Primary hyperparathyroidism presenting as pathological fracture and nonunion
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Abstract: Primary hyperparathyroidism revealed by a pathological fracture is very uncommon. We report a 53 year-old male patient with multiple pathological bone fractures. The diagnosis of primary hyperparathyroidism was made based on these bone changes and the elevated parathyroid hormone level. The histopathological findings confirmed the diagnosis of primary hyperparathyroidism.

Keyword: Primary Hyperparathyroidism, Parathyroid Adenoma, Pathological fracture

Introduction:
Hyperparathyroidism is a disease of increased bone resorption. Primary hyperparathyroidism is prevalent in approximately 1% of adult population and the usual causes are parathyroid adenoma, hyperplasia and, rarely, parathyroid carcinoma [1,2]. Brown tumor lesions caused by long-lasting primary hyperparathyroidism is a rare tumor-like lesion, often presenting with bone pain or by pathological fracture. We present the case of a 53 year old male who presented with multiple pathological fractures that led to the diagnosis of primary hyperparathyroidism.

Case Report: 53 yrs male patient presented to op with pain in both hips for 3 months and pain over right thigh for same duration and pt was bedridden for past 3 months .patient had history of nailing done for fracture both bone right leg 1 yr back Past H/o Nailing for # Both bone Rt leg-1yr back On examination tenderness and abnormal mobility in left hip ,right thigh and tenderness in right leg Xrays revealed neck of femur fracture on the left side ,proximal 3rd shaft of femur fracture onthe right side and non-union of both bone fracture right side.there was diffuse osteoporosis. Plain radiographs of the hands, skull, clavicle, and sacroiliac joints were performed but no abnormalities were found. Laboratory investigation undertaken and revealed increased serum calcium(13.1mg/dl),decreased serum phosphate(1.9mg/dl),serum alkaline phosphatise (120 kA unit) andincreased serum parathyroid hormone(933). Ultrasonogram abdomen and pelvis --normal study. Sestamibi scan showed increased uptake by inferior parathyroids.(8)

Surgical management: patient underwent selective inferior parathyroidectomy and histopathological examination revealed parathyroid adenoma . Despite a transient postoperative hypocalcaemia, the patient made an uneventful recovery .subsequently patient underwent nailing for shaft of femur and hemiarthroplasty for neck of femur.pt was supplemented with calcium .serum parathyroid returned to normal in successive follow up. The right side went on to heal over the next 6 months and the patient was fully weight bearing at the end of 18 months.

Discussion:
Primary hyperparathyroidism may be asymptomatic or may present with severe metabolic disease "pathological fractures and renal calculi. Skeletal manifestations in the form of brown tumors are rare and according to literature occur in less than 2% of patients suffering from any form of hyperparathyroidism [1]. However, primary hyperparathyroidism presenting as a pathological fracture with no other systemic symptoms as in our case, is very uncommon [2]. Brown tumors are benign focal bone lesions caused by increased osteoclastic activity and fibroelastic proliferation, encountered in primary or more rarely secondary hyperparathyroidism [3]. These tumors are commonly found in the pelvis, ribs, sternum, femur, jaws and rarely the vertebrae [4]. Biochemical findings and clinical findings are very helpful in making the correct diagnosis(7). In our case the diagnosis of parathyroid adenoma was confirmed by histopathology. Brown tumours present radiographically as lytic lesions with regular borders. The cortices may be narrowed but there is no breach of cortex. Our patients radiologic and biochemical parameters were consistent with features of primary hyperparathyroidism

In addition to the surgical stabilization of the long bone fractures, aggressive treatment of hyperparathyroidism by removal of parathyroid adenoma is also necessary. The increased risk of fracture disappears following parathyroidectomy [5,6]. Conclusion: Primary hyperparathyroidism is a rare cause of pathological fractures. Stabilization of the fracture and removal of parathyroid adenoma are essential for treatment. This case report adds to the existing literature as it describes an unusual presentation of primary hyperparathyroidism.
References
