

## Residents' Papers 1

Chairperson: A Mansingh

**(O – 10)****The influence of obesity on the outcome of total knee arthroplasty – the Bermudian perspective**

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**Objective:** The prevalence of individuals with a high body weight is evident in Bermuda. Obesity (body mass index  $\geq 30$  kg/m<sup>2</sup>) is an independent causative factor in the development of knee osteoarthritis. These obese patients will likely present to the orthopaedic surgeon at some point for evaluation for a primary total knee arthroplasty. Our null hypothesis was that obesity does not affect the outcome of primary total knee arthroplasty.

**Method:** We undertook a retrospective study of 456 primary total knee arthroplasties implanted over a seven-year period. The patients were distributed according to the World Health Organization (WHO) classification of body mass index (BMI) and major complications were reviewed using Fisher exact two-tailed test and Pearson Chi-squared test to analyse for any significant differences.

**Results:** There was no significant relationship between BMI class and major complications. There was no association between BMI and length of stay ( $p = 0.597$ ) or rate of revision ( $p = 0.727$ ). The mean tourniquet time was 55.3 minutes (range 30 to 87). Mean tourniquet time was seven minutes longer in class III obesity relative to normal weight patients ( $p < 0.001$ ). Patients with class III obesity had smaller falls in haemoglobin when compared with normal, overweight and obese class I groups ( $p = 0.004, 0.001, 0.000$ , respectively)

**Conclusion:** The results relating BMI to major complications were not statistically significant. Thus, this study confirms that obesity does not influence the outcome of primary total knee arthroplasty.

**Level of evidence:** Prognostic level II (retrospective study).

**(O – 11)****The efficacy of tranexamic acid on reducing blood loss and transfusion rate in primary total knee and hip arthroplasty**

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**Objective:** To assess the effectiveness of tranexamic acid in reducing transfusion requirements in patients undergoing primary total knee arthroplasty (TKA) and total hip arthroplasty (THA).

**Methods:** A prospective cohort of 18 patients undergoing primary total hip (6) and total knee (12) arthroplasties were studied. Mean age was 67.1 years (range 55–83 years). All patients received peri-operative tranexamic acid. Pre and postoperative haemoglobin levels and transfusion rates were recorded.

**Results:** Patients undergoing total hip arthroplasty had a mean drop in haemoglobin of 1.77 g/dL while patients undergoing total knee arthroplasty experienced a mean drop of 1.6 g/dL. One patient in the total knee arthroplasty group required blood transfusion. No complications were recorded.

**Conclusion:** The use of tranexamic acid in primary total hip and knee arthroplasties is associated with a low transfusion rate (5.5%) and a minimal fall in haemoglobin levels.

**(O – 12)****Femoral/sciatic nerve blocks in primary total knee arthroplasty**

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**Objective:** To evaluate the effectiveness of a single dose femoral/sciatic nerve block in the postoperative period following total knee arthroplasty.

**Methods:** This is a prospective descriptive study. All patients who underwent primary total knee replacement using a femoral/sciatic nerve block during the period January to June 2013 were included. Data collection consisted of demographics, analgesic requirements, pain scores, return of nerve function, complications and length of hospital stay.

**Results:** The maximum mean verbal analog pain score (3.9) was recorded on day two, and this mirrored the maximum morphine equivalent usage. Eighty-one per cent of patients met all rehabilitation criteria prior to discharge. Nerve recovery proceeded in a predictable manner with all patients regaining normal neurological function at 30 hours postoperatively. No complications were recorded and all patients were discharged on day three.

**Conclusions:** Combined single dose femoral/sciatic nerve blocks can be safely used as part of an effective multimodal postoperative analgesic regimen in total knee arthroplasty.

#### (O – 14)

##### **Knowledge and practice of radiation safety among health professionals in a tertiary institution**

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**Objective:** To determine the availability, practices and knowledge of radiation safety measures amongst healthcare providers in a tertiary institution.

**Methods:** A cross-sectional survey of healthcare professionals within the institution was conducted using a questionnaire distributed to all individuals whose respective fields require the use of ionizing radiation machines. Questionnaire results were tabulated and analysed using Microsoft Excel and Stata version 11.

**Results:** A total of 60 healthcare professionals participated in this study. The average score amongst all participants was 48.4% with the Radiology Department scoring the highest. Post hoc analysis showed that daily users were likely to score higher than less frequent users. Although individuals with formal training scored higher, it was not statistically significant when compared to individuals without training ( $p = 0.0525$ ). The majority of participants from the General Surgery and Medicine Departments were unaware of the amount of radiation produced during a computed tomography (CT) scan of the abdomen and pelvis, and 55% of all participants knew that magnetic resonance imaging (MRI) scans do not expose the patient to any ionizing radiation.

**Conclusions:** There is an inadequate level of knowledge amongst all individuals who participated in the operation

of ionizing radiation equipment within the institution. Proper training in the use of these machines is important, however, participants who had formal training in ionizing radiation did not perform significantly better than individuals without training. Annual recertification courses should be implemented such that individuals are kept abreast with current changes and reminded of commonly neglected safety practices.

#### (O – 15)

##### **Ultrasound guided aspiration and steroid injection of ganglion cysts at the San Fernando General Hospital**

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**Objective:** To determine the efficacy of ultrasound guided ganglion aspiration and steroid injection as an alternative to surgical excision and the effect of this procedure on patient function.

**Methods:** Patients presenting to the Orthopaedic Surgical Out-patient Clinic that were diagnosed with ganglion cysts by a consultant were considered for this study which was from October 2012 to June 2013. House officers in radiology and orthopaedics were trained by consultants to use ultrasound guidance and fine needle aspiration techniques, respectively. Local anaesthesia was given subcutaneously and ultrasound guided aspiration and steroid injection performed under sterile conditions. Patients were reviewed at six-week, twelve-week and six-month intervals. Data collected included demographics, function prior to and post procedure, clinical and radiological measurements. Results were tabulated and analysed with Fisher's exact test.

**Results:** A total of 15 patients with 17 ganglions were included in this study. There was no association between ganglion location and outcome ( $p = 0.15$ ). At six weeks post procedure, 71% (12 patients) of ganglions were clinically reduced. Of these, 41% (5 patients) were clinically undetectable at twelve-week and six-month reviews. An overall success rate of 41% was calculated. There was no association between localization of ganglion and outcome ( $p = 0.24$ ). Seventy-three per cent of patients indicated their return to work and normal activity within 72 hours.

**Conclusions:** This minimally invasive procedure was found to have a suboptimal success rate. However, patient function and pain post procedure were acceptable. If higher success rates can be achieved, this alternative can be offered to the patients in the lower socio-economic group.