



Older Person Fracture Presentation and Management Including Tips for Pain Management

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INTRODUCTION

Fractures in older adults occur in patients who commonly carry chronic, complex multi-system disease. Nuanced management for these injuries is required in this patient group to reduce mortality, and morbidity and improve outcomes.

NECK OF FEMUR FRACTURE

Falls leading to hip injuries represent a quarter of all fall-related injury hospitalizations.¹ A fall in a patient over 65 necessitating an Emergency Department (ED) visit carries a 15% mortality rate at one year.² A neck of femur fracture is a common sequela that an Emergency Physician will manage after an older person falls. In Australia and New Zealand (ANZ) in 2021, there were 15,331 episodes of neck of femur fracture reported.³ Despite ongoing advances in standardization of care, the mortality rate of neck of femur fractures sits at 7.6% and 8.3% at one month in ANZ and the UK respectively with the 1-year mortality in ANZ sitting at 24.8% for 2021.^{3,4}

The morbidity for this fracture is complex. An average length of stay of between 4 and 23 days illustrates the complexity of managing these patients on the wards. There is a 29.5% rate of postoperative delirium carrying its own mortality risk.⁵ At 120 days, only 70% of these patients will return home if they came from home and 60% will require mobility aid.^{3,4} Other issues that arise include pressure area prevention, comorbidity management, and frailty.

The ANZ Hip Fracture Registry³ provides an approach for hospitals to audit the management of neck of femur fractures “against key markers of safe, high-quality care”. This registry aligns closely with the Australian Hip Fracture Clinical Care Standard.⁶ Issues highlighted in the standard and registry most pertinent to the ED include:

- early recognition of fractures
- assessment and management of pain within half an hour of presentation to the ED
- assessment of the reason for the fall and exclusion of other injuries
- screening for cognitive impairment and delirium and institution of reduction of delirium risk factors
- facilitating efficient transfer to an orthopaedic service to allow surgery to occur within 48 hours of initial ED presentation
- early concomitant referral to a geriatrician to coordinate inpatient care and rehabilitation

Delirium screening is achievable and should be standard for older patients in the ED. There are several validated delirium screening tools in common use. A simple and reliable one being the 4AT.^{7,8}

A standard approach to these patients should always include advanced care planning. As much as possible, the patient's wishes should be sought and fed into medical decision-making in their care. If this is not possible, then the next of kin should be involved. It should also be noted that fixation of neck of femur fractures can be useful as pain relief even in the palliative setting. In these cases, senior medical decision makers should be involved as early as practicable.

Something that also must be remembered is that a "simple" fall in an older adult with comorbidities can lead to significant injuries. These may be masked by confusion, medications, or other comorbidities. One way to consider these patients is using a trauma approach and making sure not to forget a secondary and even tertiary survey if admitted. Also consider why this individual has fallen. As stated in the ACEP Geriatric Emergency Medicine guidelines,⁹ "if this patient was a healthy 20-year old, would he/she have fallen?"

As outlined above, providing a structured approach to these patients during their ED stay is important. Recognition and prevention of delirium especially is key. If your service does not have a standardized approach to this patient group, then it is worthwhile to review the Australian Hip Fracture Clinical Care Standard or other more local examples depending on your situation.

TIPS FOR PAIN MANAGEMENT IN OLDER ADULTS

Different to the younger population that we usually see with traumatic injuries, in the older adult, even small doses of opiate analgesia can have deleterious consequences. Underpinning this, are the imperatives of beneficence and non-maleficence that, where acute pain resides, the physician should aim to relieve that distress. However, falls, delirium, and constipation are all significant complications of opiate use in this age group. Thus, our approach to providing analgesia may require more nuance and attempts at opiate avoidance. It is a complicated balance.

Oligoanalgesia

Oligoanalgesia, or undertreatment of pain, is sadly over-represented in the older adult cohort of patients presenting to EDs.¹⁰ This may represent inadequate practice from an ethical perspective.¹¹

Older adults who suffer from dementia frequently present to the ED after a fall. Recognizing pain in these patients can be more difficult. The clinician must try to avoid under-recognizing clinical signs, such as decreased mobility that may be evidence of pathology, such as a fracture of the lower limb.

There are tools to help clinicians look for signs of pain in non or poorly communicative patients. One of these is the PAINAD, a relatively simple, 10-point score which can be used to assess pain in non-verbal dementia patients.¹²

Different Modalities

The analgesic ladder first produced by the World Health Organization in 1986 still provides a good starting point for prescribing pain relief. Start with non-opiate analgesics then use a stepwise introduction of usually smaller doses of opiates titrated to affect. However, avoiding the use of opiates entirely clearly removes their risk of side effects. Other modalities that can be considered include immobilisation of fractures, more localized anaesthesia (e.g., regional, intra-articular, haematoma,) and procedural sedation.

An effective option for analgesia for neck of femur fractures is a fascia iliaca block, a peripheral nerve block. An ultrasound guided approach is my standard, with local anaesthetic injected in the potential space immediately deep to the fascia iliaca a few centimeters lateral to the femoral nerve.¹³ If enough local anaesthetic is used, (a reasonable approach is 2mg/kg ropivacaine, maximum 150mg, diluted to 30mL in normal saline), both the lateral femoral cutaneous nerve and the femoral nerve are blocked providing excellent analgesia for the fracture.

Another technique widely used is distal radius fracture reduction under ultrasound guided haematoma block. Anecdotally, having learnt the blind technique, watching the needle progress into the

fracture site under ultrasound and then injecting the local anaesthetic ensures a much higher success rate. This technique can safely be completed in an ambulatory care setting without the risk and equipment required for other techniques such as a Bier's block. Older patients seem more likely to tolerate a haematoma block reduction, although in some cases, small doses of anxiolysis needs to be considered.

Follow-Up Care

Close follow up care in the community for older patients being sent home with opiate analgesia also reduces associated morbidity and can help pick up early deterioration. Standardized programs can include titration of analgesics, bowel care, and physiotherapy. Communication with the patient's family and general practitioner is also important.

CONCLUSION

Fracture and pain management in the older adult is complex. Standardized protocols used to manage neck of femur fractures improves outcomes. Each practitioner should strive to provide appropriate analgesia and consider the use of alternate analgesic modalities without the side-effect profile of some parenteral options. ED screening and prevention of delirium can change outcomes. What we do in the ED matters.

KEYWORDS

Geriatric, Trauma, Analgesia, Femur Fracture, Oligoanalgesia

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