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Atraumatic diplaced bilateral femoral neck fracture in a patient with hypophosphatemic rickets in postpartum period: A missed diagnosis

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ABSTRACT

INTRODUCTION: Simultaneous bilateral femoral neck fracture is an uncommon condition. There are very few cases reported in the literature and most of these cases have underlying bone pathologies such as renal osteodystrophy and osteomalacia. In some cases bilateral femoral neck fractures occur due to generalized seizures or high-energy trauma.
PRESENTATION OF CASE: In this case report "atraumatic bilateral femoral neck fracture in a 26 year old woman in postpartum period with hypophosphatemic rickets disease" is presented.
DISCUSSION: Femoral neck fractures are more frequently seen in elderly because of the reduction of bone quality and developing osteoporosis. In the literature generalized epilepsy, osteomalacia, hypovitaminosis D and chronic renal failure are shown as facilitating causes of bilateral femoral neck fractures. In patients without any additional pathology electric shock, electroconvulsive therapy, and high-energy trauma can lead to femoral neck fractures. In our patient there was also an underlying pathology, she has been followed due to autosomal recessive hypophosphatemic rickets disease since she was one year old. In the treatment of bilateral femoral neck fractures open/closed reduction internal fixation or hip arthroplasty are applied.
CONCLUSION: For patients with bone metabolic diseases and/or the patients in pregnancy and postpartum period, preventive measures should be increased to reduce the risk of pathologic fracture. Admitting to the hospital physicians must be more careful about detecting fractures in these patients.

1. Introduction

Simultaneous bilateral femoral neck fracture is an uncommon condition where femoral neck fractures are seen more frequently in elderly because of the reduction of bone quality and developing osteoporosis. There are very few cases reported in the literature and most of these cases have underlying bone pathologies such as generalized epilepsy [1], osteomalacia [2], chronic renal failure [3]. In patients without any additional pathology electric shock, electroconvulsive therapy, and high-energy trauma can lead to femoral neck fractures occur [4,5]. In the treatment for bilateral femoral neck fractures open/closed reduction internal fixation or hip arthroplasty are applied [2,6]. In this case report "atraumatic bilateral femoral neck fracture of a woman in postpartum period with hypophosphatemic rickets disease" is presented. The operation was managed in Department of Orthopaedics and Traumatology Clinic in University Hospital. Because of the delayed diagnose we considered total hip arthroplasty instead of fixation.

1.1. Case report

A 26 year old woman who gave birth 40 days ago refered to University Hospital because of both hip pain and difficulty of walking. In her history about 20 days after the birth, she was brought to emergency department because of the complaints of a sudden pain in both hips. She said while she was sitting and breastfeeding suddenly she felt extreme pain in both hips and couldn't move her legs. At the emergency department because of no history of trauma the patient didn't undergo X-ray imaging. The patient's calcium levels in the blood chemistry were measured as 4.9 mg/dL (8.6–10.2) and admitted to endocrinology service for treatment of hipocalcemia. Blood values at endocrinology service were as Parathormone (PTH): 178.3 pg/ml (15–65), Albumin: 4.08 g/dL (3.5–5.2), Inorganic Phosphate (P): 2.9 mg/dL (2.5–4.5), Alkaline Phosphatase (ALP): 258 u/L (35–105), 1–25OH D3: 10 mg/dL (20–50). In bone densitometry (DEXA) osteoporosis has been identified in the lumbar spine and osteopenia was identified in the femur. Any pathology in cranial magnetic resonance imaging (CrMR) and electroencephalogram (EEG) was not observed. After 17 days follow up her complaints didn't decline and she was consulted with orthopeadic.

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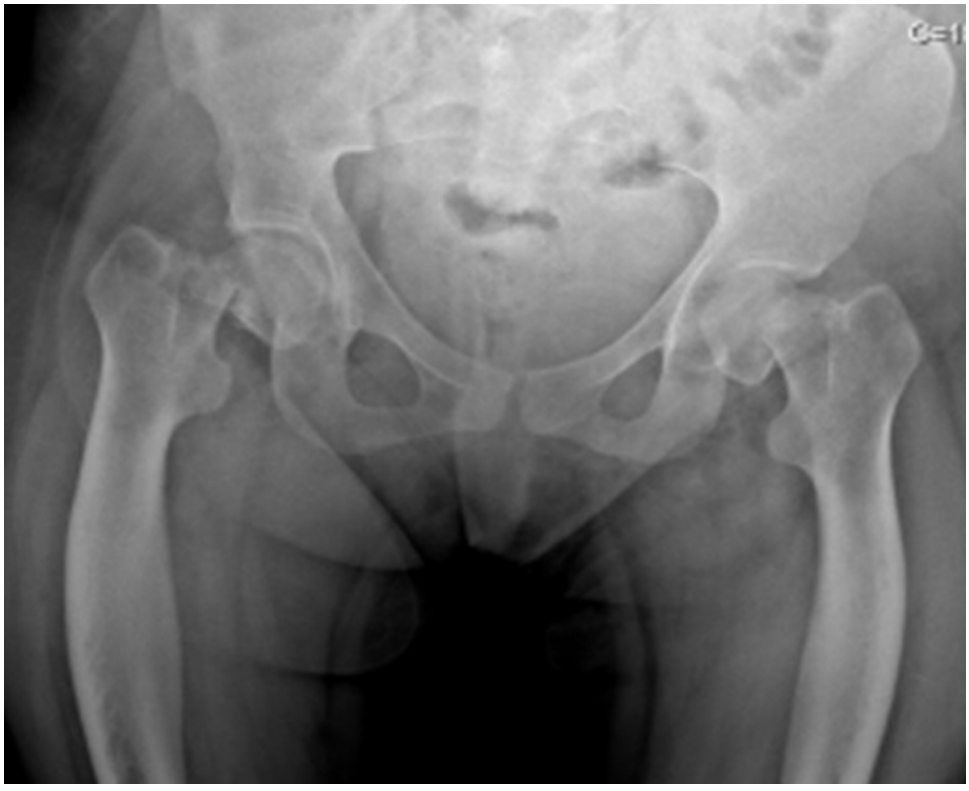

Fig. 1. Pelvic anteroposterior radiograph, showing delayed femoral neck fracture and deformity of the both femur.

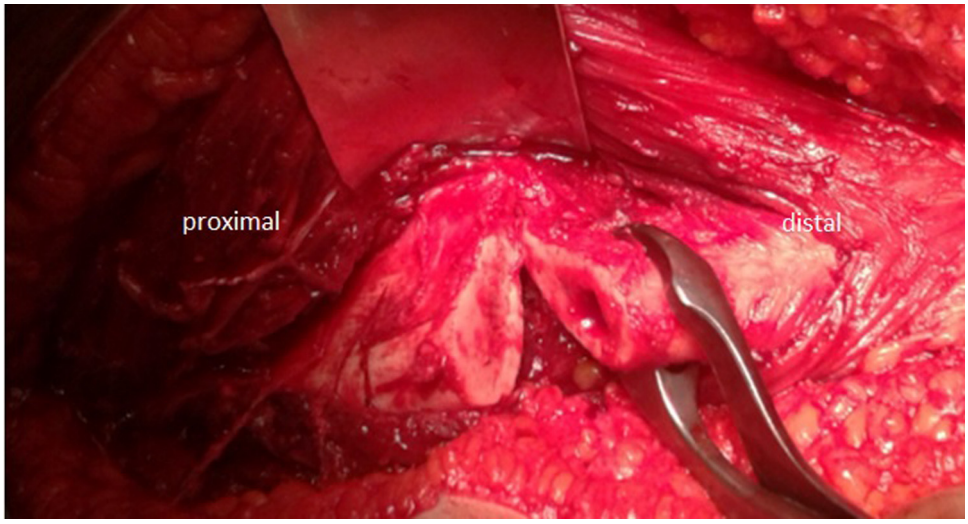

Fig. 2. Intraoperative view of the femoral deformity and performed osteotomy.

From her past medical history; she has been followed with hypophosphatemic rickets since she was one year old, using 0.25 mcg calcitriol with calcium phosphate; and has no other diseases (epilepsy, etc.). The patient had never broke any part of her body previously and there was no similar family history.

In clinical examination; the patient's general condition was good, her lower extremities were externally rotated with deformed appearance of both thigh and there was severe pain when she stood up. Patient was unable to walk because of the pain. Both neurovascular examinations of lower extremities were normal. There was no difference between the diameter and length of limbs. Subcapital bilateral displaced femoral neck fractures were detected by radiography (Fig. 1). Because of the delayed diagnosis about 3 weeks after the fracture, we didn't consider primary fixation. Because both fractured ends were resorbed and the patient had proximal femoral deformity due to the hypophosphatemic rickets; bilateral total hip arthroplasty following corrective osteotomy was planned. Because of the high risk of morbidity and mortality surgical intervention was decided to perform in two sessions.

At first the patient underwent cementless total hip replacement surgery for her left hip and two weeks later the same procedure performed to the right hip. The operation time for both surgeries was nearly 2 h. The patient was operated in the lateral decubitus position and corrective closing wedge osteotomy was applied to the deformed femur (Fig. 2). Intraoperatively when we saw that the medullary cavity was narrow and sclerotic we used the ream-