



**Parathyroid adenoma as a cause for pathological fracture - a case report**

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**Abstract :**

A case of primary hyperparathyroidism with pathological fracture of the shaft of the left femur, treated with parathyroidectomy, is reported. A lady, aged 45, presented with pathological fracture of the left femur and a swelling in the neck, just cephalad to the medial end of the clavicle. On investigating, she was found to have elevated levels of serum parathormone, calcium and alkaline phosphatase. Ultrasonography revealed a hetero-echoic lesion corresponding to the neck swelling, suggestive of a left inferior parathyroid adenoma. The lesion was excised. The patient, who improved post-operatively, is currently on follow-up.

**Keyword :** primary hyperparathyroidism, pathological fracture, parathyroid adenoma, parathyroidectomy

**Introduction:**

The various presentations of hyperparathyroidism include pathological fractures<sup>1</sup>, renal

stone disease, peptic ulcer, acute pancreatitis and psychological manifestations. Any extent of diligent, assiduous care for these problems without dealing with the primary pathology will result in failure of treatment. A case of primary hyperparathyroidism presenting with pathological fracture of the left femur is reported here.

Case report:



**Fig. 1: Pathological fracture - shaft of left femur**



**Fig.2: Swelling at the root of the neck on the left side**

A lady, aged 45, presented to the out-patient department of this hospital with history of accidental fall at home followed by deformity of the left lower limb. She was unable to stand on her feet or walk. She was found to have a fracture of the left femur (Figure 1).

On examination, she was bed-ridden with a small swelling, measuring 2 cm x 2 cm in the root of the neck on the left side, just cephalad to the medial end of the clavicle (Figure 2). The left lower limb was enclosed in a tube cast extending from the thigh to the foot. Pre-operative levels of parathormone, calcium and alkaline phosphatase were estimated. Serum parathormone was 1382 pg/ml (normal range 15-65), calcium was 11.2 mg/dl (normal range 8.0 – 10.0) and alkaline phosphatase was 946 IU/ml (normal range 48 – 406).

Ultrasonogram of the neck revealed a hetero-echoic lesion, measuring 2.5 cm x 2 cm x 1.5 cm in the left para-tracheal region, lateral to the esophagus, posterior to the lower pole of the left lobe of the thyroid.

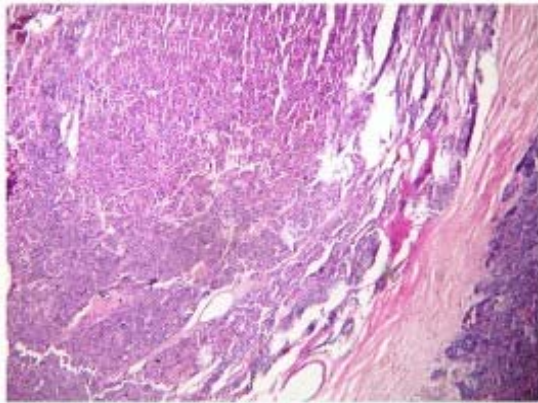


**Fig.3: Parathyroid adenoma delivered out of the wound**

**Fig. 4a: Excised adenoma - gross specimen**

**Fig. 4b: Excised adenoma - cut section**

She was posted for parathyroidectomy. At operation, the enlarged parathyroid was anterior to the recurrent laryngeal nerve, suggesting that it was the left inferior parathyroid gland (Figure 3). The enlarged gland was excised (Figure 4a, 4b).



**Fig. 5: Parathyroid adenoma - histopathology**

Histopathological examination confirmed the diagnosis of parathyroid adenoma, evident from the compressed normal parathyroid tissue surrounding the neoplastic tissue (Figure 5). In the post-operative period, the serum levels of calcium dropped to 9.6 mg/dl on the first post-operative day, dropping further to 7.9 mg/dl on the third post-operative day.

The hypocalcemia was treated with intravenous calcium infusion for 2 days, followed by oral calcium and vitamin D3 supplementation. At present, she is on oral calcium and vitamin D3 supplementation.

#### Discussion:

Primary hyperparathyroidism is of three types – type 1, presenting with pathological fractures and bone disease; type 2, presenting with renal stones and pancreatic calculi and type 3, where the patients are asymptomatic with biochemical evidence of hyperparathyroidism. However, presentation with combination of more than one type is not infrequent. This patient had type 1 hyperparathyroidism, with multiple pathological fractures. She had biochemical evidence of hyperparathyroidism. She had a palpable nodule in the left side of the neck. Ultrasonogram of the neck revealed

mixed echogenic lesion in the proximity of the left lower pole of thyroid, which was suggestive of the diagnosis suspected. Sestamibi scan is useful for localization of hyper-functioning parathyroid. However, ultrasonogram of the neck also enables anatomical localization of the parathyroid tumour as was evident in this case.

In this patient, focussed parathyroidectomy was performed, with excision of the enlarged inferior parathyroid gland, without exploring the other parathyroids.

#### Bibliography:

- 1 Hussain A, Mahmood H, Geddoa E, Hamish M, Reda AH. Parathyroid adenoma and hypercalcemia in a patient presenting with multiple pathological fractures of the long bones. *Int J Surg*, 2006; 6(6): 465-8
- 2 Wang SM, Li XX, Chang DQ, Wang JS, Huang XL. Surgical treatment for patients with primary hyperparathyroidism. *Zhonghua Wai Ke Zha zhi*. 2004; 42(9):532-9