

0461 DEVELOPMENT, CHARACTERISATION AND OPTIMISATION OF POLY**(METHYLMETHACRYLATE) BONE CEMENT FORMULATIONS FOR APPLICATION AS A SPACE MAINTAINER IN A STAGED STRATEGY FOR CRANIOFACIAL BONE REGENERATION**

Fionnuala M. Hinds¹, Patrick Spicer², Meng Shi², Mark E. Wong³, F. Kurtis Kasper², Antonios G. Mikos². ¹*School of Medicine, Dentistry and Biomedical Sciences, Queens University Belfast, Belfast, Antrim, UK;* ²*Department of Bioengineering, Rice University, Houston, Texas, USA;* ³*Department of Oral and Maxillofacial Surgery, University of Texas Health Science Center at Houston, Houston, Texas, USA*

Delayed surgical reconstruction of craniofacial bony defects can lead to secondary intention healing, defect volume loss and soft-tissue fibrotic contracture, giving poorer aesthetic and functional results. Utilising temporary porous space maintainers, made by leaching porogens (pore inducers) from curable matrices e.g. Poly (methylmethacrylate) (PMMA) cement, limits aforementioned complications.

Carboxymethylcellulose (CMC) is a demonstrated, efficacious porogen but is unlicensed for interstitial use. Pre-existing licensed products may provide alternatives (e.g. gelatin-based products), facilitating clinical application. This project aims to investigate PMMA incorporating a gelatin-based porogen and compare scaffold characteristics, e.g. interconnectivity, porosity and porogen release, to PMMA-CMC.

PMMA-gelatin scaffolds of different weight percentages and yields (water/unit of gelatin) were mould polymerised then lyophilised. Micro-computed tomography analysis of scaffold porosity and interconnectivity was performed pre/post gelatin leaching and gelatin release was measured by microBSA protein assay.

PMMA-gelatin demonstrated lower porosity and pore interconnectivity than PMMA-CMC of identical weight incorporation. Increasing yield and/or weight incorporation increased porosity. Leaching was slow ($\mu\text{g/ml/hr}$), with the majority of porogen still entrapped at three weeks dissolution.

The gelatin-based product shows promise as a CMC alternative, considering initial results for porosity and interconnectivity indicate desirable scaffold characteristics. Further work is warranted to fully characterise the desired scaffold characteristics comparative to PMMA-CMC.

0463 HOSPITAL AT NIGHT PROTECTS DAYTIME SURGICAL TRAINING BY REDUCING UNNECESSARY NIGHT-TIME CLINICAL ACTIVITY

Sukrti Nagpal, Sarvi Banisadr, Eamonn Coveney, Dermot O'Riordan. *West Suffolk Hospital, Bury St Edmunds, Suffolk, UK*

Introduction: With junior doctors working reduced hours and stringent EWTD laws, the impact of the Hospital at Night (HAN) Team in managing out-of-hours medical activity and its implications for maintaining daytime training has been questioned. We studied the outcome of HAN work on the out-of-hours surgical workload.

Methods: All ward calls made since July 2007 to the HAN team were recorded. The site clinical practitioners (SCP) triaged calls according to urgency using a traffic light system. These were allocated on clinical priority. Data from July 2007 to July 2010 was analysed.

Results: Over 36 months 32,355 calls were made. The five most common calls were for clinical skills (32%), medical review (27%), drug queries (15%), fluid balance (13%), and emergencies (4%). 54% of calls were managed by the SCP. The remainder were managed by the medical SHO (22%), SPR (2%) and surgical SHO (14%). Less than 1% of calls were referred to the surgical registrar. The five main reasons requiring a doctor were for patient review, clerking, catheter management, wound reviews and pain.

Conclusions: Using a strategic triage system, the HAN service facilitated compliance with the surgical registrar non-resident on call rota with resultant protection of daytime training hours.

0464 ARE C-REACTIVE PROTEIN LEVELS NECESSARY IN THE DIAGNOSIS OF ACUTE APPENDICITIS IN CHILDREN?

J.D. Hodgkinson, Z.N. Shukur, E. Tan, O. Warren, Q. Iqbal, S. Harris, Y. Mohsen, A. Prabhudesai. *Department of Colorectal Surgery, Hillingdon Hospital, Uxbridge, Middlesex, London, UK*

Background: Diagnosis of acute appendicitis is difficult, particularly in paediatric patients, where clinical signs maybe harder to elicit. Traditionally, history and clinical signs combined with leukocyte count (WCC) have been used to aid diagnosis. Over recent years, C-reactive protein (CRP) is also being measured routinely. We aimed to evaluate whether CRP improves diagnostic accuracy of acute appendicitis in children.

Methods: 16-month retrospective study of 92 consecutive paediatric patients undergoing appendicectomy for suspected appendicitis. CRP and WCC on presentation were compared with histological findings.

Results: 65.2% (60) of patients had a histologically confirmed diagnosis of acute appendicitis. Use in isolation WCC >17 yielded: sensitivity =0.25; specificity =0.94; PPV =0.88. Used in isolation CRP >20 yielded: sensitivity =0.52; specificity =0.91; PPV =0.91. Combined WCC >17 and CRP >20 (sensitivity =0.13; specificity =1.00; PPV =1.00) did not significantly improve PPV or specificity compared with WCC alone.

Conclusions: When used in isolation, WCC is more useful in predicting acute appendicitis at histology than CRP. Combining both markers has no impact on the likelihood of a correct diagnosis when compared with WCC >17 alone. Measuring CRP levels in suspected acute appendicitis, in children, doesn't improve diagnostic accuracy and therefore cannot be financially or clinically justified.

0466 LOCAL ANAESTHETIC HERNIA REPAIR IS A SAFE THERAPEUTIC OPTION IN OVERWEIGHT PATIENTS

Sarvi Banisadr, Balendra Kumar, Eamonn Coveney. *West Suffolk Hospital, London, UK*

Aims: Inguinal hernia repair performed under general anaesthesia (GA) is currently the preferred approach in the majority of surgical units in the UK. This reservation to use local anaesthesia (LA) may in part be due to a reluctance to operate on overweight or obese patients because of potential technical challenges or toxicity concerns. The aim of this study was to examine the impact of the use of local anaesthetic hernia repair (LAHR) on surgical outcomes in overweight patients (BMI \geq 25).

Methods: In 2010, data on BMI, local anaesthetic use, operative time, pain scores and patient satisfaction rates was prospectively recorded in 75 consecutive patients undergoing LAHR.

Results: Number: BMI<25(mean \pm SD) 32 / BMI \geq 25 (mean \pm SD) 43 (P value); Local anaesthetic (mls): 40.4 \pm 18 /43.4 \pm 16 (0.37*); Operative time (min): 51.7 \pm 14 /56.3 \pm 16 (0.29*); Pain score (1-100): 22.4 \pm 19 /21.8 \pm 15 (0.79*); Patient satisfaction (1-100): 95.2 \pm 6 /94.7 \pm 5 (0.41*); (*Mann Whitney test).

Conclusions: When compared to normal weight patients, local anaesthetic hernia repair in the overweight is comparable, safe and well tolerated. Use of LAHR should be considered as a viable alternative approach to managing the overweight patient.

0469 TOTAL NEOPHARYNGEAL STENOSIS FOLLOWING PHARYNGOLARYNGO-OESOPHAGECTOMY WITH GASTRIC INTERPOSITION - SUCCESSFUL RECANALISATION USING A TRANS-CERVICAL RADIOLOGICALLY GUIDED TECHNIQUE

Mark Wilkie¹, Iain Hawthorne², Andrew Evans². ¹*Department of Otorhinolaryngology Royal Liverpool University Teaching Hospital, Liverpool, UK;* ²*Department of Otorhinolaryngology St. John's Hospital, Livingston, UK*

Aims: To present a novel therapeutic strategy for managing total neopharyngeal stenosis following surgical treatment of hypopharyngeal cancer. To discuss how this simple technique adds to currently employed methods of managing pharyngo-oesophageal stricturing following both non-surgical organ preservation and surgical treatment of head and neck cancers.

Methods: We report the case of a 71-year-old female who developed total neopharyngeal stricturing following pharyngolaryngo-oesophagectomy and gastric interposition for squamous cell carcinoma of the proximal cervical oesophagus/post-cricoid. A trans-cervical, radiologically guided, combined antegrade/retrograde procedure was performed to restore luminal patency.