Measuring and changing practice – making a difference in hip fractures

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Hip fractures are a leading cause of hospital admissions in an increasingly elderly population. The annual incidence of hip fractures in the UK is around 65,000. These are associated with high morbidity and mortality rates. In-patient and 30-day mortality rates range from between 3-10% with a 1-year mortality rates that varies between 20-40%. There is also a frequent loss of independence and mobility after injury and subsequent surgery. A poor prognosis is associated with advanced age. Cognitive impairment, male gender, institutionalised living and patients with more associated co-morbidities.

For a number of years there has been recognition of the disjointed approach to their care. Whilst numerous publications have highlighted the issues of multidisciplinary and co-ordinated care, the results in terms of length of stay and mortality were little altered. For many it was considered a medical problem, and the majority of the surgery required was deputed to junior orthopaedic staff, often on unsupported emergency lists, with junior anaesthetists. Subsequent complications were attributed to the patient group, who present with significant medical comorbidities. In the last 8 years there has been a paradigm shift in how these patients are cared for, managed and measured. They are now a benchmark of how hospitals treat emergency admissions unless standards are created, care cannot be measured and subsequently audited against an accepted norm. From this the National Hip Fracture Database (NHFD) was started, initially supported by enthusiastic hospitals, and now by every hospital in England. Over 310,000 cases have been added since 2007, making it the largest hip fracture database in the world. The database is centrally funded via HQIP (Healthcare Quality Improvement Partnership) as part of the Falls and Fragility Fracture Audit Programme. The British Orthopaedic Association and the British Geriatric Society jointly published the standards of care in a “Blue Book” titled “The Care of Patients with a Fragility Fracture”.

Professor Keith Willett, a clinician, was appointed National Clinical Director of Trauma with a remit to improve the management of hip fractures and major trauma.
NICE published standards of care for hip fractures in 2011. There was sparse data on outcomes and the Best Practice Tariff was based on processes which were felt to be most likely to lead to optimum outcomes. The original criteria included the requirement for a multidisciplinary pathway, orthogeriatric review within 72 hours, bone health and falls assessment, surgery within 36 hours and submission of data to the NHFD. The initial incentive was £440 for each individual patient achieving the criteria. Interestingly, the funding for this was achieved by dropping the National Tariff. The BPT has increased to £1335, with additional criteria of pre- and post-operative cognitive assessment added. In the first year, just over 20% of patients achieved the criteria to obtain the tariff – less than four years later this has risen to 60%.

NICE guidance was challenged to provide standardisation in areas where there remained a huge variation in practice and reported on all aspects of the pathway from initial assessment, timing of surgery, standardisation of surgical procedure, mobilisation and rehabilitation. This has led to the NICE quality standards, the majority of which can be monitored by the NHFD. The quality standards have now become statutory for Commissioning Groups.

The 2013 NHFD report considers 61,508 patients and provides data from previous years for comparison. 86% of patients in 2013 had surgery within 48 hours of admission, an improvement from the 75% in 2009. Similarly, the proportion of patients receiving a falls assessment prior to hospital discharge has improved from 44% in 2009 to 94% in 2013, with a higher number also being discharged on bone protection medication. Pre-operative orthogeriatric review has also improved from 24% (2009) to 49% (2013). The overall ‘return to home after injury’ figures have improved modestly from 43% in 2011 to 46% in 2013. Challenges and areas to improve include: admission to an orthopaedic ward within four hours of admission, which remains relatively low at around 50% (55% in 2009) and accurate documentation of the abbreviated mini-mental test score (this now seems to have improved but was initially a main reason for failing to achieve BPT). Recent changes introduced have given the lead clinicians the responsibility for checking data entry, as retrospective changes are no longer allowed.

Have these standards influenced key outcome measurements used to assess hip fracture care? The NHFD uses case mix adjustment to help correct for age and complexity of patients when comparing mortality rates between individual units. Those falling outside the 2 standard deviations are offered support with external reviews. All units have full access to their data for audit and the national reports include success stories of changing practice and culture. Obtaining accurate and complete data in the first year after injury has proved challenging. Only 45% of patients in the 2013 NHFD report had complete 30-day data, with figures declining further on the 120-day review. Continued independence and rehabilitation success are key markers used to assess the quality of multidisciplinary care received. There is a programme to try to introduce patient reported outcome tools at the 30 and 120-day reviews to get a measure of the quality of care given.

So where are we now? All hospitals have changed their practice. Hip fractures are both on local and national agendas. The patients now receive urgent care (often prioritised on Consultant led Trauma lists) with both early orthogeriatric input and multidisciplinary rehabilitation. Good hospitals are rewarded with more income to invest in services. The information of performance (through the NHFD), including mortality, has been published on the Internet long before the recent surgeon specific mortality figures. Those who struggle are offered multidisciplinary reviews to try to address local issues, and the standards continue to rise. In just a few years the mortality associated with hip fractures has dropped by between 10 and 20%, the length of stay in the NHS has dropped by between three to six days, and the cost of treating these patients has reduced rather than increased. Better care is not always more expensive care.
In 2013 the NHFD also used HES (Health Episode Statistics) to look at ‘super-spell’, which is the total length of hospital stay to the admitting hospital but also to any subsequent hospital or trust (e.g. for rehabilitation). This reduces potential bias in comparing units who have rehabilitation facilities on site and therefore would appear to have an elevated mean length of hospital stay.

Approximately 50% of elderly patients are still unable to mobilise independently after a hip fracture. Increasing elderly patients, institutionalised living and cognitive impairment are factors linked to poor outcome and are difficult to influence.

However, there are factors that we believe do make a difference and can improve the functional outcome and overall quality of life in this vulnerable patient group. Quality surgery and a better knowledge base for implant choice are factors that we can influence. NICE guidelines have now recommended that it be discontinued and placed in the same category as the uncemented Austin-Moore implant which has a well-documented higher rate of implant failure and intra-operative fracture. Adequate nutrition and fluid intake are pre-requisites to optimise outcome. Nutritional supplements and staff/volunteers present on the ward to assist with feeding can make a significant impact on morbidity and mortality. Better monitoring and follow up in the community may also help as there is very often a lack of coordinated rehabilitation once the patient has been discharged from hospital.

The care of hip fracture patients has improved following closer working between the BOA, the British Geriatric Society, the Association of Anaesthetists of Great Britain and Ireland, and other allied health professional bodies. There has been a tangible improvement in care which can be attributed to Professor Keith Willett’s drive with the BPT & NHFD incentivising and improving compliance and standardising care.

The next step is prevention, led by the developing fracture liaison services and further development of evidence-based rehabilitation. Hopefully this will benefit, not just those who suffer hip fractures, but our whole orthogeriatric population.

References:
- British Orthopaedic Association Standards for Trauma (BOAST). Hip fracture in the older person. BOAST 1, version 2. www.boa.ac.uk
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