



Lipoadenoma Of The Parathyroid Gland – A Rare Cause Of Hyperparathyroidism

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Abstract

Lipoadenoma of parathyroid gland is an unusual morphologic variant of parathyroid adenoma in which the glandular elements are associated with abundant mature adipose tissue. The lesion has also been reported as parathyroid lipohyperplasia, parathyroid hamartoma, and parathyroid adenoma with myxoid stroma. Most cases are functioning and are associated with hyperparathyroidism. Lipoadenoma of parathyroid gland are difficult to diagnose as a cause of hyperparathyroidism because of

rarity of these lesions and overlap with normal parathyroid tissue on microscopic evaluation. Only few cases have been documented in the literature so far. The lesion may be overlooked by both surgeon and pathologists alike, if they are not aware of this specific clinicopathologic entity.

Keywords

Hyperparathyroidism; Lipoadenoma; parathyroid

Introduction

Lipoadenoma of the parathyroid gland is a rare histological variant of parathyroid adenoma that is usually functional and associated with clinical hyperparathyroidism. It was first reported by Ober and Kaiser in 1958, and was referred as hamartoma^(1, 2, 3). The clinical signs and symptoms are indistinguishable from those of patients with ordinary adenoma. Only a few cases have been reported in the literature so far. This entity is a diagnostic dilemma because of its close resemblance with normal parathyroid gland both grossly and microscopically. Similar lesions have been reported as adenoma with unusual stromal development or as parathyroid hamartoma⁽³⁾. We report an additional case of the parathyroid lipoadenoma in a female.

Case report

A 35-years-old female patient presented with complains of generalized body ache. She had history of multiple fractures and hip joint replacement surgery. Radiographs showed

multiple stress fractures in left sided ribs and styloid process of right radius. Bone scan showed multiple hot spots in ribs, skull, clavicle, femur and radius with increased osteoblastic activity. Ultrasonography of abdomen and pelvis showed renal calculi and there was no evidence of any mass lesion. Tc-99m scintigraphy and CT scan of neck showed enlarged parathyroid gland on right side. Parathyroid hormone level was markedly increased (1114pg/ml). Patient had hypercalcaemia (11.1mg/dl) and hypophosphatemia (2.9 mg/dl). Serum protein levels and distribution were normal. Bence-Jones proteins were absent in urine. Renal functions were deranged with elevated urea and creatinine levels. Patient was taken for surgery for exploration of parathyroid adenoma. Enlarged parathyroid gland was removed from lower pole of right lobe of thyroid. The hormone levels fell after removal of glands.

Gross examination showed a circumscribed mass of tissue measuring 1.5 cms in size and weighed 2.8 grams. Cut surface was yellow and lobulated. On microscopic examination, sections showed encapsulated mass composed of nests and cords of cells admixed intimately with adipose tissue. Cells were polyhedral in

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shape, having small round nucleus and abundant pale, eosinophilic cytoplasm (Fig. 1). There were no features of malignancy like cytological atypia, atypical mitosis and necrosis. In view of the radiological findings, laboratory and clinical outcome, our diagnosis was lipoadenoma of parathyroid gland. There was marked decline in parathyroid hormone levels after surgery.

Discussion

Parathyroid adenomas are the most common cause of primary hyperparathyroidism. Lipoadenoma is an uncommon variant of parathyroid adenomas and all published cases to date are of benign neoplasm. They may occur in any age group but are more common after fourth decade with predominant occurrence in females⁽¹⁾. Grossly, these lesions are soft, yellow-tan mass with lobulated cut surface. Sometimes the myxoid appearance may be discernible grossly⁽⁵⁾. Microscopically, they show proliferation of both parenchymal and stromal components in a characteristic way. Slender, irregularly branching trabeculae of mainly chief cells are found as epithelial component which are intimately associated with large areas of adipose tissue^(4, 6). In some instances the myxomatous stroma may be a predominant component⁽⁵⁾. Other mesenchymal elements including metaplastic bone may also be found^(5,7).

These adenomas are not associated with multiple endocrine neoplasia or familial hyperparathyroidism⁽¹⁾. Their most common location is in the neck. However, Hargreaves and Wright documented a large lipoadenoma of parathyroid gland in posterior mediastinum⁽⁸⁾. They however emphasized that the large size of this rare tumor may have resulted in herniation into mediastinum giving rise to confusing clinical picture. Wolff and Goodman reported a case of intrathyroidic lipoadenoma of parathyroid gland in mediastinum⁽⁷⁾.

Lipoadenoma of parathyroid gland often create diagnostic difficulties because of the presence of adipose tissue, a feature associated with normal parathyroid glands⁽⁹⁾. In as much as they may grossly resemble lipoma more than adenoma. These tumors may be missed by surgeons as

well as pathologists. Microscopically, they may look like a normal parathyroid gland to a novice. These tumors may also be missed by parathyroid scans because of presence of large amount of fat. Ducatman et. al. have recommended utilizing intraoperative touch preparations, because frozen sections are technically difficult to process due to high fat content⁽⁹⁾. In our case, examination of multiple histopathologic sections showed neoplastic proliferation of parathyroid cells. This supported our diagnosis of adenoma.

There were many times lipoadenoma has been missed as a cause of primary hyperparathyroidism. Leacy et. al. discovered a lipoadenoma at autopsy of an elderly man with terminally detected hyperparathyroidism (raised levels of serum immunoreactive parathormone and hypercalcemia)⁽¹⁰⁾. Uden P discovered lipoadenoma incidentally at autopsy⁽¹¹⁾.

In conclusion, we would like to stress that because of its rarity and diagnostic dilemma this entity as a cause of primary hyperparathyroidism may be overlooked. The lesion may be missed by various preoperative localization studies. It may be erroneously diagnosed as a normal or hyperplastic parathyroid gland. The knowledge of this specific clinicopathologic entity is necessary, to ensure that a lipoadenoma of parathyroid gland does not go unnoticed as a cause of hyperparathyroidism.

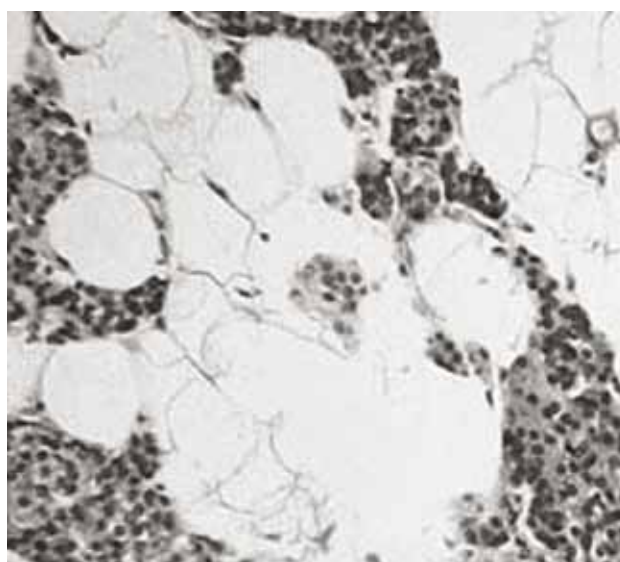


Fig. 1 : A photomicrograph showing nests of chief cells intermixed with adipose tissue. (100X, H&E stain). These histological findings mimic normal parathyroid tissue.

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