19 June 2014

ARTICLES IN THE DAILY TELEGRAPH AND DAILY MAIL DESCRIBING “TOXIC HIP IMPLANTS”
Use of bone cement in hip replacement surgery following a hip fracture:
A position statement from the British Orthopaedic Association, British Hip Society and
Orthopaedic Trauma Society

SUMMARY:
• The evidence that the safe use of bone cement confers clinical advantage for the outcome of hip
surgery after fracture of the hip is overwhelming.

• The National Institute for Health and Care Excellence (NICE) recommends the use of cement
due to both improved clinical outcomes and reduced mortality at 30 days. (guidance.nice.org.uk/cg124)

• Over the past few years there has been a year-on-year reduction in mortality rates for patients treated
for this condition.

Overview

There have been recent media reports regarding use of bone cement in hip replacement surgery
following a hip fracture. We are publishing this position statement to provide our members and their
patients with a background to this and a BOA, BHS and OTS perspective.

The media reports follow an article produced in the medical journal BMJ Open. The BMJ Open article is
“What is the risk of death or severe harm due to bone cement implantation syndrome among patients
undergoing hip hemiarthroplasty for fractured neck of femur? A patient safety surveillance study.”1 Its
authors include two well-known clinicians, Lord Darzi (member of the House of Lords) and Sir Liam
Donaldson (Chief Medical Officer for England 1998 – 2010). Sir Liam has been quoted in media reports.

The BMJ Open article is based on a study that has looked at risk of death or severe harm associated with
partial hip replacements for people with a fracture at the top of the thigh bone (fractured neck of femur)
where bone cement has been used in the surgical procedure. It reports a number of deaths and events
involving severe harm from 2005 to 2012, based on a database called the ‘National Reporting and
Learning System’ (NLRS) that collects records on incidents reported to it involving serious harm to
patients within the NHS. There were 62 such cases involving bone cement for this procedure reported
during this time period, when up to 200,000 patients would have been treated with a hip implant to treat
their hip fractures.

Following the publication in 2009 of a report by the (now defunct) National Patient Safety Agency raising
exactly the same concerns of the use of cement in this frail population, the National Institute for Health
and Care Excellence (NICE) were tasked with reviewing the evidence. In the 2013 ‘Guidance on the
management of hip fractures in adults’, NICE recommended the use of cement due to both improve
clinical outcomes and reduced mortality at 30 days.2

1 http://bmjopen.bmj.com/content/4/6/e004853.full
2 http://publications.nice.org.uk/hip-fracture-cg124/guidance
The BMJ Open article concedes “The NRLS is not designed to offer a complete assessment of the benefits and risks of a treatment and its alternatives. Our findings need to be considered in conjunction with other sources that can provide information on the benefits associated with cement and on all-cause mortality associated with cemented and uncemented surgery.”

It is known that in a small proportion of cases the use of bone cement can lead to ‘bone cement implantation syndrome’ (BCIS) at or around the time of the operation, and surgeons and anaesthetists are aware of the techniques they need to use to reduce the risk of this occurrence. There is strong evidence that the safe use of bone cement confers clinical advantages compared to surgery that does not use bone cement.

The UK has the largest National Hip Fracture Database in the world and publishes its results annually on the web, including figures on the numbers of deaths. In a publication this year, the risk of death within 30-days of surgery was significantly higher in patients receiving uncemented hip replacements (8.9%) compared with cemented hip replacements (7.4%) in over 26,000 patients studied. This study is significantly larger than the surveillance study by Imperial College used in the BMJ Open article. The BMJ Open article suggests an increased mortality with cement use of 1 in 2900 procedures, an increased risk of mortality of 0.03%, yet the mortality associated with a hip fracture is 8.6% at 30 days, suggesting there are other major factors which influence survival.

In a study of 25,000 patients on the National Joint Registry in Australia, statisticians similarly reported that although cemented fixation carried an increased risk of death within one day of surgery, it resulted in a reduced risk of mortality at all time periods thereafter: one week, one month and one year.

Summary:

Patients undergoing surgery following fracture are often ill and frail and the Profession continues to teach on the details of safe surgery. Patients can be reassured that the NHS does not use toxic implants, and initiatives started by the Profession have led to year-on-year reduction in mortality after fractured neck of femur. This does mean that the profession is not complacent and continues with prospective audit and research to improve patient safety and outcomes at every level. The National Hip Fracture Database demonstrates that the standards of care of these patients in the UK are amongst the best in the world. We are fortunate to have the largest database in the world to record adverse events for the whole population studied and to protect patients from the inaccuracies of voluntary reporting systems such as that reported in BMJ open which has led to unjustified, misleading and sensationalist headlines in some parts of the media.

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