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## Case Study

### Thyroid Adenolipoma: A Case Report

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#### ARTICLE INFO

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#### ABSTRACT

**Introduction:** The adenolymphoma of the thyroid gland is a benign encapsulated tumor composed of a thyroid follicular adenoma containing fat. The objective of the work is to discuss, through this observation, the peculiarities of this unusual entity and its differential diagnoses.

**Observation:** We report the case of a one-year-old patient with anterior neck swelling and a history of airway obstruction. Ultrasonographic examination showed a large multinodular goiter that caused compression of the trachea. Scans performed at the isthmus region showed the presence of a hyperechoic oval formation with a homogeneous ultrasound structure and regular contours. These features suggested the lipomatous nature of the nodule. Histological examination confirmed the diagnosis of adenolymphoma.

**Discussion:** The histogenesis of adenolymphomas raises three hypotheses, heterotopia of fat cells, metaplasia after hypoxia or involution of stromal fibroblasts. Patients are usually euthyroid and have anterior neck swelling with or without compression symptoms.

Their sonographic translation is in the form of hyperechoic nodules and smooth edge, without calcification or posterior darkening. Histologically, these are variable proportions of mature adipose cells, comprising 10% to 90% of the lesion with intercalated thyroid follicles of regular structure without cytologic atypia. Capsular or vascular invasion is absent. The expression of thyroglobulin and the absence of parathyroid hormone (PTH) differentiate thyroid adenolymphomas from ectopic parathyroid tissue or ectopic parathyroid lipoma. The treatment is surgical. The prognosis is very favorable.

**Conclusion** The correct preoperative diagnosis of thyroid adenolymphoma remains difficult because of the rarity of this condition. To be differentiated from its parathyroid partner.

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## INTRODUCTION

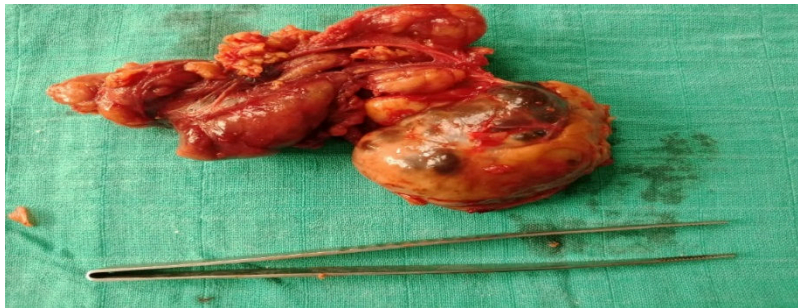
The thyroid gland derives from the floor of the pharyngeal intestine (1). Mature fat is commonly found near the capsule, around blood vessels or in connective septa of thyroid gland. The presence of fat tissue in the thyroid gland is uncommon condition (2). Lipoadenoma (also called adenolymphoma) is an exceedingly rare benign lesion, histologically, is a fat-containing thyroid follicular adenoma. Diagnosis by microscopic confirmation is involved (7).

The objective of this work is to discuss, through observation, the particularities of this unusual entity and its differential diagnosis

## CASE REPORT

We report a case of a 45 years-old female patient presenting with swelling of the anterior neck and history of air way obstruction. Ultrasound (US) examination showed a bulky multinodular goiter which caused dislocation and compression of the trachea. The scans performed at the level of the

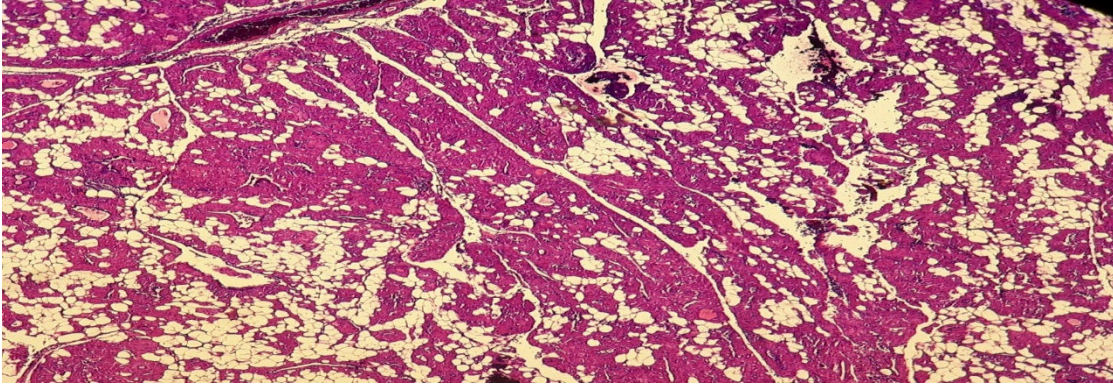
isthmus region showed the presence of a hyperechoic oval formation with a homogeneous echo structure and regular contours; these characteristics suggested the lipomatous nature of the nodule. The patient was subsequently subjected to a Computer Tomography (CT) of the neck for a pre-operative balance of the goitre and to exclude extra-thyroid pathologies. The CT scan confirmed the sonographic findings, and the probable adipose nature of the isthmus formation. After, the patient has been subjected to total thyroidectomy. The thyroid specimen measured  $7.5 \times 3.5 \times 2.2$  cm. A single intrathyroidal yellow-tan mass was identified in each of the specimen with the greatest dimension of 2.0 and 1.6 cm, respectively (figure1, 2). Microscopically, it is an admixture of thyroid acini and fat cells in all sections but in varying degrees. The thyroid acini were of small and medium size and contained normal staining colloid (figure 3).



*Figure 1: the thyroid specimen measured  $7.5 \times 3.5 \times 2.2$  cm. A single intrathyroidal yellow-tan mass was identified.*



*Figure 2: The surface appeared encapsulated. On cross section the mass looked like a thyroid adenoma with a piece of normal thyroid tissue outside the capsule, but the colour of the cut surface was more yellow than normal.*



*Figure 3: admixture of thyroid acini and fat cells in all sections but in varying degrees. The thyroid acini were of small and medium size and contained normal staining colloid. There were no signs of malignancy and no amyloid was demonstrated.*

### DISCUSSION:

Histogenesis of lipoadenoma is probably due to a heterotopia of fat cells, during embryogenesis of the thyroid, metaplasia following hypoxia or an involution of the stromal fibroblasts (2, 3, 4). The presence of fat tissue in the thyroid gland is uncommon condition (2). It's frequently found in parathyroid gland, thymus, salivary glands, breast and pancreas (2, 3). Lipoadenomas have been reported in patients with Cowden syndrome and following exposure to radiation.

It is a benign lesion but as it growth in size it can provoke swelling of the anterior neck with or without compressive symptoms, like dyspnea and dysphagia (4). The prevalence is about 1%. Kitagawa et al. [9], it predicate in women with an average age of 53 years (9). Nodules can arise in both lobes; scarcely occur in the ischemic region (5). Patients are usually euthyroid and presenting swelling of the anterior neck [4]. Ultrasound examination, adenolymphomas mostly recognize as ovoidal, hyperechoic nodules and smooth margin, without calcification or posterior darkening (9). On scintigraphy scan, the nodules are not actif (9). The fine-needle aspiration found only a follicular-shape lesion and did not reveal adipose cells. There are no cytological criteria for differentiation between a thyroid lipoadenoma and a follicular lesion (4). The evidence of a mature adipose tissue mixed with benign thyroid follicular cells must cause the hypothesis of such pathology to be discussed (11). The average size of the thyrolipomas varies from 0.3 to 25 cm (9). The adipose component is represented by a soft yellow

tissue (10). Histologically, the most lesions are formed of varying proportions (10% to 90%) of mature adipose cells, comprising 10% to 90% of the lesion, with interspersed normally structured thyroid follicles. There are no cytologic atypia. The capsular or vascular invasion is absent.

The adenomatous nature is recognized by its circumscription (5, 8). It is described that the fat component may have connection with perithyroidal adipose tissue. The dissimilarity amid thyroid and parathyroid lipoadenoma is delicate and necessitate positive thyroglobulin test (5). The main differential diagnosis of thyrolipomas is thyrolypomatosis, amyloid goiter and clear cell adenoma (lipid-rich variant). The thyrolypomatosis is distinguished by diffuse seepage of the throidien parenchyma by mature adipose tissue amid follicles without distinct capsule. The clusters of lymphocytic infiltrate and stromal fibrosis are infrequently seen (9).

Amyloid goiter can be defined as amyloid material seeping in the parenchyma, alters as well a normal tissue architecture in addition to big fat metaplasia area. Histochemical stains help confirmation of amyloid. Red cango, is considered a pathognomonic of amyloid characteristic (11), in furthermore, amyloid deposition in other organ(s) is relatively all times associated (4). Moreover, clear cell adenoma (lipid-rich variant) can show with massive steatosis of follicular cells that mimics the adipocyte cells area of thyrolipomas. Immunostaining for thyroglobulin may be useful to establish the origin of thyroid follicular cells. The expression of thyroglobulin and absence of

parathormone (PTH) differentiate thyroid adenolymphomas from ectopic parathyroid tissue or ectopic parathyroid lipoma (4). Also, pathologic cases integrated adipose tissue is lymphocytic thyroiditis, Grave's disease, encapsulated papillary carcinoma and liposarcoma (4). The definitive treatment checks with total surgical resection, the prognostic is very favorable, without malignant potential evolutionary, the complication to be feared is mechanical (4).

## CONCLUSION

Presence of fat tissue in thyroid gland and its lesions are discussed in the light of literature.

The correct preoperative diagnosis of thyroid lipoadenoma is still difficult due to the rarity of this condition. To differentiate from its parathyroid counterpart is a necessity.

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