

OSTEOPOROSIS IN FRACTURE COLLES IN ELDERLY WOMEN : A RARE CASE REPORT

Orthopaedics

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ABSTRACT

Introduction: Osteoporosis is a progressive systemic skeletal disease characterised by reduced bone mass and micro-architectural deterioration of bone tissue. As a result, bone is increasingly fragile and more susceptible to fracture. Colles' is the common distal end radius fracture in elderly. Most common cause of colles' fracture is fall on the outstretched hand. Fracture colles' affect the wrist movements. Risk factors for wrist fractures include low bone mineral density, no previous oestrogen use, a history of two or more falls in the preceding year, and a previous fracture after the age of 50. Poor cognitive status increases the risk for wrist fracture in women over the age of 75 years⁽¹⁾. A fragility fracture is the strongest indicator of risk of future fracture. Patients who have had a fracture at any site have approximately twice the risk of sustaining a future fracture compared with individuals who have never experienced such an injury as an adult.⁽³⁾

Case: In this study we are analysing the severity of osteoporosis in 36 female patients above the age of 50 years who are diagnosed with colles fracture. A bone mineral density test was used to measure bone mineral density and compare it with an established norm or standard to give a score. After analysing the study we found that Osteoporosis is the major cause of colles' fracture in elderly women. If osteoporosis is diagnosed and treatment is started, this may prevent fragile fractures in future. Bone mineral density (BMD) testing in perimenopausal and post menopausal woman should be encouraged in masses to prevent fractures and related morbidity

KEYWORDS

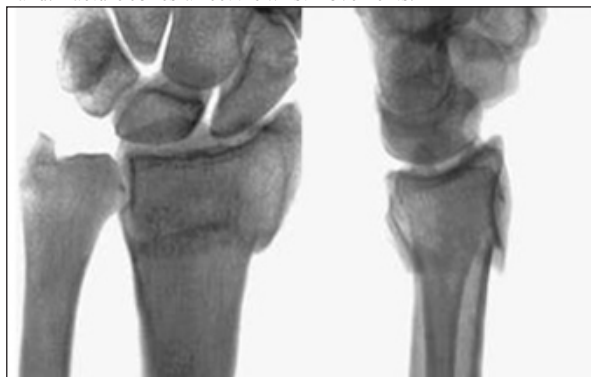
Osteoporosis, Colles fracture, Bone Mineral density.

INTRODUCTION :

Osteoporosis is a progressive systemic skeletal disease characterised by reduced bone mass and micro-architectural deterioration of bone tissue. As a result, bone is increasingly fragile and more susceptible to fracture.



Colles' is the common distal end radius fracture in elderly. Most common cause of colles' fracture is fall on the outstretched hand. Fracture colles' affect the wrist movements.



Case Study:

The objectives of the study are :

- This study is to analyse the extent of osteoporosis in elderly women with colles' fracture.
- To assess the osteoporosis according to the bone mineral density (BMD) readings.
- To see if osteoporosis is the major cause of fracture colles' due to trivial trauma.

MATERIALS AND METHOD used are :

- Patients over the age of 50 with colles' fracture.

- Prospective study spanning over 18 months.
- 36 patients with colles' fracture.

For Case Selection The Inclusion Criteria Is :

- Female patients radiologically diagnosed with colles' fracture.
- Age group above 50 yrs.
- Consent.

The exclusion criteria is :

- Open fractures.
- Pathological fractures except osteoporosis.
- Not giving consent.

The Procedure Followed To Conduct This Study Is :

- Women (>50) radiologically diagnosed with fracture colles' were tested on a BMD machine.
- A BMD test measures bone mineral density and compares it to that of an established norm or standard to give a score.

Bone Mineral Density (BMD) Is Calculated As Follows :

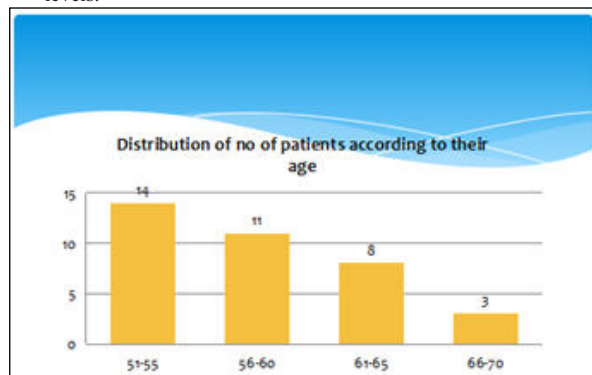
- Bone mineral density (BMD) test results are compared to the ideal or peak bone mineral density of a healthy 30-year-old adult and are given as T-score.
- A score of 0 means your Bone mineral density (BMD) is equal to the norm for a healthy young adult.
- Differences between your Bone mineral density (BMD) and that of the healthy young adult norm are measured in units called standard deviations (SDs).

World Health Organization Definitions Based on Bone Density Levels	
Level	Definition
Normal	Bone density is within 1 SD (+1 or -1) of the young adult mean.
Low bone mass	Bone density is between 1 and 2.5 SD below the young adult mean (-1 to -2.5 SD).
Osteoporosis	Bone density is 2.5 SD or more below the young adult mean (-2.5 SD or lower).
Severe (established) osteoporosis	Bone density is more than 2.5 SD below the young adult mean, and there have been one or more osteoporotic fractures.

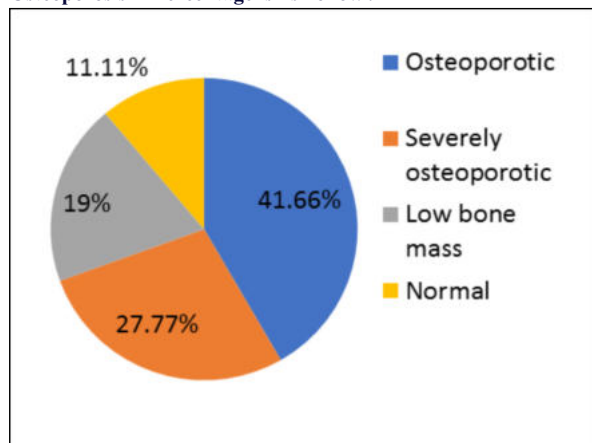
The Results Of This Study Are As Follows :

- Out of 36 females the mean age of women with fracture was of 58 yrs (range 50-70)

- Majority of women were diagnosed with either osteoporosis, severe osteoporosis or osteopenia, very few had normal BMD levels.



The Distribution Of Patients According To Severity Of Osteoporosis In Percentage Is As Follow :



The Final Outcome Of The Study Is :

- 15 (41.6%) were osteoporotic, 10 (27.7%) were severely osteoporotic, 7 (19.4%) were osteopenic and only 4 i.e. (11.1%) were normal.
- In our study, majority of patients fall under the category of either osteoporotic or severely osteoporotic i.e. 25 patients i.e. (70%)

DISCUSSION:

- Screening for osteoporosis is becoming a standard in normal regular check ups due its relation to fragility fractures.
- Literature says colles' fracture in particular when occurred with less than the usual degree of trauma then osteoporosis should be suspected.
- Other commonly involved fragility fractures occur at hip, spine, humerus and pelvis.
- Wrist fracture (colles') is the most common fracture in perimenopausal and young post menopausal women.
- Bone Mineral Density (BMD) analysis is a cheap, easy and simple non invasive procedure which can be performed on OPD basis.
- Bone Mineral Density (BMD) analysis has consistently shown accurate and reliable results in diagnosing osteoporosis.
- Bone Mineral Density (BMD) analysis does not need expertise to do the test.

CONCLUSION

- Osteoporosis is the major cause of colles' fracture in elderly women.
- Many people who sustain a fragility fracture are not tested or treated for osteoporosis.
- If osteoporosis is diagnosed and treatment is started, this may prevent fragility fractures in future.
- Bone Mineral Density (BMD) testing in perimenopausal and post menopausal woman should be encouraged in masses to prevent fractures and related morbidity

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