

# Should physicians manage hip fractures?

C Sixsmith & S Poulton

## Abstract

*Elderly People with hip fractures are among the most frail and medically complex of all hospital inpatients. In one sense, the fracture itself is merely a marker of frailty, and many of these patients would have found themselves on an acute medical ward if they had not broken a bone. Despite this, many centres still expect the orthopaedic team to manage these cases with only token input from physicians.*

*This article explores other models of care for elderly hip fracture patients and looks at the evidence base to support the proposition that physicians should be managing hip fractures.*

## Keywords

Hip fracture, trauma, orthogeriatrics

## Introduction

*"At least one general ward in an acute hospital should be developed as a centre of excellence for orthogeriatric practice".*

So states the National Service Framework for Older People, standard six.<sup>1</sup> That this particular clinical problem merits its own standard illustrates the importance of hip fracture. It is a common condition and has a major cost implications both in terms of resources and its impact on functional independence.

Mortality after hip fracture is high - around 30% at one year. Patients who present to the orthopaedic team with a hip fracture are, more often than not, the frailest of elderly patients. Within this group, individuals have complex and multiple medical problems requiring polypharmacy, which may have contributed to their fall and consequent fragility fracture. These medical conditions need to be carefully managed in the peri-operative period. Falls assessment and management of bone health are other essential areas that must be targeted. Subsequent to admission, many patients develop new medical pathologies that also require prompt and ongoing management.

Given the significant input from elderly care physicians on the orthopaedic wards, why not take over the care of these patients on a dedicated ward where multidisciplinary team members are better equipped with the skills required for the management of the frail, medically complex, elderly patient?

## Models of Orthogeriatric Care

The need for orthogeriatric collaboration in the management of hip fracture patients is not in doubt. Orthopaedic bodies have recognised, for some years, that pre- and post-operative acute medical management, rehabilitation and secondary prevention is of equal importance to high quality surgery.<sup>3</sup>

There are several models of orthogeriatric care. At one end of the spectrum, there is the traditional model where the elderly fracture patient is admitted to a trauma ward and subsequently managed by the orthopaedic team with medical consultation. The more collaborative approach is combined orthogeriatric care, where the patient is admitted to a specialised orthogeriatric ward under the care of elderly care physicians and orthopaedic surgeons and assessed by the physicians pre- and post-operatively. Most acute hospitals employ an approach which lies somewhere between these two extremes.

The elderly care physician has many roles in this situation: The pre-operative optimisation of pre-existing conditions; peri-operative fluid and electrolyte balance (elderly patients tend not to follow "the rules" making standard treatments potentially dangerous); and early identification of post-operative medical problems. When the post-operative course is stabilised, falls assessment, secondary prevention and rehabilitation are further essential processes.

The Scottish Intercollegiate Guidelines Network (SIGN) first published evidence-based guidelines for the management of hip fracture in 1997. The guideline advocates a multidisciplinary approach to the hip fracture patient with collaboration between orthopaedic surgeons, elderly care physicians and other members of the multidisciplinary team. In addition, a national hip fracture audit documents the reality. In combination the two can exert pressures to improve the quality of interdisciplinary care.<sup>4</sup>

## Evidence

Logic would suggest that there is an extensive role for the elderly care physician. What is the evidence to support this?

Swanson et al in Brisbane, Australia,<sup>6</sup> compared orthogeriatric care with traditional orthopaedic care

**Clare Sixsmith**  
Specialist Registrar  
Royal Bournemouth  
Hospital  
Bournemouth

**Sue Poulton**  
Consultant in Elderly  
Medicine  
Queen Alexandra Hospital  
Portsmouth

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in a cohort of 71 patients in groups of 38 and 33 respectively. The length of stay was the primary outcome measured and was reduced in the intervention group who commenced rehabilitation within 24 hours of surgery on the acute care ward. Other studies report similar reductions in length of inpatient stay. In New Zealand, Elliot et al, looked at 165 patients over 4 months and the effects of early physician involvement on eventual outcome, in addition to impact on length of stay. They demonstrated improved outcome in terms of functional status and dependency at the time of discharge.<sup>7</sup> Other studies show conflicting results, probably reflecting the complexity of assessing the long term outcomes in the patient group.<sup>8,9</sup> Some studies have used rather strict exclusion criteria (excluding, for example, individuals from nursing homes, inpatient fractures and pathological fractures), which may have skewed the results.

In the United Kingdom, a large dataset is available from The Peterborough Hip Fracture Project, studying 3025 hip fracture patients between October 1986 and the end of 1997. The Project designated specific staff to treat hip fracture patients and streamline hospital care on a hip fracture ward. This included the use of a hospital at home community nursing service. Mean hospital stay fell from 51 days to 21 days, with reduced 30 day and 120 day mortality.<sup>10</sup>

### Local Experience

Our own experience illustrates a number of points.<sup>2</sup> In Portsmouth since April 2003, an elderly trauma ward has been established with a dedicated orthogeriatric consultant physician on the elderly trauma ward who works with an Elderly Trauma Nurse Specialist and a specialist registrar. There are daily orthogeriatric ward rounds where pre- and peri-operative "problem" patients are assessed, with assessment of all cases at Day 4 or 5 post operatively. In three month audit periods, (Table 1), comparing the management of fractured neck of femur patients on the elderly trauma ward before and after the introduction of the orthogeriatric service, length of stay reduced from 17 days to 12 days. Post -operative complications were recorded to be 31.2% pre-service and 36.2% after the introduction of the service, but this was felt to be due mainly to better documentation of complications.

We compared admissions to an orthopaedic ward with those to an acute Elderly care ward. On a typical orthogeriatric ward round, day 4-5 post operatively, 6 patients, (2 male and 4 female) ranging in age from 67 to 96 were seen. Each of these individuals had significant medical history - between two and five pre-existing conditions at the time of presentation - a total of 20 medical conditions for the patient group. Common pathologies included hypertension, ischaemic heart disease, cerebrovascular disease (stroke and dementia), chronic obstructive pulmonary disease, diabetes mellitus, Parkinsonism and pre-existing malignancy. Post operatively 3 out of 6 patients developed one or more medical problems, including uncontrolled atrial fibrillation, pyrexia, electrolyte imbalance and suspected venous thromboembolic events.

By comparison, on the acute elderly care ward round that day in July, the most recent 6 admissions to the ward were assessed in a similar manner. Of these patients, (3 male and 3 female), ages ranged from 66 to 91. These individuals had a total number of pre-existing diagnoses of 15 - between two to three per person, commonly hypertension, ischaemic heart disease, cerebrovascular disease (stroke and/or dementia), prostate disease - malignant and benign.

### Conclusion

The elderly patient with a hip fracture is more than just a broken bone to be fixed. A fragility fracture often signifies the culmination of an array of advancing medical problems, social struggles and failings, which need to be addressed in a timely manner during the hospital admission. Different establishments manage these issues in various ways, often dependent on resources. The prevailing feature throughout is the pivotal role of the elderly care physician in the care of these patients who, in many cases, may have been brewing an imminent medical admission if they had not sustained a hip fracture on that particular day. It is certain that efficient co-operation and collaboration between orthopaedic surgeons and physicians is essential. In many centres, pelvic fractures requiring non-surgical management are admitted under the acute medical team. Since patients with hip fracture patients with are equally complex in their medical and rehabilitation needs, one could argue that they primarily require admission under, and subsequent management by, a physician specialist in this field - an orthogeriatrician and their team.

| Key issue audited                               | Pre-project<br>Nov 2001-Jan 2002<br>(109 patients) | Post project set up<br>Nov 2003-Jan 2004<br>(106 patients) |
|-------------------------------------------------|----------------------------------------------------|------------------------------------------------------------|
| Transferred to ward<br><1h after arrival in A&E | 4.8%                                               | 63.7%                                                      |
| OT referral made<br>< 24h after admission       | 43.1%                                              | 88.2%                                                      |
| Surgery performed<br><24h after admission       | 95.5%                                              | 96%                                                        |
| Patient sat out for 2h<br>on Day 2              | 59.7%                                              | 91.2%                                                      |
| Patient walked on<br>Day 3                      | 68%                                                | 91.2%                                                      |
| Post-operative<br>complications                 | 31.2%                                              | 36.2%                                                      |
| MTS score recorded<br>on admission              | 28.4%                                              | 86.2%                                                      |
| Barthel score recorded<br>on admission          | 18%                                                | 86%                                                        |
| Average length of stay<br>(days)                | 17                                                 | 12                                                         |
| %patient mortality on<br>ward                   | 9.8%                                               | 9.8%                                                       |

**Table 1.** Pre and post project set up, elderly trauma unit; Queen Alexandra Hospital, Portsmouth

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