Postoperative Prevention of Falls in Older Adults with Fragility Fractures

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KEYWORDS

• Falls • Sarcopenia • Falls prevention • Fragility fracture • Postoperative care
• Falls risk assessment • Older adults • Secondary prevention of falls

KEY POINTS

- Falls and fractures are interconnected, with patients suffering a fragility fracture being at high risk of falls, especially during the postoperative period.
- Patients at higher risk of falls should be identified either at admission or during the immediate postoperative period.
- A comprehensive falls prevention plan should be established in postfracture patients. This plan should be multicomponent and directed to correct as many risk factors as possible.
- Any falls prevention plan initiated during the postoperative period should be continued as an outpatient, with appropriate multidisciplinary intervention in the community.

INTRODUCTION

Falls are associated with significant morbidity and disability in the older population. The risk of falling increases rapidly with age,[1] with one-third of people aged 65 years and older falling each year[2] and with half of such cases being recurrent.[3] Furthermore, the risk increases exponentially with the number of risk factors; 1-year risk of falling

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Case

Mrs J was an 82-year-old white woman admitted into the hospital with a right hip fracture after falling over a lamp cord in her single-level, carpeted home. She was diagnosed with 2 vertebral fractures in her lumbar spine (L1-L2) 2 years previously. She also reported 5 falls within the last year, 2 at the shopping center and 3 at home. The falls were asymptomatic and the patient was able to stand up afterward without assistance. No falls-related trauma was reported until the current presentation. She had a hysterectomy at age 45 years for fibroids; the ovaries were not removed. She experienced menopause at age 53 years and had not taken hormone therapy. She was taking a β-blocker (metoprolol), diuretic (furosemide), and benzodiazepine (lorazepam). Her dietary calcium intake was consistent, at about 250 mg daily. She did not smoke. She did not engage in regular weight-bearing exercise. The patient was 152.5 cm (5′ 0″) and she weighed 47.5 kg (105 lb). Her height had decreased 1.5 cm over the previous 3 years. Chemistry profile, thyroid studies, urinalysis, and complete blood count were normal.

The patient was assessed by the orthogeriatrics team and was taken to surgery within the first 24 hours after fracture. Her immediate postoperative (24 hour) period was good; however, the patient was confused at day 3 and was diagnosed with delirium. No evident cause of the delirium was found. Management was started with haloperidol at low dose. On day 5 postoperatively, the patient left her bed to go to the toilet by herself. Ten minutes later, the nursing staff found the patient lying on the ground with a bleeding laceration in her forehead and complaining of back pain. A computed tomography scan of her brain showed no intracranial bleeding, but a radiograph of her spine showed a new vertebral crushing in L3. The patient was still in delirium, with poor oral intake.

Three days later, the patient had significantly improved. Her oral intake was better and her delirium had resolved. Haloperidol was discontinued. The interdisciplinary team recommended transferring her to one of the orthorehabilitation beds. One week after being transferred, and while receiving physical therapy, the patient suffered a new asymptomatic fall, this time witnessed and without associated trauma. Two weeks after fracture, the patient was discharged back home, with a home visit by an occupational therapist scheduled within 2 weeks after discharge. The patient was also scheduled to have a follow-up at the local falls and fractures clinic.

doubles with each additional factor, starting from 8% with none, and reaching 78% with 4 risk factors.[4]

Several established risk factors for falls have been described both in community[2,4] and hospital settings,[5,6] with some of these risk factors increasing fracture risk as well.[7] Although only 1% to 5% of falls result in fractures,[8] hip fractures occur almost always secondary to falls[9,10] and are associated with significant morbidity, a median survival of around 2 years, and substantial inpatient and residential care costs.[11,12] Furthermore, although both bone-related and fall-related risk factors predict hip fractures,[13] fall-related risk factors are more prevalent than bone-related risk factors in patients with recent clinical fractures,[14] and falling tendency is the more important predictor of fragility fractures in the older population.[15] In patients with any recent clinical fractures, the incidence of falling again within 3 months ranges from 11%[16] to 15%,[17] with a falls rate of 1.5 to 3.5 falls per patient year.[17,18] After hip fractures, studies[19–22] showed that between 18% and 53% fall again within 2 to 6 months after subacute rehabilitation. Another study[23] showed that within 12 months, up to 56% of people fall again at least once, and 28% fall more than once, resulting in a new fracture in 12% of cases and a second hip fracture in 5% of cases. Only 1 earlier study did not find a significant increase in the falls incidence rate among patients with hip fractures compared with age-matched and gender-matched controls at 6 to 12 months after fracture.[24] However, this hip fracture cohort was noted to be less mobile and inferior on overall functional parameters compared with the control group.