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RESEARCH ARTICLE

ATYPICAL PRESENTATION OF A GIANT PARATHYROID ADENOMA: A CASE REPORT

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ABSTRACT

Primary hyrperparathyroidism is an uncommon condition with an incidence of 25 per 100,000 in general population. We report a case of 67 year old male with giant parathyroid adenoma, and presented with proximal myopathy. The adenoma was weighing about 40 gms. The histopathology report was atypical adenoma of parathyroid gland. The proximal muscle weakness subsided gradually and the power regained after one year.

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INTRODUCTION

Primary hyperparathyroidism frequently presents as asymptomatic hypercalcemia detected by routine biochemical screening. However, the presentation may be atypical and include a spectrum of disturbances in calcium homeostasis, ranging from symptomatic severe hypercalcemia to normocalcemic primary hyperparathyroidism. The clasical symptoms and signs of PHPT reflect the combined effects of increased PTH secretion and hypercalcemia. These are known as the "bones, stones, abdominal moans and psychic groans." About 80-90% of PHPT are due to parathyroid adenoma and these adenomas are usually smaller in size. We report a case of giant parathyroid adenoma presented with proximal myopathy (Gauger and Doherty, 2004; Meyer-Rochow *et al*., 2007; Ursu *et al*., 2010 and Dawson *et al*., 1923).

Case Report: A 67 years old male patient who was a retired factory worker, presented with complaints of difficulty in climbing stairs and rising from low lying chairs for the past 6 years. He was diagnosed to have proximal myopathy by a team of neurologists and the routine serum calcium level was elevated. On examination, he was emaciated and had a cautious gait.

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His heart rate and blood pressure was within normal limits. His higher mental functions were normal. Examination of neck revealed 3x4 cm firm swelling on left side of neck which moved on deglutition with lower limit palpable. No cervical lymphadenopathy. On indirect laryngoscopy, bilateral vocal cords were mobile. Biochemical tests revealed serum calcium of 15.5mg/dL and parathormone of 924.7 pg/ml and 24hrs urinary calcium excretion was 355mg/day. USG of the of the neck revealed 4.3x2.3 cm heteroechoic nodule posterior to upper pole of of left lobe of thyroid indenting it. USG abdomen showed bilateral kidneys normal. CT scan revealed round to oval 42x23x22mm nodule compressing posterior surface of Left lobe of thyroid and there were no enlarged neck nodes. Technetium 99 MIBI scan showed increased vascularity with non-uniform tracer uptake with subtraction image showing increased uptake in Left superior parathyroid.

After informed consent, patient was planned for superior parathyroid adenoma excision and left hemithyroidectomy. Intraoperative findings showed 3x4 cm Left superior parathyroid abutting Left lobe of thyroid gland. The adenoma was weighing about 40 gms. Immediate post op parathormone levels decreased to 48.5pg/ml and calcium was 10.5 mg/dl after 4 hrs. The parathormone further decreased to less than 1.2pg/ml and calcium levels 8.6 mg/dl after 48hrs. His final histopathology report was atypical adenoma of parathyroid gland. He is on regular follow up for last one year with

symptomatic improvement. The proximal muscle weakness has subsided gradually and the power has been regained.

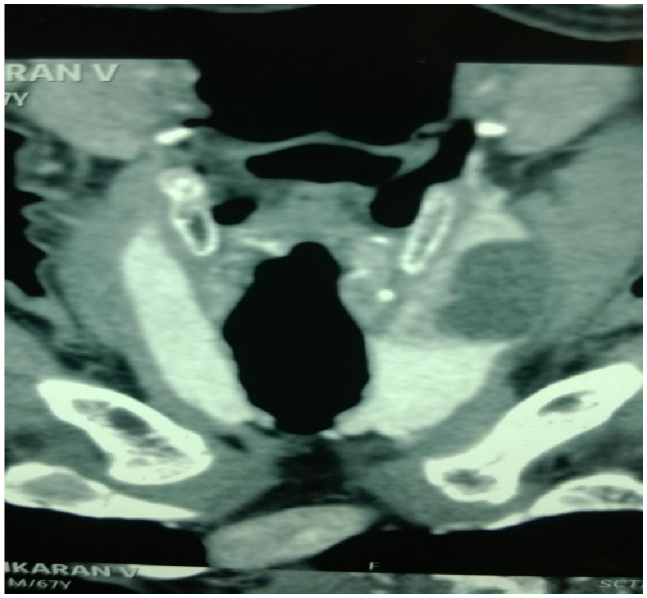

Figure 1. CT Scan showing Parathyroid adenoma

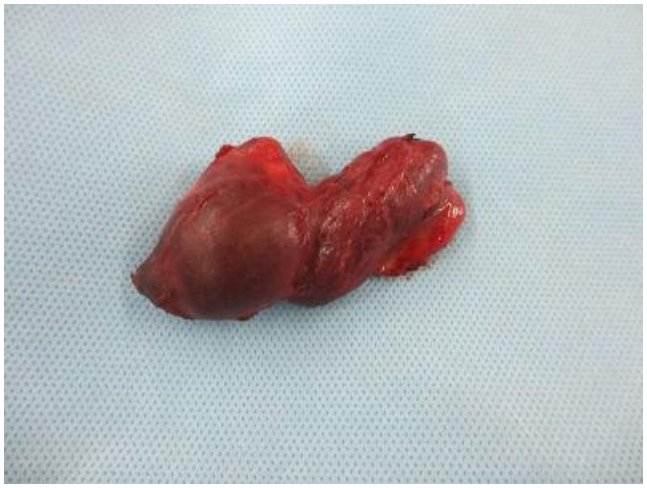

Figure 2. Specimen showing parathyroid adenoma with left hemithyroidectomy

DISCUSSION

Primary hyrperparathyroidism is an uncommon condition with an incidence of 25 per 100,000 in general population. Among this 80-90% are caused by solitary parathyroid adenoma, 10-15% caused by parathyroid hyperplasia and 1-4 % caused by carcinomas or double adenomas. PHPT is more common in elderly women with a female to male ratio of 3-4:1. The most common presentation is in the fifth decade of life. Shukla *et al* reported that Indian patients present below fourty years of age due to the prevalence of vitamin D deficiency and due to genetic predisposition. But our patient was a male and he presented at an age of 67 years (Gauger and Doherty, 2004; Power *et al*., 2005; Ruda *et al*., 2005; Shah-Patel *et al*., 2008 and Shukla *et al*., 2008). Parathyroid adenomas occur more commonly in inferior parathyroid glands. Occasionally such adenomas may be located in the mediastinum, intrathyroidal or behind the oesophagus. Our patient had an adenoma in the superior parathyroid gland on left side (Sahin *et al*., 2004). Most commonly PHPT is diagnosed in asymptomatic patients during routine serum calcium estimation as a part of evaluation for some other condition. Sometimes these patients may present with non-specific symptoms like neuromuscular weakness, vague abdominal pain, bone and joint pain, nausea, vomiting, dyspepsia, constipation, headache etc. But the classical presentation is with recurrent nephrolithiasis, pathological fracture, peptic ulcer disease and Brown's tumour or osteitis fibrosa cystica. Dawson and Stuthers described parathyroid crisis or acute hyperparathyroidism characterised by high serum calcium level (>14mg/dl) and signs of multi organ failure requiring emergency treatment. Our patient presented with proximal myopathy with no other classical features of PHPT (Meyer-Rochow *et al*., 2007; Ursu *et al*., 2010 and Dawson *et al*., 1923).

The average size of parathyroid adenoma is less than 2 cm. According to Meyer *et al* parathyroid adenomas weighing more than 30 gms are described as giant adenomas. Only very few giant parathyroid adenomas have been described so far. In Power *et al.,* 2005 reported a parathyroid adenoma weighing 110 gms. Adenoma of our case was measuring 4.5x 3.2 x 2 cm and was weighing about 45 gms (Meyer-Rochow *et al*., 2007). According to Ott *et al*. (2001) ultrasound, CT and MRI can be used to evaluate parathyroid adenomas with an accuracy of 57-68%. Reeder reported a sensitivity of 98% and specificity of 88% with ultrasonography. Cockley *et al.* (1989) designed and proposed Technetium 99m sestamibi scan for identifying parathyroid adenoma. Lumuchi *et al.* (2004) reported 100% sensitivity and 97.4% positive predictive value when CT and 99mTc sestamibi scan was combined for locating ectopic parathyroid adenoma. Neumann *et al* proposed FDG-PET scan as a cost effective diagnostic modality with higher sensitivity for detection of ectopic parathyroid adenoma (Reeder *et al*., 2002 and Neumann *et al*., 1996). Pre-operative FNAC is not very useful for histological diagnosis. Kwak *et al*. (2009) reported that 14 out of 24 parathyroid adenomas turned out to be false negative. Complete surgical excision is the treatment of choice. QPTH with a 50% reduction from the pre-operative baseline level 10 minutes after excision ensures complete removal of all parathyroid adenomas. It helps to rule out adenoma or hyperplasia of other parathyroid glands (Carneiro *et al*., 2003).

Conclusion: PHPT is not very common and most of the cases are either asymptomatic or present with atypical features. An in depth knowledge on various clinical presentations and clinical suspicion will help in early diagnosis and appropriate management.

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