Identifying mortality risk factors in cemented hip hemiarthroplasty

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Background: Fixation of displaced intracapsular neck of femur fractures in the elderly are commonly managed with a cemented hip hemiarthroplasty. Guidelines by the British Orthopaedic Association and the British Geriatrics Society recommend that a hip hemiarthroplasty should usually be cemented. However, there is evidence to show that there is a substantial risk of mortality associated with this procedure. Our aim was to find factors contributing to perioperative mortality following cemented hip hemiarthroplasty.

Methods: We analysed 94 consecutive patients who underwent cemented hemiarthroplasties (Thompsons) for displaced neck of femur fractures in 2008. All hemiarthroplasty cases were from a busy district general hospital and were cross-referenced with the national hip fracture database registry. We considered factors such as ASA grade, pre-morbid conditions, pre and post-operative early warning scores (EWS) and post-operative events.

Results: The risk of mortality was greater with increasing ASA grade. Patients with ASA grade 4 had a 27% risk of perioperative mortality. We found that patients with a past medical history of cardiac disease such as dysrhythmia or left ventricular failure (LVF) had a 30% risk of perioperative death. Those with ischaemic heart disease (IHD) or COPD had a 20% risk. Patients with two or more of these pre-morbid conditions had a 33% risk of mortality. The overall mortality rate within 28 days was 12.8%.

Discussions: This study has identified and quantified patients who are at higher risk post-operatively following cemented hip hemiarthroplasty. Using these results, we feel that this “at risk” subgroup need increased pre-operative optimisation as well as higher levels of care (i.e. HDU) both pre- and post-operatively. We feel that these results may justify further investigation into the use of uncemented implants in this patient group.


Re-evaluation of the economics of ankle fractures measuring the effects of change in management philosophy 2007–2009

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Aims: Before the swelling sets in, ankle fractures provide a window of opportunity within the first few hours to be operated upon. If this vital opportunity is missed waiting times for the surgery can be prolonged. This audit was aimed to measure the economic impact of early operative fixation of ankle fractures.

Method: A retrospective review of ankle fractures operated during September 2007 to August 2008 was performed to assess the pre-operative waiting times. The economic cost to the hospital and patients in terms of lost earnings was evaluated. An estimate of overall loss to the national GDP due to ‘swollen ankles’ was obtained. Results of the initial audit were presented at the British Trauma Society meeting 2009. A departmental policy of ‘same day surgery’ for ankles was adopted after the initial audit. Re-audit was performed for January 2009 to December 2009. Calculations were based upon the earning days lost with the national minimum wage of £5.73 h\(^{-1}\).

Results: Total number of patients operated for ankle fracture during the 2 study periods was 159 and 96 respectively. The mean waiting time for surgery was reduced from 4.9 to 1.5 days [range: 0–13/1–7.8 days]. The mean duration of in-hospital stay was reduced from 12 to 4.8 days. With the average cost of hospital stay per day per patient being £365, the total expenditure to the trust for ‘swollen ankles’ was £1788 per patient previously in comparison to £547.5 in 2009.

Discussion: Loosing an opportunity of operating the ankle fractures within a few hours of admission results in an enormous cost to the patient, hospital and the economy in general. Hospitals should consider arranging provisions for such surgeries on the CEPOD or on parallel emergency trauma theatre lists. With the implementation of the EWTD, performing such cases out of hours will prove beneficial for the surgical trainee as well.