



Intrathyroid parathyroid adenoma - Report of two cases

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Abstract :

Intra thyroid parathyroid adenoma is a rare presentation. It may be frequently misdiagnosed in initial stage of the disease. Its location is usually achieved by cervical ultrasound and scintigraphy. Similarity in cytological picture between thyroids and parathyroids may further complicate diagnosis by fine needle aspiration cytology. Nuclear imaging scintigraphy accurately localizes the tumor in 90 of cases. We had two cases of intra thyroid parathyroid adenoma which confirmed by nuclear imaging scintigraphy and managed surgically.

Keyword : None. **INTRODUCTION** Primary Hyperparathyroidism is known to present with protean manifestations leading to misdiagnosis in the initial stages of the disease due to inability to locate the adenoma in an ectopic parathyroid gland¹. Aberrant migration during development may lead to intrathyroidal or other ectopic locations of parathyroid glands².

This may lead to their misdiagnosis as a thyroid nodule or failure to locate parathyroids during surgery. We herein report two cases of intrathyroidal parathyroid adenoma. In the first case, preoperative localization studies confirm the intrathyroidal adenoma. In the second case, intrathyroid parathyroid adenoma was diagnosed post-operatively after histopathological examination of the specimen.

CASE DETAILS Case 1: A 57 year old man came with complaints of decreased urine output for 10 days. He had type 2 diabetes mellitus and systemic hypertension. Clinical examination revealed no thyromegaly with no cervical adenopathy. His laboratory investigations revealed serum calcium level was 13.1 mg/dl (normal 8.6-10.2), serum phosphorous level 3.4 mg/dl (normal 2.7-4.5), serum alkaline phosphatase level 210 U/L (normal 0-270) and serum intact parathormone level 507 pg/ml (normal 15-65) and normal thyroid function test. Thyroid ultrasound revealed hypoechoic intra thyroidal .

homogeneous structure. In the lower pole of left lobe measuring 0.6 x 0.3 cms. The ^{99m}Tc-sestamibi scan revealed increased activity at the left side of neck corresponding to a parathyroid adenoma. The patient underwent surgery with Kocher's collar incision, a nodule was found intraparenchymally in the inferior pole of the left thyroid lobe, which was resected. No other pathological finding was observed, histopathological examination showed intrathyroidal parathyroid adenoma. The postoperative period was uneventful and the serum calcium level 9.4mg/dl, and serum parathormone level 68 pg/ml was normal during followup

Case 2 : A 35 old man came with complaints of swelling in front of neck with fever and pain for 3 days. He had swelling in right side of neck for 3 years neither associated with pressure symptoms nor hypothyroidism or hyperthyroidism. On clinical examination a diffuse swelling covering entire anterior part of neck. His laboratory investigations revealed WBC: 15,100 with 67 % neutrophils, Creatinine:



1.66 mg/dl, Urea: 22 mg/dl, ESR: 10 mm / hr. USG neck showed -Diffuse subcutaneous edema with, No deep seated abscess and Solitary nodule of size 5.1 x 4.9 x 6.4 cm in the right lobe of thyroid. He was managed conservatively with broad spectrum antibiotics and anti inflammatory. Cellulitis was resolved and repeat USG neck showed large 6.5x 5 x 4.7cm

nodule in right lobe of thyroid with predominantly cystic areas. serum calcium level was 13.06 mg/dl (normal 8.6-10.2), serum phosphorous level 2.42 mg/dl (normal 2.7-4.5), serum alkaline phosphatase level 582 U/L (normal 0-270), serum uric acid: 4.88 (2.5-7) and serum intact parathormone level 656.9 pg/ml (normal 15-65) and normal thyroid function test. Repeat S. Creatinine was 0.71 mg/dl. FNAC smears suggestive of cystic lesion of thyroid. The ^{99m}Tc-sestamibi scan revealed increased tracer uptake noted in the Right lobe of thyroid gland. (Fig 1) During surgery Right lobe of thyroid was enlarged (Fig 2)



and parathyroid was not found so right hemithyroidectomy was done and frozen section which reported as follicular lesion composed of Hurthle cells. Histopathological report was consistent with parathyroid adenoma of intrathyroidal location. In the postoperative period uneventful, the serum calcium level was 9.3mg/dl, serum parathormone level 94 pg/ml was normal during followup.

DISCUSSION

Diagnosis of primary hyperparathyroidism in a clinically suspected case is suggested by hypercalcemia, hypophosphatemia, raised levels of bone specific alkaline phosphatase and

raised intact parathyroid hormone (PTH) levels. Anterior neck mass may occasionally be palpable in a case of parathyroid tumor. The superior and the inferior parathyroid glands originate from the 4th and the 3rd branchial pouches respectively and migrate caudally to occupy their normal positions in relation to the thyroid gland. Any aberrancy during this descent may lead to ectopic locations of these glands. They may be located in posterior mediastinum behind the cervical esophagus, retrosternally in the anterior mediastinum, within the thymus (intrathymic), in the tracheo-esophageal groove or unusually within the thyroid parenchyma (intrathyroidal)². Ectopic location of parathyroid gland is an important reason for failure to locate the gland during surgery. Pre-operative 99mTc Sestamibi scan helps in localizing the tumor accurately in almost 90% of patients³. It has a greater role in localizing ectopic glands which helps the surgeon in planning the surgical approach, as in all our cases. Ultrasonography (USG) is a convenient and economical and has an acceptable sensitivity and specificity of 73% and 100% respectively⁴. Intraoperative PTH assays can be done, and a 50% or more decline from baseline within 10 minutes of excision confirms successful surgery⁵. Fine needle aspiration cytology (FNAC) studies may help to supplement studies on FNAC of parathyroids may occasionally be confused with thyroid tissue. The cytological features of oxyphil cells and chief cells (the latter, devoid of cytoplasm) present in the parathyroid adenoma resemble Hurthle cells and lymphocytes respectively⁶. We could see the similar picture in case 2. However in a suspected intrathyroidal parathyroid adenoma, the patient may be subjected to hemithyroidectomy when other sites of ectopic gland have been excluded¹.

CONCLUSION Intra parathyroidal adenoma are present in 3% of patients submitted to parathyroidectomy.

Nuclear imaging scintigraphy accurately localizes the tumor in 90% of cases. When a pathological gland is not found during surgery for primary hyperparathyroidism, an ectopic parathyroid gland including an intrathyroid adenoma should be considered in such cases. Thyroid lobectomy affords the best results.

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