Audit

Treatment of osteoporosis: missed opportunities in the hospital fracture clinic

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Aim: To identify what proportion of patients who, having sustained an initial distal radial fragility fracture and a subsequent femoral neck fracture, had had their osteoporosis addressed in the interval between the two events.

Patients and Methods: The hospital electronic information system was used to identify all patients aged over 50 years treated for a distal radial fracture, in our fracture clinic, between 1995–2000. In addition all patients admitted to our hospital, during the same time period, with a femoral neck fracture were identified.

Results: A study cohort of 74 patients were identified. The proportion of patients who received investigation of, or treatment for, osteoporosis between their wrist and femoral neck fracture was 8% whereas 84% did not.

Conclusions: Current mechanisms for identifying patients with osteoporosis before they sustain a femoral neck fracture are inadequate.

Key words: Osteoporosis – Distal radial fracture – Femoral neck fracture

Osteoporosis is often referred to as the 'hidden killer' and results in over 200,000 fractures each year in the UK causing significant morbidity and mortality to the elderly population, as well as incurring a serious cost to the National Health Service (NHS).¹ In the current political and socio-economic environment, the NHS can ill afford to miss any opportunities for prevention of these fractures. It has been shown that treating osteoporosis in target groups can significantly reduce the incidence of subsequent osteoporotic hip fractures.^{2–4} The identification of a fragility fracture, such as a low-energy distal radial fracture, should alert clinicians to the diagnosis of osteoporosis.^{1,5} Having identified osteoporosis, it is possible to treat the bone mineral loss in these patients before they go on to sustain a much more serious fracture of the femoral neck. This would

lead to a reduction in the incidence of subsequent femoral neck fractures by 30–60%.^{1,5}

The aim of our study was to identify what proportion of patients who, having sustained an initial distal radial fragility fracture and a subsequent femoral neck fracture, had had their osteoporosis addressed in the interval between the two events.

Patients and Methods

Using the comprehensive hospital electronic information system, all patients aged over 50 years treated for a distal radial fracture, in our fracture clinic, between 1995–2000 were identified. In addition, all patients admitted to our hospital, during the same time period, with a femoral

Figure 1 Age and sex distribution of study group.

neck fracture were identified. The two groups were cross-referenced to produce a single cohort of patients, with both injuries. The patients' medical records were examined. Those patients who sustained the femoral neck fracture prior to, or concomitant with, their distal radial fracture were excluded. In addition, all high-energy injuries were excluded.

Using a proforma, we examined whether the patient had received any information, investigation, or treatment relating to osteoporosis before they sustained their fractured neck of femur. The demographic details and timing of events were also recorded. Data were entered into Excel (Microsoft) and analysed.

Results

There were a total of 2927 wrist fractures and 1354 femoral neck fractures identified between August 1995 and November 2000. Cross-referencing identified 98 patients in both groups. Of these, 24 were excluded based on the above exclusion criteria. This resulted in a study cohort of 74 patients (67 females, 7 males), with a median age of 83 years (range, 55–99 years) as shown in Figure 1. This amounted to 2.5% of wrist fractures and 5.5% of femoral neck fractures. The mean time interval between the initial wrist fracture and fractured neck of femur was 2.2 years (range, 0–5 years). The proportion of patients who were undergoing treatment for osteoporosis at the time of their wrist fracture was 8% ($n = 6$; Table 1). The proportion of patients who received investigation of, or treatment for, osteoporosis between their wrist and femoral neck fracture was 8% ($n = 6$; Table 2). The total proportion of patients who did not receive any investigation of, or treatment for, their osteoporosis was 84% ($n = 62$).

Discussion

Osteoporosis is a potentially lethal disease and one which is, by and large, ignored in the elderly patient population despite attempts by groups such as the National Osteoporosis Society (NOS) to move the issue up the political agenda. It has been shown that osteoporosis will affect 1 in 3 women and 1 in 12 men over the age of 50 years⁶ and that every 3 min someone has fracture as a consequence of osteoporosis.¹ There are 200,000 osteoporotic fractures each year in the UK costing £942 million to treat.^{1,5} In 1990, there were an estimated 1.66 million hip fractures world-wide and this is expected to rise to 4.5 million by 2050.⁷ Each hip fracture costs £5000 to treat with the cost rising to £12,000 if the extra costs of residential care are included.^{1,3,4} Some 35% of patients never leave care, costing a further £7000 per year.⁴ Although it is not cost-effective to treat the whole of the general population above the age of 50 years, it is beneficial to both the patient and the health service providers to treat targeted groups.^{1,3-5} Treatment of a targeted group of patients will reduce the numbers of subsequent femoral neck fractures by 30–60% in that target group.^{1,5} Naturally, reductions in the number of femoral neck fractures in the order of this magnitude would represent a massive saving to health care providers.

Femoral neck fractures account for a significant proportion of the workload in any orthopaedic department. In view of this, it is in the interest of every orthopaedic surgeon to facilitate the treatment of osteoporosis. Despite this, it is not the remit of the orthopaedic team to treat this condition; however, they are in an ideal position to identify patients who have this serious disease. Any person who

Table 1 Patients already on treatment, or under investigation, for osteoporosis at time of wrist fracture, with nature of this intervention stated

Case 1	Was on calcium supplements
Case 2	Was on calcium and vitamin D supplements
Case 3	Was on hormone replacement therapy
Case 4	Was on hormone replacement therapy and a bisphosphonate
Case 5	Referred to hospital specialist
Case 6	Referred to hospital specialist

Table 2 Patients who received treatment, or investigation, for their osteoporosis between their wrist and neck of femur fractures, with nature of the intervention stated

Case 1	Commenced on bisphosphonate
Case 2	Commenced on calcium supplements
Case 3	Investigated for osteoporosis, no treatment commenced
Case 4	Commenced on calcium and vitamin D supplements
Case 5	Commenced on bisphosphonate
Case 6	Investigated for osteoporosis, no treatment commenced

suffers a distal radial fracture following a fall from less than body height has, by definition, osteoporosis.^{1,2,5,8} Consequently, all patients who are seen in fracture clinic with a fragility fracture of the distal radius should be referred to their primary care team for appropriate investigation and/or treatment of their bone mineral loss.^{2,5,6,8} The cost of a DEXA (dual energy X-ray absorptiometry) scan has been estimated to be as low as £85 and the cost of treatment either in the form of lifestyle advice through to bisphosphonates is extremely low, ranging from £23–335,¹ when compared to the cost implications of a femoral neck fracture. Indeed, clear guidelines have been drawn up by the Department of Health (DoH), The Royal College of Physicians and the NOS for the primary care team to follow once the patient has been identified to them.⁹ This naturally relies on the orthopaedic team alerting the primary care teams to the fact that the patient has suffered an osteoporotic fracture.

From our results, it is clear that only a small percentage of patients (16%) had any sort of attempt made to investigate or treat them for osteoporosis. This highlights significant missed opportunities for both the patient and the health service, which are opportunities that can ill afford to be wasted.

We would propose that a mechanism be implemented in all hospital fracture clinics to enable every patient who presents with an osteoporotic wrist fracture to be automatically identified to their primary care team. This may be accomplished by way of a letter being generated automatically to accompany the routine out-patient correspondence. This letter should help to direct the primary care team to the DoH guidelines.⁹ In addition, the patient should be given a simple leaflet explaining the nature of osteoporosis and advising them to contact their

general practitioner for further advice and treatment. This is important by virtue of facilitating the involvement of the patient and allowing them to take some of the responsibility for their own health.

Conclusions

Current mechanisms for identifying patients with osteoporosis before they sustain a femoral neck fracture are inadequate. We believe this is an issue that warrants immediate attention from a multidisciplinary approach, including orthopaedic surgeons, primary care teams, trust administrators, and not least, the government.

References

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