

# Ectopic lipoadenoma of parathyroid

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A parathyroid lipoadenoma is a very rare cause of mediastinal mass. The clinical features of this pathologic entity is similar to those of the more common pathologic variants of parathyroid disease associated with primary hyperparathyroidism. A 58-year-old woman presented with huge multinodular goiter. Her thoracic CT scan was done before surgery, showed a posterior mediastinal mass. On microscopic examination, the thyroid was composed of thyroid follicles in varies sizes, compatible with a multinodular goiter and the mediastinal mass, microscopically, was composed of epithelial cells arranged in follicular and cellular nests pattern alter with abundant mature adipose tissue, morphologically closely resembled parathyroid tissue. Thyroid, mesenchymal and neuroendocrine origin for this tumor excluded by immunohistochemistry and the mass was diagnosed as a parathyroid lipoadenoma. In our case, there is a non functional parathyroid lipoadenoma with a very rare presence.

## INTRODUCTION

Lipoadenoma of parathyroid is more common in females between the ages of 35 to 62 years?<sup>[1]</sup> The clinical features of this pathologic entity are similar to those of the more common pathologic variants of parathyroid disease associated with primary hyperparathyroidism.<sup>[2]</sup> A parathyroid lipoadenoma was defined as a single adenoma with more than 50% fat on histologic examination in conjunction with primary hyperparathyroidism and resolution of hypercalcemia post-operatively reference(2)

Approximately, thirty-five cases have been reported previously,<sup>[1]</sup> but none of them were ectopic and simultaneous with multinodular goiter such as our case.

## CASE REPORT

A 58-year-old woman presented in Alzahra hospital of Isfahan in 2004 with huge multinodular goiter. Her thyroid function tests were within normal limit (euthyroid). The thyroid was such a sizable mass in the midline of neck and there was no remarkable point in patient's past medical history and all of her laboratory data (including serum calcium) were normal. The patient

underwent subtotal thyroidectomy because of very large size of thyroid. Inpatient's chest X-ray was done before surgery, widening of mediastinum, especially right paratracheal was reported. The patient's thoracic CT-scan showed a posterior mediastinal mass

The patient underwent subtotal thyroidectomy and excision of posterior mediastinal mass simultaneously. There was a large mass in the posterior mediastinum after partial sternotomy revealed that the mass was between vertebrae and superior vena cava and aorta, which was extracted completely. Therefore, subtotal thyroidectomy was done for the very large goiter.

On macroscopic examination, mediastinal mass was well circumscribed measuring 6\*4\*3 cm with rather soft consistency and a solid gray white cut surface with foci of hemorrhage and the thyroid was 54 g, measuring 7\*5\*4 cm and it was multilobular.

On microscopic examination, the thyroid was composed of thyroid follicles in varies sizes, some of them were huge follicles lined by flattened epithelium. Areas of fresh and old hemorrhage were seen within the goiter [Figure 1]. The mediastinal mass, microscopically, was composed of epithelial cells arranged in follicular and cellular nests pattern alter with abundant mature adipose tissue. Microscopic appearance of epithelial portion of the mass was closely resembled parathyroid tissue consisted of chief cells with granular acidophilic cytoplasm and clear cells with optically clear cytoplasm in a stroma with foci of myxoid change.

Immunohistochemical study (Labeled Streptavidin-biotin-peroxidase method (LSAB), DakoCytomation)

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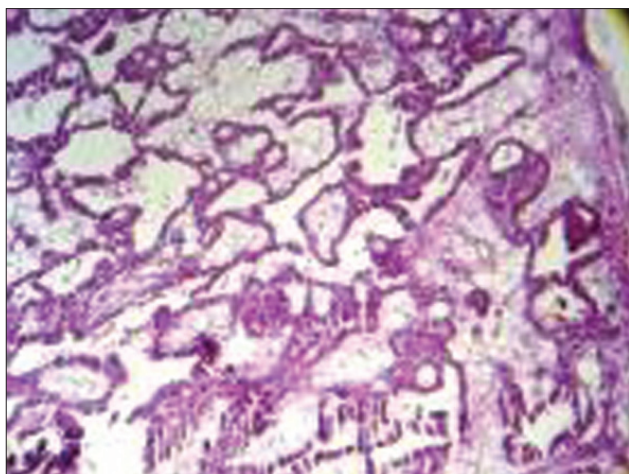


Figure 1: Figure for parathyroid lipoadenoma

revealed negativity of thyroglobulin (Tg) and calcitonin, excluding the thyroid nature of the tumor. Also, vimentin (V) and NSE (Neuron Specific Enolase) were negative, thus excluding mesenchymal and neuroendocrine tumors of this area. Since, the tumor had microscopic criteria of lipoadenoma of parathyroid. This is a very rare presentation of parathyroid lipoadenoma in posterior mediastinum simultaneous with huge multinodular goiter. After surgery, the patient discharged with well condition and normal lab data.

## DISCUSSION

Parathyroid lipoadenoma is a rare and unusual variant of parathyroid adenoma showing intermingling of chief/oxyphil cells with abundant mature adipose cells, the latter comprising 20-90% of the tumor.<sup>[3,7]</sup> At this time, there is no explanation of the pathogenesis of lipoadenoma or how it varies from other forms of parathyroid hyperplasia.<sup>[1]</sup>

Most of the cases of lipoadenoma of parathyroid are functional. None of them belongs in the category of multiple endocrine neoplasia or familial hyperparathyroidism. The clinical manifestations and the laboratory findings are (indistinguishable from those of the usual forms of primary hyperparathyroidism.<sup>[4]</sup> Approximately, 35 cases of parathyroid lipoadenoma have been reported previously, most of them presented with clinical manifestations of primary hyperparathyroidism<sup>[3]</sup> only minority of patients presented with possible hypocalcaemia-related symptoms of nephrolithiasis and hip fracture, leading to diagnosis<sup>[2]</sup> and only a few cases

had asymptomatic hypercalcemia.<sup>[5]</sup> The mean serum calcium concentration was 11.1 mg/dL.<sup>[2]</sup> Some patients (67%) had the tumor identified pre-operatively by neck ultrasonography.<sup>[2]</sup> Pre-operatively, confident localization of ectopic parathyroid adenomas, particularly those outside the neck, can be difficult. Even (pre-operative radiological imaging may not be helpful, as there are few characteristic findings.<sup>[6]</sup> There are several reports of ectopic parathyroid adenoma in mediastinum,<sup>[6]</sup> and a few reports of ectopic parathyroid lipoadenoma in the neck,<sup>[1]</sup> but there is no report of ectopic parathyroid lipoadenoma in mediastinum.

## CONCLUSION

A parathyroid lipoadenoma is a very rare cause of mediastinal mass. The clinical features of this pathologic entity is similar to those of the more common pathologic variants of parathyroid disease associated with primary hyperparathyroidism.

In our case, there is a non-functional parathyroid lipoadenoma with a very rare presentation, as a mass of posterior mediastinum, detected during pre-operative radiological imaging for a huge multinodular goiter.

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