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Perspective

Risk Factors and Management of Fragility Fractures in the Elderly

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ABSTRACT

Fragility fractures are common in the elderly, and they have a big impact on their quality of life by limiting their autonomy, increasing their handicap, and decreasing their longevity. Fractures in fragile people are caused by a variety of circumstances. Because present diagnostic methods have limitations, identifying fragile persons before they experience a fracture may be the most challenging task of all. This study examines the current state of knowledge on the management of fragility fractures, including risk factors, prevention, diagnosis, and the actual limitations of clinical therapy options, as well as posing new research issues.

Keywords: Fragility; Fractures

INTRODUCTION

Fragility fractures are common in the elderly. Men have a 13-22 percent lifetime risk of osteoporotic fractures, whereas women have a 40-50 percent lifetime risk of osteoporotic fractures, with men having a higher fatality rate. Patients over the age of 65 are more likely to experience negative health outcomes such as limited mobility, prolonged hospitalisation, residual disability, and a shorter lifespan. Osteoporosis affects frail patients, increasing their risk of fracture for the remainder of their life. Fragility fractures carry a hefty financial price tag. There are more than 2 million osteoporosis-related fractures in the United States, with 71 percent of women and 29 percent of men being affectedThe increasing trend in population ageing and the growing number of old people in Western countries is reflected in clinical practise. As a result, osteoporotic fractures and frail people have become a major source of concern for healthcare professionals. Fragility fractures are caused by low-energy injuries in everyday activities, which primarily afflict the elderly.

Fragility fractures of the hip and spine, in particular, have a significant impact on the health of the elderly. Fragility fractures can affect the humerus, pelvis, forearm, ribs, distal femur, tibia, and clavicle, among other body parts. The impact of a fracture on one's quality of life varies depending on where the fracture occurs. Hip fractures are dangerous, with a high one-year mortality rate in both sexes and a severe loss of personal independence. Fractures in the elderly can be caused by a variety of reasons, the most common of which is osteoporosis. As a result of significant microarchitectural degeneration of bone, osteoporosis produces a decrease in Bone Mineral Density (BMD), resulting in increased fragility. Mineralometry, or bone densitometry, is a sort of imaging that allows you to analyse and measure the density of your bones. delivering a relatively tiny dose of radiation to your bones Fracture risk is also influenced by gender: postmenopausal hormone changes have a negative impact on bone quality. Females were also more likely than males to fall, which is an independent predictor of fragility fracture. Fragility fractures are caused by falls, which are another age-related risk factor. Falls are common among the elderly, yet their likelihood is typically underestimated. Because the associated difficulties can be serious, and the recovery process can be lengthy and arduous, falls in the elderly have a major impact on life expectancy.

Diagnostic tools

Preventing fractures in frail individuals has a significant impact on their survival and is an important scientific concern. Frail persons frequently see a doctor or are admitted to a hospital for the first time when osteoporotic fractures occur, and their life expectancy has already been substantially decreased. In fact, basic radiographs are frequently utilised for initial patient assessment, followed by a CT scan or an MRI. An MRI provides more detailed information about the timing of fracture onset, particularly in vertebral fractures, based on the presence of oedema, spinal cord compression, and soft tissue involvement, whereas a CT scan characterises the fracture in all aspects (extension, 3D architecture, articular involvement). A range of clinical and radiological approaches can now be used to identify bone fragility. Dual-Energy X-ray Absorptiometry is the major diagnostic method for measuring BMD through specific scores (DXA). Low BMD is a predictor of fragility fractures.

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Treatments

The treatment of fragility fractures should be tailored to the specific

Needs of each frail patient. Due to the patient's frail condition, a fragility fracture in the elderly poses a significant challenge. This is a subject with multiple comorbidities who would need to be managed by a specialised team throughout their critical clinical picture. Trauma surgeons should engage with other professions such as nurses, physiotherapists, occupational therapists, and social workers to give the best care for these patients, according to some study. The importance of so-called ortho-geriatric comanagement in the care of these people cannot be overstated. This has a positive influence on outcomes and costs when compared to traditional single-disciplinary treatment, especially in proximal femoral fractures. Shorter lengths of stay, fewer issues and readmission rates, and greater patient satisfaction were all observed once this strategy was introduced. Fragility fractures can also be linked to other conditions, such as peripheral arteriopathy, which affects about 20% of senior citizens.

The majority of fragility fractures, especially those involving the lower extremity, necessitate surgical treatment. Patients should be operated on within 24 hours of admission, and no later than 48 hours in most cases. As a result, it's vital to maximise patient management hours and coordinate pre- and postoperative protocols. Surgical stabilisation provides a higher level of function and pain reduction for the majority of patients as compared to conservative therapy.In terms of surgery, the most prevalent location of surgical failure in fragility fractures is the interface between bone and implant. This is owing to osteoporotic bone's reduced BMD, cortical bone thinning, a higher incidence of shredding despite the low-energy injury mechanism, and a longer healing period due to its brittle and elastic nature. In many cases, biological or synthetic bone grafting, bone cements, or hydroxyapatite coatings are necessary.

The treatment of fragility fractures should be tailored to the specific

Tricalcium phosphate and Polymethylmethacrylate (PMMA) were used to increase contact area and reinforce the implant's anchoring. In any case, problems like a lack of integration or the development of heat during cure, which could be harmful to the surrounding soft tissues, as well as the risk of thermal bone necrosis, could arise.

CONCLUSION

Fragility fractures are a widespread problem that has far-reaching consequences for the global health system. Fragility fractures are common, and appropriate treatment lowers morbidity and costs. Predictive models also suggest to an increase in life expectancy, underscoring the urgent need for comprehensive health and social sector planning. The age of a person is one of the most important risk factors for the incidence of fragility fractures. Prevention is the key to mastering their treatment, which includes the use of anti-osteoporosis drugs. Treatment indications, as well as improvements in surgical time standardisation, should be available to general practitioners. A multidisciplinary approach improves the outcomes of vulnerable patients. Early diagnosis of frail patients at risk for future fractures is crucial for preventing future fractures, and this can be accomplished by improving communication between general practitioners and orthopaedic surgeons.