be significantly elder (median 13.5 V 10.1; $p<0.05$) but with no significant difference between both sexes. Microalbuminuria also tend to occur with longer duration of diabetes (7.7 V 5.3 years) and there is no difference in systolic or diastolic BP between microalbuminuric and normoalbuminuric patients.

The mean HbA1c value in patients with microalbuminuria is significantly higher than patients with normal albumin excretion.

We concluded that, the prevalence of microalbuminuria among our patients was 11%, so diabetic nephropathy is a major health problem that

may affect a considerable number of diabetic children. microalbuminuria tends to occur among elder patients with poor glycemic control.

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BISPECTRAL INDEX FOR EVALUATION OF RECOVERY AFTER SEVOFLURANE ANESTHESIA

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Abstract

Bispectral index (BIS) is a method of monitoring depth of hypnosis during anesthesia. Guided anesthetic administration using BIS target range may be associated with a reduction in volatile anesthetic and faster recovery. We evaluated recovery profile after sevoflurane anesthesia with and without BIS monitoring.

60 ASA I and II patients, aged 20-60 years, were enrolled in this study. Patients were divided randomly into two groups (n= 30). In group A (GA) concentration of sevoflurane was adjusted according to clinical data. In group B (GB) concentration of sevoflurane was adjusted to keep BIS reading in range of 50 ± 5. The following emergency times were evaluated: spontaneous eye opening, responding to verbal command and orientation time. Also, duration of patients stay in post anesthesia care unit (PACU) was determined and all patients were questioned about recall 24 hours after operation.

End tidal sevoflurane concentration was significantly high in GA, during maintenance until stop of inhalational agents, compared to GB. Early recovery times are shorter in GB compared to GA, but not significant. When we compared duration of patients stay in PACU to be eligible for transfer to ward, it was significantly shorter in GB. No patient can recall any events during operation.

Compared with standard anesthesia monitoring practice, adjunctive use of BIS monitoring can improve titration of sevoflurane during general anesthesia, leading to improved recovery profile and shorten the duration of stay in PACU. But, consideration of hemodynamic parameters is very

important to avoid unaccepted change in HR and MBP, especially in cardiac patients.

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SUCCINYLCHOLINE VERSUS ROCURONIUM FOR EMERGENCY RAPID SEQUENCE INDUCTION DURING REMIFENTANIL, PROPOFOL ANAESTHESIA

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Abstract

Objective: *This study aimed to evaluate and compare the intubating conditions of standard doses of rocuronium 0.6 mg kg-1 and succinylcholine 1.0 mg kg -1 during a strict rapid-sequence induction (RSI) regimen including propofol and remifentanil.*

Patients & methods: *The study included 80 male and female patients (ASA I - III) older than 17 yr scheduled for emergency abdominal surgery and with increased risk of pulmonary aspiration of gastric content. Patients were randomized to a rapid–sequence induction with succinylcholine 1.0 mg kg^{-1} or rocuronium 0.6 mg kg^{-1} after induction with remifentanil 1μg kg^{-1} and propofol 2-3 mg kg^{-1}. Patients with a predicted difficult air-way were excluded. A senior anaesthesiologist blinded for the randomization performed the intubation 60 seconds after injection of the neuromuscular blocker. Intubation conditions were evaluated according to an established guideline.*

Results: *Clinically acceptable intubation conditions were present in 95.6 % and 93.3 % of patients in the succinylcholine group (n = 40) and the rocuronium group (n = 40) respectively (p = 0.58).*

Conclusions: *during RSI with remifentanil and propofol, both recuronium 0.6 mg kg^{-1} and succinylcholine 1.0 mg kg^{-1} provide clinically acceptable intubation conditions in 60 seconds in patients scheduled for emergency surgery. Under the conditions of this RSI regimen rocuronium my be a substitute for succinylcholine.*

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IMPACT OF NALOXONE AND DROPERIDOL ON POSTOPERATIVE EPIDURAL MORPHINE ANALGESIA

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Abstract

This study was designed to evaluate the impact of epidural naloxone (N) or droperidol (D) on the outcome of epidural morphine analgesia. The study comprised 60 females assigned to undergo abdominal hysterectomy randomly allocated into three equal groups (n=20), each received medication mixture via infusors; Group M received 3 mg morphine in 100 ml bupivacaine 0.125% at rate of 2 ml/hr; group M+N and M+D received the same mixture, but with the addition of naloxone so as to provide an infusion rate of 0.167 μg/kg/hr of naloxone in group M+N or droperidol in a dose of 1.25 mg/day continuous infusion in group M+D. Pain sensation was evaluated using 100-mm visual analogue scale, postoperative nausea and vomiting (PONV) was monitored on a four-point scale: 0: no, 1: mild not requiring an antiemetic, 2: moderate requiring an antiemetic and 3: severe nausea/vomiting, resistant to antiemetic. Pruritus was evaluated using a four-point scale: 0=no, 1= mild, 2 moderate & 3= severe itching. Somnolence was graded as follow: 1=clear mentality, 2= good response to verbal command but drowsy & 3= poor response to repeated verbal command. Respiratory depression was assessed as 1= no respiratory depression & 2= respiratory depression exists with a respiratory rate<8 breaths/min. All parameters were assessed at 2, 4, 8, 16, 32, and 48 hr PO. At 8-hrs PO, VAS scores were significantly lower in M+N (P1 =0.017) and M+D (P1 =0.034) groups compared to group M., with a non-significant (P2>0.05) reduction of VAS scores between combination

groups but in favor of group M+N. Thereafter, VAS scores were significantly lower in groups M+N and M+D compared to group M with a significant reduction of VAS scores in group M+N compared to group M+D. Epidural naloxone (Group M+N) significantly reduced the frequency and severity of side effects in comparison to group M and significantly reduced the frequency and severity of somnolence and respiratory depression and non-significantly reduced the frequency and severity of PONV in comparison to group M+D. On the other hand, epidural droperidol (Group M+D) significantly reduced the frequency and severity of pruritus and respiratory depression but reduced the frequency of PONV and somnolence non-significantly in comparison to group M. Moreover, epidural droperidol significantly reduced the frequency and severity of pruritus compared to epidural naloxone. It could be concluded that epidural co-administration of morphine and naloxone or morphine and droperidol provided more effective postoperative analgesia with a significant reduction of morphine-induced side effects; however, droperidol appears to be a better alternative when pruritus is taken into consideration, while naloxone is a better alternative when somnolence is taken into consideration.

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INTRAVENOUS DEXMEDETOMIDINE IS EFFICIENT PROPHYLAXIS AGAINST POST-ANESTHESIA SHIVERING WITH RESCUE-TREATMENT SPARING EFFECT : A COMPARATIVE PLACEBO-CONTROLLED STUDY VERSUS MEPERIDINE AND KETAMINE

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Abstract

This study aimed to evaluate the effect of dexmedetomidine and ketamine on the frequency and severity of post-anesthetic shivering (PAS) in comparison to meperidine as negative and saline as positive control drugs. The study comprised 80 patients assigned to undergo abdominal or pelvic surgery under general anesthesia. Patients were randomly allocated into 4 equal groups (n=20) received intravenous injection of either saline (Group S), meperidine 20 mg (Group M), ketamine 0.5 mg/kg (Group K) or dexmedetomidine 1 μg/kg (Group D), all drugs were given as a 10-ml injection, 20 minutes prior to the end of surgery. In post-anesthesia recovery unit (PACU), all patients were monitored non-invasively for heart rate, blood pressure, oxygen saturation and core temperature measured at the tympanic membrane using an ear thermometer (Thermoscan IRT 3020; Braun, Kronberg, Germany). Post-anesthetic recovery was scored using the Observer's Assessment of Alertness/ Sedation (OAA/S) score on arrival to PACU. The severity of PAS was evaluated using five grades scale; on admission to PACU (T0), 10 min (T10), 20 min (T20) and 30 min (T30) after admission. Nefopam was given 10 mg IV at PAS score of ≥2. Any possible side-effects of the study drugs were recorded. In group S, 18 patients had PAS; 15 required treatment but 3 patients did not require and the other 2 patients had no PAS. In group K, 11 patients had PAS score of zero, 6 patients had PAS scored one and the other 3 patients had PAS scored ≥2 and required treatment. Only 3 patients; 1 in group M and 2 in group D had PAS scored one but

no patient required treatment. There was a significant difference in the frequency of PAS and need for treatment between groups M and D compared to both group S and K. Moreover, there was a significant difference in the frequency of PAS and need for treatment between groups K and S. Eight patients (10%) had postoperative nausea and vomiting with a non-significant difference between studied groups and 2 patients in group K had mild hallucinations. It could be concluded that dexmedetomidine (1μg/kg) intravenous injection 20 minutes prior to end of surgery significantly reduced post-anesthetic shivering and completely spared the use of postoperative rescue medications.

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ASSESSMENT OF SERUM HYALURONIC ACID AND N-ACETYLGLUCOSAMINE LEVELS IN CHRONIC HEPATITIS C PATIENTS

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Abstract

Background and aim: *Knowledge of the stage of liver fibrosis is essential for prognosis and decisions on antiviral treatment. Liver biopsy is currently the gold standard in assessing the liver histology. There is an increasing desire for non-invasive tests to assess the stage of liver fibrosis or cirrhosis. Serum hyaluronic acid (SHA) and N-acetylglucosamine (NAG) could be a hope for clinicians to diagnose or exclude fibrosis and cirrhosis. Therefore, the present study was done to assess SHA and NAG levels in chronic hepatitis C (CHC) patients and to determine the cut off values of these markers to predict fibrosis or cirrhosis.* ***Subjects and Methods:*** *The present study was conducted on 89 subjects (20 controls and 69 CHC patients). The HCV infection was diagnosed based on positive HCV antibodies and positive HCV-RNA. Percutaneous–ultrasound-assisted liver biopsies were done for all patients and assessed by the METAVIR scoring system. According to the results of the liver biopsy, the patients were classified into 3 groups. Group I included 15 patients without fibrosis (F0). Group II included 35 patients with significant fibrosis (F1-F3). Group III included 19 patients with cirrhosis (F4). SHA levels were determined using enzyme-linked binding protein assay Kits and NAG levels were assayed by reverse phase-high performance liquid chromatography (RP-HPLC).* ***Results:*** *There were highly significant elevations of SHA and NAG in patient group when compared to the control group. Moreover levels of SHA and NAG increase with the extent of fibrosis. SHA with cut off value of less than 25 ng/ml was used to exclude fibrosis or cirrhosis with a sensitivity of 68% and specificity of 58%. SHA*

with cut off value of more than 200 ng/ml was used to detect significant fibrosis with sensitivity of 93% and specificity of 95%. SHA with cut off value of more than 350 ng/ml was used to detect cirrhosis with sensitivity of 92% and specificity of 100%. NAG with cut off value of less than 25 ng/ml was used to exclude fibrosis or cirrhosis with sensitivity of 60%, specificity of 55%. NAG with cut off value of more than 40 ng/ml was used to detect significant fibrosis with sensitivity of 90% and specificity of 92%. NAG with cut off value of more than 55 ng/ml was used to detect cirrhosis with sensitivity of 90% and specificity of 86%. SHA and NAG were correlated negatively with serum albumin, prothrombin concentrations and platelet count and positively with the degree of fibrosis. ***Conclusion:*** *Serum hyaluronic acid and N-acetylglucosamine are highly valuable and informative in detection of significant fibrosis and cirrhosis while they are of limited value in exclusion of minimal fibrosis.*

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SERUM LEPTIN IN END-STAGE RENAL DISEASE PATIENTS ON HEMODIALYSIS : ITS VALUE AS A MALNUTRITION MARKER

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Abstract

Background and Aim: *Leptin is a protein hormone secreted by adipocytes in proportion to the amount of body fat and exerts sustained inhibitory effects on food intake while increasing energy expenditure. It has been reported that serum leptin levels are high in patients with chronic renal failure and may have a potential impact on the development of uremic cachexia. The present study aimed to evaluate serum leptin level and its relation to markers of malnutrition in non diabetic patients with end-stage renal disease (ESRD) treated with hemodialysis.*

Methods : *Serum leptin level was measured in 48 ESRD patients (30 males and 18 females) on regular hemodialysis, and in 20 healthy control subjects. The nutritional status was checked by anthropometric measurements [body mass index (BMI) and triceps skin fold thickness (TSFT)] and laboratory data (hemoglobin, hematocrite, serum albumin, pre-albumin, total protein, and blood urea nitrogen). Patients were included if they were on hemodialysis for more than one year, anuric, had normal C reactive protein values and had no history of diabetes mellitus, liver disease or chronic pulmonary disorders.*

Results: *The mean serum leptin level was higher in ESRD patients (28.5 ± 15.3ng/ml) compared to the control (5.2 ± 3.8ng/ml; $P<0.001$). The indices of hematological and protein-energy malnutrition were evident in hemodialysed patients compared to controls. The mean serum leptin was significantly higher in male patients compared to the male control group (11.5 ± 4.7 vs 3.2 ± 2.1ng/ml, $P<0.01$). Also, serum leptin was significantly higher in the female patients compared to the female control group*

(35.8±12.1 vs 12.7±4.5ng/ml, P<0.001). The mean BMI for female patients was significantly higher than male patients (24.4±4.1 vs 21.1±5.6kg/m2, P<0.04). The mean TSFT for female patients was significantly higher than male patients (13.8±3.2 vs 10.7±2.2mm, P<0.05). A positive correlation was found between the TSFT and leptin, both in male (r=0.44, P<0.03) and female patients (r=0.71, P<0.01). Also, there was a positive correlation between the BMI and leptin both in male (r=0.41, P<0.02) and female patients (r=0.67, P<0.01). No correlation was observed between serum leptin with the length of time on dialysis, total protein, serum albumin, pre-albumin, hemoglobin, hematocrite, creatinine and blood urea levels.

Conclusion: *Serum leptin is markedly elevated in patients with ESRD on hemodialysis. It is significantly correlated with the BMI and TSFT and could be utilized as a potential indicator of malnutrition in these patients. Further studies may provide a therapeutical approach aiming to neutralize serum leptin levels or blocking its effect on the hypothalamus to prevent uremia-associated malnutrition.*

Key word : *Leptin - renal failure - malnutrition.*

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T LYMPHOCYTE ACTIVATION AND EXPRESSION OF COSTIMULATORY MOLECULES IN INTESTINAL ASCARIASIS

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Abstract

This study was carried on 48 patient with Ascriasis and 12 cross matched healthy control persons. All the studied cases were submitted to flow cytometric analysis of peripheral blood mononuclear cells using monoclonal antibodies against CD3, CD4, CD8, CD28, HLA-DR. In this study, there was a significant decrease in CD3, CD4 and expression of costimulatory molecule CD28 on CD8 T lymphocytes but the decrease in CD8 T lymphocytes was insignificant, while the activation marker HLA-DR expression on CD4 T lymphocytes was increased.

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T LYMPHOCYTE ACTIVATION AND EXPRESSION OF COSTIMULATORY MOLECULES IN FILARIAL ELEPHANTIASIS

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Abstract

This study was carried in 48 patients with positive blood films for W. bancrofti microfilaria and 12 cross matched healthy control persons. All the studied cases were submitted to flow cytometric analysis of peripheral blood mononuclear cells using monoclonal antibodies against CD3, CD4, CD8, CD28, HLA-DR.

In this study, there was a significant decrease in CD3 and CD4 T lymphocytes but the changes in CD8 T cells and CD28 expression on CD8 T lymphocytes was insignificant while the activation marker HLA-DR expression on CD4 T lymphocytes was increased.

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T-LYMPHOCYTES ACTIVATION AND EXPRESSION OF COSTIMULATORY MOLECULES IN HUMAN TOXOPLASMOSIS DURING PREGNANCY

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Abstract

The study was carried on 48 pregnant patients with positive sera for Toxoplasma antibodies (IgG, IgM) and 12 cross matched healthy control pregnant women. All studied cases were submitted to flow cytometric analysis of peripheral blood mononuclear cells (PBMNCs); using monoclonal antibodies (MAbs) against CD3, CD4, CD8, CD28 and HLA-DR. Results revealed that, there was a significant decrease in CD4 and the expression of co stimulatory molecule CD28 on CD8 T lymphocytes, while the activation marker HLA-DR expression on CD4 T lymphocytes was significantly increased, but the changes in CD3 and CD8 T lymphocytes were insignificant.

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ENDOSCOPIC TRANS-SEPTAL CHOANOPLASTY FOR CONGENITAL CHOANAL ATRESIA

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Abstract

Objective: *To describe endoscopic trans-septal approach for treatment of choanal atresia.*

Study Design: *Prospective case series in a tertiary care center.*

Patients and Methods: *Seventeen patients (7 with bilateral and 10 with unilateral choanal atresia) underwent trans-septal endoscopic choanoplasty. Removal of the vomer and shaving of the medial pterygoid plate were achieved by a small chisel with the use of a 4-mm 0^o telescope. Nasal stents were not used following creation of the neochoanae. All cases were examined with the endoscopes 4 weeks postoperatively and any granulations or polyps at the site of the neochoanae were removed at that time.*

Results: *One year postoperatively, 16 (out of 17) patients had patent neochoanae. Granulation tissues were encountered in three cases and successfully managed on routine endoscopic examination.*

Conclusion: *Endoscopic trans-septal approach is a direct, wide and safe one day surgery for repair of choanal atresia.*

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RECONSTRUCTION OF SUBTOTAL AND TOTAL TYMPANIC MEMBRANE PERFORATIONS USING CARTILAGE PALISADE TECHNIQUE

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Abstract

Objective: *The purpose of this study was to evaluate the use of palisade cartilage technique for reconstruction of subtotal and total tympanic membrane (TM) perforations compared with temporalis fascia (TF) graft.*

Study Design: *Prospective study consists of ninety five patients suffering from chronic inactive suppurative otitis media with subtotal and total TM perforations. The patients underwent full history taking, clinical examination and audiological evaluation. The patients were classified into two groups: group A (75 patients) in whom cartilage palisade technique was used and group B (20 patients) in whom TF graft was used.*

Results: *Closure of TM perforation was achieved in 71 patients (94.6%) of group A and in 7 patients (35 %) in group B. As regards hearing results, there was highly significant postoperative improvement in pure tone averages as well as air-bone gap averages in both groups. In group A, the air-bone gap was closed to less than 10 dB in 26.6 % and from 10-25 dB in 56% and to more than 25dB in 17.4 %. While in group B, the air-bone gap was closed to less than 10 dB in 25 % and from 10 - 25 dB in 65% and to more than 25dB in 10 %. In this study, the average pre and postoperative air-bone gap were 26.1 dB and 13 dB respectively for cartilage group and 25.3 dB and 13.1 dB for fascia group.*

Conclusion: *This study revealed that, the palisade technique is an effective, straight foreword technique with high success rate and good hearing results without postoperative complications.*

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IMPACT OF RECOMBINANT ACTIVATED FACTOR VII ON THE OUTCOME OF MASSIVE BLUNT TRAUMA PATIENTS WITH UNCONTROLLABLE BLEEDING

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Abstract

This prospective selective study aimed to evaluate the outcome of massive blunt trauma patients with uncontrollable bleeding after administration of recombinant activated factor VII (rFVIIa). All selected patients admitted to ICU once arrived to the hospital and underwent clinical evaluation using the Abbreviated Injury Scale (AIS) to calculate the Injury Severity Score (ISS). Patients were assessed hemodynamically, body temperature and arterial pH were determined. Data concerning haemostatic surgical procedures and transfused amounts packed red blood cells (PC), fresh frozen plasma (FFP) or platelet (Plt) were recorded. Patients with massive uncontrolled bleeding were infused with rFVII in a dose of 90 μg/kg and the response was observed for 15-30 minutes if necessary an additional dose of 30 μg/kg was infused and in extreme cases a third dose of 30 μg/kg was given. The need and amount of transfusion of blood products and the need and feasibility of second-look surgery and 48-hrs and 15-days mortality rates were determined. Throughout the study period, 11 trauma patients required rFVII infusion for massive uncontrollable bleeding. At time of admission; 7 patients required emergent endotracheal intubation, one required emergency tracheostomy; mean systolic blood pressure was 82 ± 6.4 mmHg and all were acidotic. Two patients had ISS score of ≥50, 8 patients had ISS score of 25-<50 and only one patient had ISS score of <25, with a mean total ISS score of 40±10. Eight patients required rFVIIa infusion for preoperative massive bleeding not responding to frequent blood product transfusion but controlled partially on surgical interference and completely after rFVIIa

infusion. In the other 3 patients, bleeding was uncontrollable during surgery and patients underwent packing and received rFVIIa infusion to be prepared for second-look surgery that was feasible after rFVIIa infusion. The mean number of transfused PC, FFP and plt throughout 48 hours after rFVIIa infusion were significantly reduced. Eight patients required infusion once, 2 patients had twice infusion and received 120μg/kg and only one with massive bleeding required infusion for 3 times and received 150μg/kg. One patient developed multiple organ failure (MOF) and died at 36 hours after rFVIIa infusion with a mortality rate at 48-hr after infusion of 9.1%. Another patient developed adult respiratory distress syndrome and MOF and died 8 days after infusion and a third patient with severe head injury and multiple depressed fractures died 9 days after infusion with a total mortality rate at 15-days after infusion of 27.3%. One patient developed acute renal failure that required hemodialysis and discharged 32 days after infusion. The mean duration of ICU stay was 12.9±8.3 days. In conclusion, rFVIIa infusion in massive trauma patients with uncontrollable bleeding significantly reduced blood product transfusion and allowed second-look surgery with reduction of ICU stay duration and post-trauma mortality.

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PREVALENCE OF HEPATIC STEATOSIS IN EGYPTIAN PATIENTS WITH CHRONIC HEPATITIS C (CHC) VIRUS INFECTION AND HISTOPATHOLOGICAL CORRELATION

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Abstract

Aim and Background: *Hepatic steatosis is a histological characteristic in patients with chronic hepatitis C (CHC) virus infection. It has been proposed that hepatic steatosis is a cytopathic effect of hepatitis C virus genotype 3a, but not other genotypes. Several studies have demonstrated that more than 90% of (CHC) patients in Egypt are infected with genotype 4. To our knowledge there is no enough data about the prevalence of steatosis in genotype 4. The aim of study was to evaluate the prevalence of hepatic steatosis in Egyptian patient with (CHC) genotype 4 and looking for possible correlation with various biochemical and histopathological variables.*

Methods: *This study was carried out on 153 patients, with proved chronic hepatitis C (CHC) (positive HCV antibody and HCV RNA), the patients were excluded if they have concomitant hepatitis B infection, liver cell failure, severe renal, heart disease or history of alcohol abuse. Biochemical and histopathological findings were compared between patients with and without hepatic steatosis.* ***Results:*** *Steatosis was found in 73 patients (47.7%), 40 of them (54.8%) had mild steatosis, 21 (28.8%) and 12 (16.4%) had moderate and severe steatosis respectively. No significant differences in level of total serum bilirubin, level of ALT, AST and serum albumin were found among patients with hepatic steatosis and patients without. Histopathological study showed that patients with hepatic steatosis had higher mean fibrotic score and higher mean necroinflammation grading than patients without hepatic steatosis (3.33 ± 1.49 Vs 2.92 ± 1.84), (6.96 ± 2.26 Vs 6.04 ± 2.64) but with no statistically significant difference. There was no significant statistical differences in the mean age, level of ALT, AST, Serum bilirubin and S. albumin with the increase of*

grade of steatosis. ***Conclusion:*** *Steatosis is a feature of CHC Genotype 4 in almost 50% of patients and half of them had moderate to severe steatosis, no significant correlation were found between steatosis and necroinflammatory changes or the meanfibrotic score although steatosis was associated with higher mean necroinflammation score and high mean fibrotic score but without significant statistical difference.*

Abbreviations: CHC: *chronic hepatitis C,* ***AST:*** *Asparatate transaminase,* ***ALT:*** *alanine tranaminase.*

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COMPARITIVE STUDY BETWEEN DIFFERENT TYPES AND SIZES OF LARYNGEAL MASK IN SPONTANEOUS VENTILATION AS REGARD TO POSTOPERATIVE MORBIDITY

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Abstract

The aim of this study was to identify the relationship between laryngeal mask airway (LMA) size and shape and pharyngolaryngeal morbidity after the use of a large (size 5 in males and size 4 in females) or small (size 4 in males and size 3 in females) and the use of proseal laryngeal mask.One hundred and fifty patients were included in this study. One hundred patients were allocated to insertion of a large or small LMA while breathing spontaneously during general anaesthesia. Another 50 patients (25 male and 25 femal) were allocated to insertion of the streamlined pharynx airway (proseal LMA). The 2- and 24-h postoperative incidence of sore throat, pain, hoarseness, dysphagia, nausea and vomiting were assessed. After LMA removal, complications, as body movement, coughing, retching, regurgitation, vomiting, biting on the LMA, bronchospasm, laryngospasm, or the presence of blood on the LMA, were recorded. The use of a large LMA was associated with a higher incidence of sore throat in both sexes (20%vs. 7% in men, 21%vs. 5% in women;P < 0.05) 2 hour postoperative and at 24 h postoperatively a higher incidence of sore throat occurred in male patients (26%vs. 12%, P < 0.05). Also a higher incidence of hoarseness occurred in male patients at 2 h postoperatively (21%vs. 9%, P < 0.05). There were no difference in the incidence of complications of LMA removal such as difficulty swallowing, drinking, and eating, or nausea and vomiting, between male or female groups at any time period with the use of a large LMA.The use of the proseal laryn-

geal mask was without complaining of sore throat nor presence of blood on it upon removal.Insertion of this airway proved to be no more difficult than inserting a LMA. On conclusion; the use of a small laryngeal mask airway (size 4) in spontaneously breathing male patients and (size 3) in female patients and the proseal LMA may be more appropriate to decrease the incidence of sore throat on the first postoperative day.

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MITRAL VALVE RE-REPLACEMENT THROUGH RIGHT ANTEROLATERAL THORACOTOMY: A RAPID, SAFE AND EFFECTIVE TECHNIQUE IN EMERGENCY CASES

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Abstract

Background: *Mitral valve surgery is increasingly performed through small thoracotomies. This study reports our experience with mitral valve re-replacement through right anterolateral thoracatomy in emergency cases of mitral prosthetic occlusion.*

Patients and methods: *Between June 1999 and December 2006, 46 patients (27 females & 19 males, aged 36.5 ± 15.5 years) suffering acute prosthetic mitral valve malfunction underwent mitral valve re-replacement through right anterolateral thoractomy without aortic cross clamping.*

Results: *Mean time from skin incision to on bypass was 8 ± 1.5 minutes. Bypass time was 90.5 ± 15.7 minutes.*

Theatre time averaged 165 ± 35.5 minutes. We had only one (2.2%) in hospital mortality. No cases were explored for bleeding. No cases suffered strokes, only minor neurological problems related to brain oedema occurred in 2 cases (4.4%). In one case (2.2%), we had to repair femoral artery using Gore-tex tube interposition due to trauma related to femoral cannulation. All survivors were in NYHA class I-II althrough the follow up period that extended for a mean time of 40.5 ± 15.3 months. Predischarge Echodoppler parameters were satisfactory in all cases.

Conclusion: *Mitral valve re-replacement through right anterolateral thoracotomy is an effective & safe way of management of mitral valve prosthetic malfunction.*

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SURGICAL MANAGEMENT OF ENDOBRONCHIAL TUMORS: ANALYSIS OF 24 PATIENTS

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Abstract

Objectives: *to evaluate the variable surgical options performed in the management of endobronchial tumors and the factors determining selection of the appropriate surgical technique.*

Methods: *Retrospective study of a series of 24 patients with endobronchial tumors who were diagnosed and underwent surgery in the cardiothoracic surgery department, Mansoura university hospital from January 1985 to March 2006. Full history taking and complete clinical examination, routine laboratory investigations, chest x-ray, and computerized tomography, and bronchoscope were done for all cases. Surgery was the line of treatment for all patients.*

Results: *Close sex distribution with age ranges from 20-64 years. Cough with expectoration was the main presentation. Zonal opacity was the most common radiological finding. CT chest showed sensitivity of 79.2% for detection of endobronchial lesions. Bronchoscopic examination revealed endobronchial lesions in all patients. Benign tumors were detected in 5 patients and malignant lesions in 19 patients, 14 patients were neuroendocrine tumors and 5 patients were other malignant varieties. Surgical interference included bilobectomy (7 patients), lobectomy (5 patients) pneumonectomy (7 patients), and one patient underwent surgical exploration for open biopsy while 4 bronchoplastic procedure were performed.*

Conclusion: *Endobronchial tumors occur over a wide range of age without significant sex differentiation. Endobronchial tumor should be suspected in case of prolonged chest complaint inspite of maximal medi-*

cal treatment. Bronchoscope is the main diagnostic tool and is important for detection of the provisional plane for surgery. Early diagnosis and screening should be established for early detection of endobronchial tumors and more conservative resectional and bronchoplastic techniques.

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THE EFFECT OF NITROGLYCERIN ADDITION TO ROPIVACAINE ON POSTOPERATIVE ANALGESIA IN INTRAVENOUS REGIONAL ANAESTHESIA

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Abstract

Background: *Intravenous regional anaesthesia (IVRA) is ideal for short operative procedures of upper and lower extremities performed on an ambulatory basis. The aim of this study is designed to evaluate the effect of NTG on intraoperative, postoperative analgesia, sensorial and motor block onset and recovery times, and tourniquet pain when added to ropivacaine for IVRA.* ***Patients and methods:*** *This prospective study was carried out on thirty adult patients (ASA I or II), scheduled for elective tendon release at Mansoura Emergency Hospital. The patients were randomly assigned in to two groups (15 patients of each). According to the drug injected in IVRA, (group R, ropivacaine group, control group): ropivacaine 0.2% diluted with saline to a total dose of 40ml and (group RN, study group): 200μg NTG plus ropivacaine 0.2% diluted with saline to a total dose of 40ml. Sensory and motor block onset and recovery times were recorded . Hemodynamic variables and torniquet pain(by visual analog scale score) were monitored before and after torniquet inflation . After torniquet deflation, visual analog scale score , time to first request of analgesia , total analgesic consumpation in the first 24 hours after operation and side effect were noted.* ***Results :*** *Sensory and motor block onset times were statistically shorter and sensory , motor block recovery times were statistically prolonged in RN group than R group . The onset of tourniquet pain was significantly delayed and the duration of postoperative analgesia significantly increased in RN group in comparison to R group.*

The intraoperative and postoperative analgesic requirements were less in RN group than that used in R group. Intraoperatively, there was a significant decreased in VAS in RN group at 30 min, 45 min when compared with R- group and a significant increased in VAS in R-group at 30, 45, 60 min when compared with the basal value. Postoperatively, VAS significantly decreased in RN when compared with R group and a significantly increased in Rgroup when compared with the basal value at four hours. Anaesthesia quality determined by the patient and the surgeon were found statistically better in RN group than R group. There was no recorded any side effects in both groups postoperatively. ***Conclusion:*** *the addition of NTG to ropivacaine in IVRA shortened sensory and motor block onset times, prolonged sensory and motor block recovery times, and improved tourniquet pain while increasing the duration of first analgesic requirement and decreasing total analgesic consumption without side effects.*

Key words :Intravenous regional anaesthesia,ropivacaine, nitroglycerin

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PREMEDICATION WITH LOW-DOSE ORAL MIDAZOLAM REDUCES THE INCIDENCE OF EMERGENCE AGITATION IN PAEDIATRIC PATIENTS AFTER SEVOFLURANE ANAESTHESIA

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Abstract

Sevoflurane is a volatile anaesthetic agent with low pungency, non-irritating odor, and low blood/gas partition coefficient that makes it an attractive alternative to halothane. However, a high incidence of emergence agitation (EA) has been reported in paediatric patients after sevoflurane anaesthesia. The underlying mechanism of sevoflurane-induced EA remains unclear. Rapid recovery of consciousness (emergence) from sevoflurane anaesthesia has been proposed as one possible mechanism. It was, therefore, hypothesized that sedatives such as midazolam may counteract sevoflurane's rapid emergence and thus reduce the incidence and the severity of sevoflurane-induced EA.

This prospective, controlled, single-blinded study included 88 ASA class I or II paediatric patients scheduled for elective outpatient surgery. Patients were assigned to receive either oral midazolam (0.2 mg kg-_ as anaesthetic premedication) or saline (oral normal saline as premedication) before the conduct of anaesthesia. Induction and maintenance of anaesthesia were uniform in both groups. Induction of anaesthesia was made possible with 8% sevoflurane and N2O in 50% O2. Intubation was performed straight without the aid of muscle relaxant and the ventilator was set to maintain normocapnia. Anaesthesia was maintained with 3% sevoflurane and N2O in 50% O2 until the surgery was over. All matters of relevant time periods were recorded (induction, surgical procedure, extu-

bation and transportation). In the post-anaesthesia care unit (PACU), adverse events, the incidence and the severity of EA, analgesic requirement, duration of PACU stay, and parental as well as PACU nurses' satisfaction were evaluated.

A significant lower incidence and less severity of EA were noted in patients premedicated with midazolam. Less postoperative analgesia was required in patients who had received midazolam. Although midazolam premedicated patients remained sedated after sevoflurane anaesthesia, the duration of the PACU stay was not significantly different from that of saline-treated patients. Both parents and PACU nurses were more satisfied with midazolam as premedication.

It was concluded that premedication with oral midazolam is safe, convenient and effective in decreasing the occurrence of sevoflurane-induced Emergence agitation (EA). It does not delay discharge from PACU and is suitable for outpatient surgery.