

PP-B-05

ATYPICAL UNILATERAL FEMORAL FRACTURE IN A POSTMENOPAUSAL FEMALE AFTER TREATMENT OF BISPHOSPHONATES AND DENOSUMAB: A CASE REPORT

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CASE

The incidence of atypical femoral fractures (AFF) and bisphosphonates with denosumab usage have not been established, although individually uncommon, yielding an incidence of 0.90 and 7.8 per 100,000 patient years, respectively. This discusses an 81-year-old female, known osteoporotic and diabetic, previously on alendronate for 10 years, ibandronate from 2020-2022, and 2 doses of denosumab (November 2022, May 2023), complaining of a 4-month history of a right thigh pain without any history of trauma or fall and improvement from physical rehabilitation. Previous X-rays did not reveal any fractures. On the day of the consult, she complained of a sudden onset of severe right thigh pain. Repeat imaging studies revealed a complete, transverse, noncomminuted fracture of the proximal femoral diaphysis. She underwent closed reduction, and intramedullary nailing with the application of autologous bone graft and was sent home well. The link between AFF and the subsequent use of bisphosphonates and denosumab should be further established in high-risk patients.

KEYWORDS

atypical femoral fracture, bisphosphonate, denosumab, antiresorptive agents, osteoporosis

PP-B-06

CLINICAL PROFILES OF PATIENTS ATTENDING TO OSTEOPOROSIS CENTER OF GRAND HANTHA INTERNATIONAL HOSPITAL (GHIH)

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INTRODUCTION

Osteoporosis is the most common chronic metabolic bone disease, which is characterized by increased fragility fracture. We aim to describe the clinical profiles of osteoporosis/osteopenia patients seen at the Osteoporosis Center of Grand Hantha International Hospital (GHIH) and evaluate DXA scan results amongst fractures in our center.

METHODOLOGY

This study is a retrospective analysis of the clinical characteristics of 137 participants above 40 years old who were referred to or directly entered into the Osteoporosis Center of GHIH from October 31, 2022 to July 14, 2023. Osteoporosis was analyzed using the WHO T-score criteria through DXA scanning, and fracture risk was calculated using the FRAX calculation method.

RESULTS

Among the 137 patients enrolled in the clinic, 117 patients have either osteoporosis in at least one site according to the T-score, or a major osteoporotic fracture risk (MOF) greater than 20% or a hip fracture risk greater than 3% by FRAX calculation. The remaining 20 patients neither have osteopenia nor an increased risk of fracture. In terms of gender distribution, 89.1% of the attendees were female patients, while 10.9% were male. The mean age of the patients is 72 years (SD 11.0), with a range from 44 to 108 years. The mean age of the fracture group is 75.69 (SD 11.21), while that of the non-fracture group is 70.43 (SD 10.6). There is a significant difference in age between the two groups ($p = 0.009$), with the fracture group being older. Among the patients, 72.9% have one or more underlying diseases, type 2 diabetes (59%) being the most common associated disease.

Regarding fragility fractures, 32.0% of female patients and 26.7% of male patients have recently experienced a fracture, but there is no significant association between gender and fracture occurrence ($p = 0.776$). BMI distributions are as follows: underweight (5.1%), normal weight (29.9%), overweight (18.2), and obese (35.8%). The mean BMI of the fracture group is 25.56 (SD 6.629), while that of the non-fracture group is 23.89 (SD 4.206). There is no significant association between BMI and fragility fractures ($p = 0.098$).

Among the 122 patients who had T-scores from DXA results, a minor discordance in T-scores was found in 48 patients (45.5%), which was defined as the lumbar spine T-score is below -2.5 but the hip T-score is between -1 and -2.4. Although there were 117 osteoporotic patients, only 104 of them received treatment. The most commonly used drug for treatment is oral bisphosphonates (32.8%), followed by SC Denosumab, IV zoledronate, and SC teriparatide.

CONCLUSION

This study demonstrates that for those identified to have osteoporosis in this institution, females predominate, and the majority of the attendees have one or more underlying diseases, with type 2 diabetes being the most common associated disease. Osteoporotic fracture is not associated with gender or BMI but is associated with aging. Oral bisphosphonates were the most commonly prescribed drug for osteoporosis in the study patients.

KEYWORDS

osteoporosis, type 2 diabetes, FRAX, bisphosphonates, fracture

PP-B-07

A LARGE AGGRESSIVE PHOSPHATURIC MESENCHYMAL TUMOR OF THE HUMERUS: SURGICAL MANAGEMENT AND BUROSUMAB THERAPY FOR TUMOR-INDUCED OSTEOMALACIA

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CASE

Tumor-induced osteomalacia (TIO) is a rare condition caused by phosphaturic mesenchymal tumors (PMTs) that overproduce FGF23, resulting in renal phosphate wasting. We present a case of a 74-year-old female with a right humeral fracture. MRI revealed a large (6.4x7.2x8.2 cm) enhancing lesion in the proximal right humerus,

confirmed as a PMT by core biopsy. Laboratory findings showed persistent hypophosphatemia and FGF23 levels >30,000 pg/mL. The PMT was excised, and impaction bone allograft fixation was performed. Pathology results indicated a non-malignant tumor but with features warranting concern. The PET scan showed no metastatic disease, and residual tumor was suspected as the cause of persistent hypophosphatemia. Postoperatively, burosumab, an antibody targeting FGF23, was initiated to restore phosphorus levels and alleviate bone pain. This case underscores the complexity of managing TIO with a large PMT, necessitating a multidisciplinary approach involving various specialties. Burosumab demonstrates promise as an effective treatment option when surgical intervention alone may be insufficient.

KEYWORDS

tumor-induced osteomalacia, phosphaturic mesenchymal tumor, burosumab

PP-B-08

CASE SERIES OF OSTEOMALACIA SECONDARY TO RENAL TUBULAR ACIDOSIS TYPE 1 WITH VITAMIN D DEFICIENCY

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CASE

Osteomalacia is a disease of inadequate bone mineralization. Its association with RTA type 1 is less established. Early recognition is essential to treat and prevent osteomalacia. We report 2 cases of Malaysian females with osteomalacia and RTA type 1. The first patient, 36 years old, was wheelchair-bound. Initial BMD showed a hip Z-score of -3.9 and a T-score of -4.0. Recent BMD showed a hip Z-score of -1.5 and a T-score of -1.6. The second patient, 38 years old, presented with muscle weakness and bone pain. The vitamin D level was 9.6 nmol/L. Initial BMD showed a T-score of -2.1. The latest BMD showed a T-score of 1.7 and a Z-score of 1.7. Both patients made a complete recovery after initiation of treatment. Type 1 RTA may present later with osteomalacia. Correction of acidosis along with the concomitant correction of vitamin D is crucial to successfully treat these patients.

KEYWORDS

RTA Type 1, osteomalacia, vitamin D deficiency