The multidisciplinary management of hip fractures in older patients

Anna H K Riemen

James D Hutchison

Abstract

Older patients presenting with hip fractures are some of the frailest and sickest patients in hospital. In addition to complex medical problems and comorbidities, they have to overcome the additional physiological challenges posed by the hip fracture itself, and subsequent surgery. Hip fracture associated morbidity and mortality at one year remains high. Published guidelines stress the need for a multidisciplinary approach and the importance of the care environment for good outcomes. A combined management approach identifies and addresses not only the surgical but also the complex analgesic, medical, cognitive, nutritional, social and rehabilitation needs of our patients, thereby improving outcome for our patients.

Keywords Hip fracture; multidisciplinary; occupational therapy; orthogeriatrician; patient centred care; physiotherapy

Introduction

The lifetime risk of sustaining a hip fracture in the United Kingdom from age 50 is around 11% for women and 3% for men.[1] Hip fractures have a devastating impact on patients including death, depression, disability, institutionalisation, fear of falling, and social isolation.[2,3] Older patients presenting with hip fractures comprise some of the frailest and sickest patients, with complex medical problems and comorbidities, who have to overcome the additional physiological challenges posed by trauma and surgery.[4] Consequently, hip fracture associated morbidity and mortality remains high, with approximately 10% of patients dying within 1 month, 30% at 1 year and 80% at 8 years following hip fracture.[5–7] Death tends to be associated with a patient's comorbidities, rather than the hip fracture itself. Nearly 40% of patients will not return to their pre injury residence.[8]

Published guidelines stress the need for a multidisciplinary approach and the importance of the care environment for good outcomes. The Scottish Intercollegiate Guidelines Network (SIGN), the National Institute for Clinical Excellence (NICE), and the British Orthopaedic Association in cooperation with the British Geriatric Society, have all produced guidelines supporting a multidisciplinary team approach and stress the need for inclusion of a geriatrician from the time of admission.[9–11] Simple steps, such as a formal falls assessment, have been shown to reduce morbidity and mortality in hip fracture patients.[9–14]

A combined management approach (Box 1) identifies and addresses not only the surgical but also the complex analgesic, medical, cognitive, nutritional, social and rehabilitation needs of these patients, with concomitantly improved outcomes.[8] A recent Cochrane review found that older patients, who are part of enhanced multidisciplinary care and rehabilitation models, had lower complications rates, reduced length of hospital stay and institutional placement, as well as better function and achievement of pre-injury walking ability.[15]

It is recognized that a team approach with excellent communication between all the members is essential. The multidisciplinary team looking after hip fracture patients is large (Figure 1), and each role is important in the jigsaw of care.

Accident and emergency (A&E)

At the start of the patient's journey through the hospital system, their initial management lays the foundation for subsequent care. Rapid assessment and first line investigations for patients suffering a hip fracture can identify other injuries and medical conditions early, allowing timely optimisation for surgery.[4] The "Scottish Standards of Care for Hip Fracture Patients" records each hospital's performance, aiming for 100% of hip fracture patients attending A&E to have all of the "Big Six" interventions carried out – analgesia prescribed, NEWS score recorded, pressure areas assessed, intravenous/oral fluids prescribed (as clinically appropriate), bloods taken, and cognition screening performed. A structured hip fracture pathway can provide a tool to achieve this, prompting every member of the team, and allowing for documentation to avoid duplication. Several hospitals have also successfully introduced fast-tracking of hip fracture patients through A&E; however it is important that good clinical care should not be prejudiced by an administrative "tick box" drive to achieve an arbitrary standard.

Nurses, nurse auxiliary and advanced nurse practitioners

Nurses have a key and essential role in providing the care for these complex patients. Nurses are uniquely placed to spend time communicating with the patient and carers and finding out about a patient's pre-injury or pre-confusion state.

Pressure care is essential and ward nurses will continue and expand on the initial care delivered. Patients may already have a pressure area problem from prolonged lying on the floor following a fall, may be malnourished and/or dehydrated, and have pre-existing poor mobility – all leading to increased risk.

Hip fracture patients often do not achieve their required nutritional intake. Poor nutrition is a risk factor for poor wound and fracture healing. Prolonged repeated fasting times can be detrimental to health and rehabilitation, and nursing staff are excellently placed to liaise with surgical and anaesthetic staff to minimize pre-operative fasting times.

Anna H K Riemen *BSc Hon Biochemistry MBChB MRCSEd Speciality Registrar in Trauma and Orthopaedics, STMTI-Wellcome Trust Clinical Fellow, Regenerative Medicine Group, Arthritis and Musculoskeletal Medicine Programme, University of Aberdeen, Institute of Medical Sciences, Foresterhill, UK. Conflict of interest: none declared.*

James D Hutchison *PhD FRCSEd FRCSEng FRCSGlas FFSTEd Regius Chair of Surgery and Sir Harry Platt Chair of Orthopaedic Surgery, Honorary Consultant Orthopaedic Surgeon, Department of Surgery, Medical School, Polwarth Building, Foresterhill, Aberdeen, UK. Conflict of interest: none declared.*

Please cite this article in press as: Riemen AHK, Hutchison JD, The multidisciplinary management of hip fractures in older patients, Orthopaedics and Trauma (2016), http://dx.doi.org/10.1016/j.mporth.2016.03.006

A multidisciplinary hip fracture programme has seven components

Components of a multidisciplinary hip fracture programme[6,8]

- Orthogeriatric assessment
- Rapid optimisation of fitness for surgery
- Early identification of individual goals for multidisciplinary rehabilitation
- Continued, coordinated orthogeriatric and multidisciplinary review
- Liaison with other services (mental health, falls prevention, bone health, primary care, social services)
- Governance structure for all stages
- Palliative care (if fracture due or triggers terminal illness)

Box 1

Older patients admitted to hospital often undergo a functional decline due to reduced physical activity. This is in part due to the injury, but can also due to enforced bed rest as a result of devices and interventions tethering patient to their bed. In acute trauma wards there is often limited opportunity for physical activity. However, when nurses encourage patients to remain physically active and participate in self care, this decline is reduced.[16,17]

The introduction in recent years of specialist nurses to look after older hip fracture patients has proved to be very helpful, promoting sustainable high standards of care. They support the geriatricians (*vide infra*) and provide a mechanism for holistic and regular review of these frail older patients, as well as providing a vital link to family and carers.

Geriatric or hip fracture liaison nurses can provide a link to other specialities and are invaluable in providing regular geriatric input for trauma wards and *vice versa*. They coordinate and accompany the patient's journey of care, liaising with other specialities, facilitating rehabilitation, discharge and follow up planning. Having a member of staff who provides continuity and communication with everyone including the family is invaluable, particularly in an era of junior doctor shift work and the loss of the medical team structure.[4]

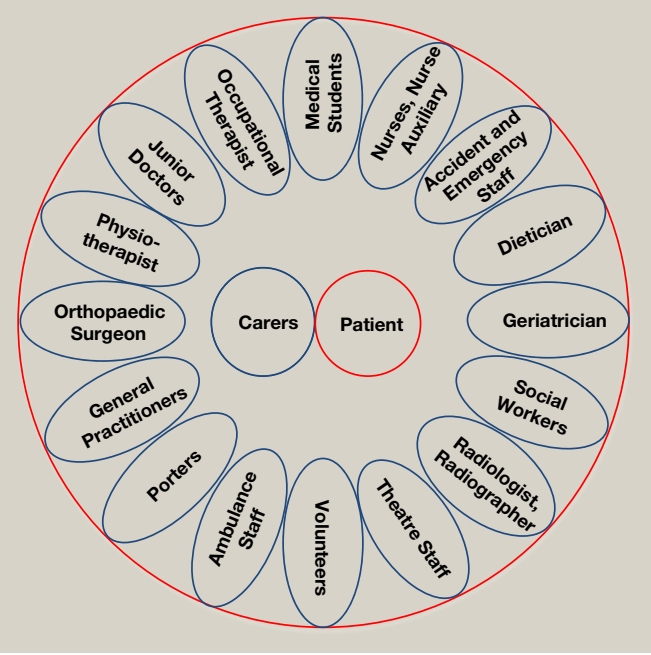

Figure 1 The multidisciplinary team involved in looking after hip fracture patients is extensive.

Physiotherapy

All guidelines recommend physiotherapy assessment and mobilisation on the first day following surgery and then at least once daily.[6] The goal of operative treatment of hip fractures is to enable immediate weight bearing without restriction, facilitating early physiotherapy assessment and intervention.[8] Inability of the patient to undertake a physiotherapy programme on the first postoperative day is a strong predictor for not regaining basic mobility on discharge.[18]

While the physiotherapist concentrates on strengthening, range of movement and gait training exercises, evidenced pathways for management following the different surgical interventions following hip fracture are lacking, and warrant further research.

In studies involving intensive physiotherapy, functional outcomes were better at discharge,[19] and in combination with early surgery and mobilisation, resulted in shorter hospital stays.[20] However, in the longer term there was little difference between standard care and enhanced intensive physiotherapy regimes, although the studies do not measure whether there was a difference in quality of life or patient satisfaction resulting from an earlier return to mobility. Strength and mobility scores were found to be better in groups of patients receiving quadriceps strengthening exercises with physiotherapy 20 minutes a day, 5 days a week for 6 weeks.[21] Continued home programmes combining physiotherapy with occupational therapy (focused on activities of daily living) result in improved balance, strength and mobility at 6 months. Similar results are achieved with aerobic exercise programmes in the community. A systematic review by Chudyk et al. found focussed exercise programmes to deliver functional improvement at three and 6 months, with any advantage disappearing by 1 year.[22]

A physiotherapist's role is wider than physical rehabilitation of the patient; through their interaction with patients and carers, they can undertake other aspects of care such as being Dementia Champions, and are key in discharge planning.

They are also well placed to contribute to hip fracture prevention through interventions such as falls groups and balance classes, for example by targeting wrist fracture patients to intervene before a hip fracture occurs.

Occupational therapy

Occupational Therapists in our unit work closely with their physiotherapist colleagues to assess and educate patients regarding safety with transferring, washing and self care. When needed they can provide aids or organize home modifications to facilitate safety and independence at home. Ideally, the occupational therapist should visit and assess patients in their own home. When it is not possible, they have to rely on relatives for information, such as the height of furniture at home, and perform assessments such as a kitchen assessment in the hospital. One

Please cite this article in press as: Riemen AHK, Hutchison JD, The multidisciplinary management of hip fractures in older patients, Orthopaedics and Trauma (2016), http://dx.doi.org/10.1016/j.mporth.2016.03.006