ESSR ABSTRACTS 2010

The 45th Congress of the European Society for Surgical Research takes place this year in Geneva, Switzerland, 9–12 June 2010, under the presidency of Mustafa Cikirikcioglu, MD, PhD

Poster Session I

P1A Organ and cell Transplantation – Biomaterials and Artificial Organs 1

P1A-1 Hug’s hpp machine: a new mobile perfusion device which makes feasible nuclear magnetic resonance evaluation of perfused kidneys


Research and Development Laboratory, Vascular and Transplantation Service, University Hospital of Geneva, Geneva, Switzerland Vascular and Transplantation Service, University Hospital of Geneva, Geneva, Switzerland Service of Radiology, University of Geneva and University Hospital of Geneva, Switzerland

Objectives: With the shortage of brain dead donors for kidney transplantation, marginal donor organs are increasingly considered. The use of oxygenated hypothermic perfusion (O-+HPP) machine has been clearly associated with improved transplant function. Moreover, if cold static storage (CSS) comes after a long warm ischemic time (WIT) and then followed by HPP, HPP had a deleterious effect on tissue structure. Hence the necessity of a mobile system to perfuse kidney immediately once removed. To date, renal vascular pressure is the most helpful functional parameter for kidneys during perfusion but is still discussed. Consequently better viability assessment is required. As shown lately, Magnetic Resonance Imaging (MRI) and Magnetic Resonance Spectroscopy (MRS) provide unique physiological insight non-invasively.

Methods: We have developed a safe pneumatically controlled system able to perfuse kidneys under specific conditions related to NMR. The perfusion module is made so as to receive two kidneys.

Results: Polystyrene flow (between 50 and 15 mmHg pressure) is supplied thanks to a pneumatic pump. The entire device is moveable. The perfusion module and its “ligature” made of ice can be separated with a 7 meters long “umbilical cord”. The perfusate, (KPS-1), is maintained between 2 and 4°C under oxygen partial pressure of > 100 kPa through a hollow fiber oxygenator. MR/MRS is performed with home made 3T interface and surface coil.

Conclusions: There are in the market a number of machines, but none have incorporated the possibility of a NMR diagnosis. HUG’S HPP machine is a helpful tool to measure the physiological state of the marginal kidneys and thereby enlarging criteria of acceptability for such organs as well as improving their postoperative functions.

P1A-2 Experimental study of the salvypump system for pulsatile perfusion in cardiopulmonary bypass


Cardiovascular Surgery Department, Clínica Universidad de Navarra, Pamplona, Spain Institute for Research and Innovation in Bioengineering, Universidad Politécnica de Valencia, Valencia, Spain Research and Development Department, Mercè V. Electromedicina S.L., Valencia, Spain Hematology Department, Clínica Universidad de Navarra, Pamplona, Spain Pathology Department, Clínica Universidad de Navarra, Pamplona, Spain

Objectives: To assess the platelet dysfunction and damage to organs after extracorporeal circulation using the Salvypump pumping system (Mercè Electromedicina, Valencia, Spain). This pump provides a continuous flow by means of a centrifugal mechanism, and adds a pulsatile component by means of a pulsating inner membrane, which is pneumatically controlled by an intra-aortic counterpulsation balloon console.

Methods: Six pigs were subjected to a partial cardiopulmonary bypass lasting 180 minutes. The continuous total flow ranged from 2 to 3 L/min, and the pulsatile component was of 37.5 mL with a frequency of 60 bpm. The hemostatic study included the measurement of hemostatic, hemoglobin, leucocyte and platelet function. Animals were sacrificed 60 minutes after extracorporeal circulation was suspended, and thus, a morphological study including biopsy of the heart (free left ventricular wall), liver, lung, and kidney, was conducted.

Results: The pump under test did not significantly alter either platelet count or platelet function. In contrast, hemostatic and hemoglobin were significantly reduced during extracorporeal circulation (approximately 5% p<0.001, and 2 g/dL p<0.01 respectively). The leucocyte count during extracorporeal circulation showed a tendency to decrease but this was not significant. In general, the short-term use (4 hours) of the pump did not cause any serious morphological damage to heart, lung, kidney or liver.

Conclusion: The findings suggest that the hemodynamic performance of the new pump is similar to a conventional centrifugal pump and could therefore be appropriate for use in extracorporeal circulation.

P1A-3 Protection against liver ischemia-reperfusion injury in rats by silmyarin or glutamine

A. Demirag, M. Kısakürek, A. Sepic, S. Karakayali

Yozgat University Hospital, Yozgat, Turkey Department of Surgery, Ankara Teaching Hospital, Ankara, Turkey Department of Biochemistry, Gazi University Hospital, Ankara, Turkey

Objectives: Liver injury after cold or warm ischemia followed by reperfusion remains one of the major obstacles in transplantation. Supplementation with glutamine (GLN) and silmyarin (SLV) have been shown to have protective effects against injury, but there is no information about the comparative effects of these drugs. The aim of this study was to evaluate preventive effect of SLV and GLN supplementation against I-R injury.

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P2K-4 Primary hyperparathyroidism and thyroid disease
J. R. Hernández , C. Rosas , I. Gutiérrez , F. García Angínizano ,
I. Rodríguez , V. Vega , V. Nuñez
General Surgery Department, Hospital Insular de Gran Canaria, Las Palmas de Gran Canaria, Spain

**Objective:** Thyroid and parathyroid pathology may coexist, classically, in multiple endocrine neoplasia. Other non-syndromic scenarios result in pathologies of these endocrine organs. This can create a challenge in the clinical decision making and management of these patients. It is optimal to deal with both problems in one operative procedure, if surgery is required.

**Method:** A retrospective review of all cases (225 patients), that underwent operation in the last 14 years (1993–2008) with primary hyperparathyroidism and concomitant thyroid disease was done. The surgical outcomes, complications and pathologies findings were analyzed.

**Results:** Of the 225 patients, 173 (76.8%) had no clinical manifestations of primary hyperparathyroidism or concomitant thyroid disease. 73 (32.4%) of them had concomitant thyroid disease. Of these 73 patients, 15 (16.4%) had multinodular glands (papillary carcinomas), 37 (42.2%) had only benign nodules and 21 patients (29.9%) had diffuse goiter (multinodular goiter, chronic thyroiditis). Different surgical procedures were performed, we found a parathyroid adenoma in the vast majority, 219 (97.6%), and only 6 of them (2.6%) had hypoplasia.

**Conclusions:** According to our findings it is important to consider the association between thyroid and parathyroid disease. All the patients with primary hyperparathyroidism should be investigated to rule out concomitant thyroid disease in order to deal with these conditions at the same time.

With the developing trend toward minimally invasive parathyroidectomy without intra-operative thyroid gland palpation, thyroid pathology may be missed. The authors consider it necessary to revisit the tissue of thyroid pathology found at neck exploration for primary hyperparathyroidism.

P2K-5 A new flap to obliterate the bone cavities and/or for repairing the bone defects: composite multi-fractured osteoperiosteal flap
C. Uçar
ENT Department, Private Türkiye Hospital, Derrilezere od, Istanbul, Turkey

**Objective:** To obliterate the bone cavities and/or to repair the bone defects by a composite multi-fractured osteoperiosteal flap (CMOF), original and new surgical approach.

**Methods:** CMOF was used to obliterate the mastoidectomy cavity in forty four patients, the frontal sinus in four rabbits and to repair the tubal bone defect in four sheep. While creating the osteoperiosteal flap, much attention is paid to the lumbar bone cortex to prevent the corticosteroid layer of the flap to be both not more than 1 mm. in thickness and multifractured as many as possible. And then, the cavity or bone defect is filled with sponges and closed by the CMOF. Postop both first day and at the end of the third month, the lesions has been CT-scanned. Beside this, at the end of the third month, the bone tissue newly developed under the CMOF has been evaluated histologically.

**Results:** The CT-scans taken at the end of the third month showed the defect to be filled by the new bone tissue developing from and under the CMOF. Histological evaluation of the new bone tissue at the third month showed osteoblastic activities.

**Conclusion:** We have utilized the neo-osteogenesis growing behind the CMOF to obliterate the cavity and to repair the bone defect in three studies. Some part has been published.

P2K-6 Results of Radiofrequency Low Temperature-Controlled Bipolar Ablation (Coblation) in Inferior Turbinates Hypertrophies
B. Acar , K. S. Tuncay , M. A. Babadezen , H. Karabulut , R. M. Karasen
Koceriym Training and Research Hospital Department of Otorhinolaryngology, Ankara, Turkey

**Objective:** Chronic nasal obstruction caused by inferior turbinate hypertrophies are a common clinical condition. Several surgical techniques are currently available including cryosurgery, electrocoagulation, total or partial turbinectomy, submucous resection, turbinateplasty, laser assisted turbinateplasty and argon plasma surgery. Radiofrequency nasal ablation has become popular in recent years when patients refractory to the medical treatments. The aim of this study is to evaluate the efficacy of Low Temperature-Controlled Bipolar Ablation (Coblation) of inferior turbinate hypertrophies.

**Methods:** A total of 14 patients with chronic nasal obstruction caused by inferior turbinate hypertrophy were treated with coblation. This application was performed 14 patients' 19 hypertrophic inferior turbinate, depending on the physical examination and magnetic resonance imaging (MRI). The results were evaluated subjectively by preoperative and postoperative a short form nasal symptom questionnaire (Likert scale) and objectively by MRI. Statistical analysis was made by paired-sample t-test.

**Results:** 12 weeks after treatment nasal symptoms that were evaluated with Likert scale were significantly decreased (p<0.001). A significant recovery in nasal volumes that were evaluated with MRI were detected 12 weeks after treatment (p<0.001). Postoperative complication depending on this application as epistaxis, infection, synchia, dryness, foul odor, pain and bone necrosis did not occurred in this study.

**Conclusions:** This study suggests that thermal ablation with radiofrequency energy is an useful, reliable and effective technique in treatment of inferior turbinate hypertrophy that is refractory to the other medical treatments. This method can be preferred in treatment of inferior turbinate hypertrophy because it makes controlled tissue reduction in low temperature.

P2K-7 Prescribing for otolaryngological emergencies in pregnancy
R. Mudduwa , I. Smillie , N. Kari
Department of Otolaryngology and Head & Neck Surgery, James Cook University Hospital, Middlesbrough, UK. Department of Otolaryngology and Head & Neck Surgery, Freeman Hospital, Newcastle upon Tyne, UK

**Objective:** Prescribing in pregnancy presents a unique challenge to any clinicians, more so in the emergency setting, where the underlying condition needs to be treated within a limited period of time, whilst ensuring both maternal and fetal wellbeing.

Otolaryngological emergencies often presents in pregnancy, and there needs to be clear and accessible guidance in prescribing, especially for surgical trainees. The authors aim to propose guidelines for prescribing in Otolaryngological emergencies based on current evidence.

**Recommendations:** From The British National Formulary, Sanford Antibiotic Guidelines, American Academy of Otolaryngologists-Head & Neck Surgeons and Food and Drug Administration (USA) were taken into account, together with local and national guidelines such as NICG and SIGN, to assess the safety of the most commonly used drugs in Otolaryngological emergencies.

**Results & Conclusion:** It is undisputed that drugs should only be prescribed if the expected benefits to the mother is thought to be greater than the risk to the foetus, however strict adherence to avoiding drug prescribing in the first trimester may not be practical. Although relatively few drugs have been shown to be conclusively teratogenic in humans, it is good practice to limit prescribing to those that have been extensively used and appear to be safe.

P2L Surgical Oncology 2

**P2L-1 Retrospective analysis of surgically resected gastrointestinal stromal tumors in Japan**
Department of Surgery, Kanei Electric Power Hospital, Osaka, Japan. Department of abdominal surgery, Tsuji hospital, Tsuji, Japan

**Objective:** Gastrointestinal stromal tumor (GIST) is a relatively rare mesenchymal tumor of gastrointestinal tract. We analysed the clinico-pathological features of resected GIST to evaluate the known prognostic factors in Japan.

**Methods:** Surgically resected GIST patients at the two hospitals from 1996 to 2008 were subject to analysis. We retrospectively collected the patient demography, operative findings, tumor size, histological findings and the