

Matür yağ doku içeren tiroid lezyonları: 7 olgu sunumu

Thyroid lesions containing mature adipose tissue: 7 case reports

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Abstract

Lesions characterized by mature adipose tissue in thyroid gland are thyrolipoma, described as a capsulated benign nodule and thyrolipomatosis, diffuse infiltration of adipose tissue in parenchyma. Here, we present 4 thyrolipoma and 3 thyrolipomatosis cases. All cases were female with ages from 42 to 67. The median age was 56 years. Five cases presented neck mass, 1 with angerness and tremor and 1 with anemia and hypercalcemia. All cases revealed multinodular goiter in physical examination confirmed ultrasonographically and went on fine needle aspiration (FNA) biopsy. Five of the FNA biopsies were diagnosed as benign and 2 cases as suspected for follicular neoplasm. Six cases operated bilaterally whereas 1 case had right lobectomy. The surgical specimens showed multiple colloid nodules, some of which were described as implying yellow gray areas. Histologically, 4 cases had nodules with fat tissue, diagnosed as thyrolipoma. Three cases demonstrated scattered adipocytes in parenchyma known as thyrolipomatosis. Additionally, in one case fat tissue containing papillary carcinoma and in another case papillary microcarcinoma were observed. The patients had no recurrence after surgery and one case we went on radioactive iodine therapy. It is important to be aware of these lesions for preventing pathologists from misdiagnosis especially in frozen sections and cytologic materials.

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Key words: Thyrolipoma, thyrolipomatosis, papillary carcinoma, thyroid

Özet

Tiroid bezinin matür adipoz doku ile karakterize lezyonları kapsüllü, benign bir nodül olan tirolipom ve parankimde diffüz yağ doku infiltrasyonu olarak tanımlanan tirolipomatozistir. Bu çalışmada 4 tirolipom ve 3 tirolipomatozis olgusu sunulmuştur. Tüm olgular kadın olup yaşları 42 ile 67 arasında değişmektedir. Ortalama yaş 56'dır. Beş olgu boyunda şişlik, 1 olgu sinirlilik ve tremor, 1 olgu anemi ve hiperkalsemi nedeniyle başvurmıştır. Fizik muayene ile multinodüler guatr saptanan tüm olgular ultrasonografik olarak doğrulanmış ve ince iğne aspirasyon sitolojisi uygulanmıştır. İnce iğne aspirasyon sitolojilerinin 5'i benign ve 2'si folliküler neoplazi lehine kuşkulu olarak değerlendirilmiştir. Altı olguya bilateral tiroidektomi uygulanmış olup, 1 olguya sağ lobektomi yapılmıştır. Cerrahi spesmenlerde multipl koloidal nodüller izlenmiş, bunların bazılarında sarı gri alanlar tanımlanmıştır. Histolojik olarak 4 olguda yağ doku içeren nodüller mevcut olup, tirolipom tanısı almış ve 3 olgu ise tirolipomatozis olarak bilinen parankim içine saçılmış şekilde adipozite sergilemektedir. Ek olarak, 1 olguda yağ doku alanları içeren papiller karsinom ve 1 olguda papiller mikrokarsinom izlenmiştir. Cerrahi tedavi sonrası olgularda rekürrens görülmemiştir ve 1 olguya radyoaktif iyot tedavisi uygulanmıştır. Bu lezyonların farkında olmak özellikle frozen kesitlerde ve sitoloji materyallerinde patolojileri yanlış tanıdan korumak açısından oldukça önemlidir.

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Anahtar sözcükler: Tirolipom, tirolipomatozis, papiller karsinom, tiroid

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Introduction

Although the presence of mature fat is not rare in the subcapsular area of the thyroid gland, adipose tissue in the parenchyma is very uncommon [1]. Lesions including fat in the thyroid gland are thyrolipoma (adenolipoma) and thyrolipomatosis. Thyrolipomas are described as well-capsulated benign nodules containing fat and thyroid tissue [2]. Thyrolipomatosis is characterized by diffuse infiltration of adipose tissue in the thyroid gland [1]. The pathogenesis of these lesions remains unclear although there are several reports explaining the mechanism of mature fat tissue in thyroid. These lesions are rare and first patient was described by Dhayagude in 1942 [3]. Malign process in a lipomatous thyroid gland has not been reported in the literature.

Herein we report 7 cases, 3 thyrolipomatosis and 4 thyrolipoma, presenting with fat in the thyroid gland.

Case reports

Clinical findings

All 7 cases were female and aged between 42 and 67 years with a median age of 56. Five of them presented with neck mass, 1 with anemia and 1 with angerness and tremor. On physical examination, 6 of them revealed multinodular goiter confirmed by USG. One patient was detected incidentally, while being researched for anemia and hypercalcemia. All cases' thyroid function tests were normal except one who had increased thyroid stimulating hormone (TSH) level and presented with tremor. FNA biopsy was performed on every case. Two cases were diagnosed as suspected for follicular neoplasm and 5 as benign cytologically. Right lobectomy was performed on 1 case, whereas others were operated bilaterally. Clinical features of our cases were summarized in table 1.

Pathologic findings

In macroscopic examination of the thyroid specimens, the sizes of the gland ranged from

Table 1. Clinical features of the cases

Case No.	Sex	Age	Symptom	TFT ¹	USG ²	FNA ³	Macroscopic features	Histological diagnosis
1	F	54	Angerness and tremor	High TSH*	MNG**	Suspected for follicular neoplasm	1,2 cm and 1 cm solid nodules in bilaterally	Papillary carcinoma in bilateral lobes and thyrolipoma
2	F	67	Neck mass	Normal	MNG**	Suspected for follicular neoplasm	3 cm solid and 1,2 cm nodule with yellow grey area	Follicular adenoma Thyrolipoma
3	F	53	Anemia	Normal	MNG**	Benign cytology	Colloidal nodules	Nodular hyperplasia and thyrolipoma
4	F	42	Neck mass	Normal	MNG**	Benign cytology	0,3 cm solid nodule and multiple colloidal nodules	Papillary microcarcinoma and thyrolipomatosis
5	F	65	Neck mass	Normal	MNG**	Benign cytology	Colloidal nodules	Nodular hyperplasia and thyrolipomatosis
6	F	63	Neck mass	Normal	MNG**	Benign cytology	Colloidal nodules with yellow areas	Nodular hyperplasia and thyrolipomatosis
7	F	48	Neck mass	Normal	MNG**	Benign cytology	Colloidal nodules with 2 cm nodule with yellow grey areas	Nodular hyperplasia and thyrolipoma

¹:Thyroid function tests

²:Ultrasonography

³:Fine needle aspiration

*:Thyroid stimulating hormone

**::Multinodular goiter

8x4x2, 5 cm to 15x8x6 cm. All cases had multiple nodules with colloidal features ranging from 0, 5 cm to 3 cm diameter confirmed histologically. In 3 cases, some of these nodules had yellow-grey areas of which were measured 0, 7 cm, 1,2 cm and 1,5 cm in diameter, respectively. But none of these cases could be macroscopically described as thyrolipoma or thyrolipomatosis.

Microscopic examination revealed mature fat tissue containing nodules which were measuring between 0, 7 and 3 cm in greatest dimension (Figure 1). In 3 cases, scattered irregular mature fat was observed within thyroid parenchyma irregularly. None of these foci were beneath the thyroid capsule (Figure 2). The percentage of adipose tissue in all cases was between 5% and 80%.

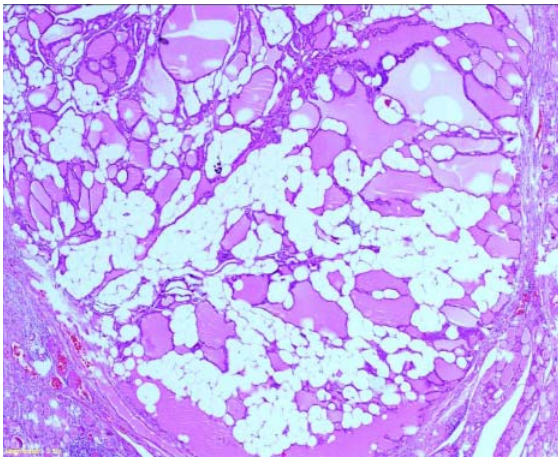


Figure 1. Encapsulated nodule containing mature fat tissue (thyrolipoma) (H&EX100)

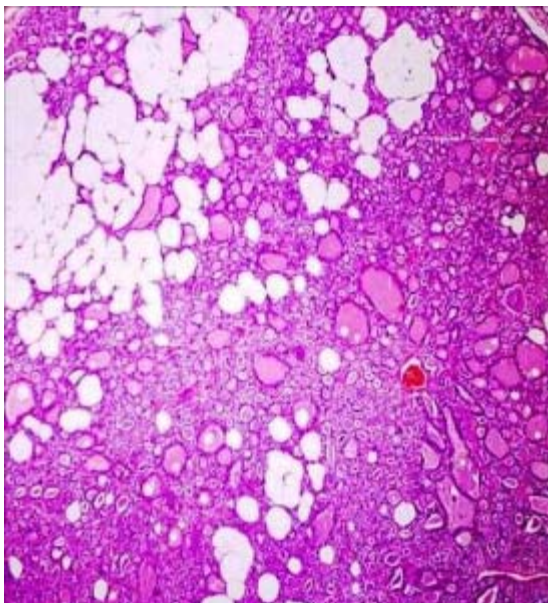


Figure 2. Mature fat tissue dispersed all over the parenchyma diagnosed as thyrolipomatosis (H&EX40)

One case had concomitant follicular variant papillary carcinoma in bilateral thyroid lobe (1,2 cm in greatest dimension the right lobe and 1 cm in the left lobe) and 1 case had papillary microcarcinoma with a size of 0,3 cm (Figure 3). Other 5 cases contained multiple nodules with colloidal features.

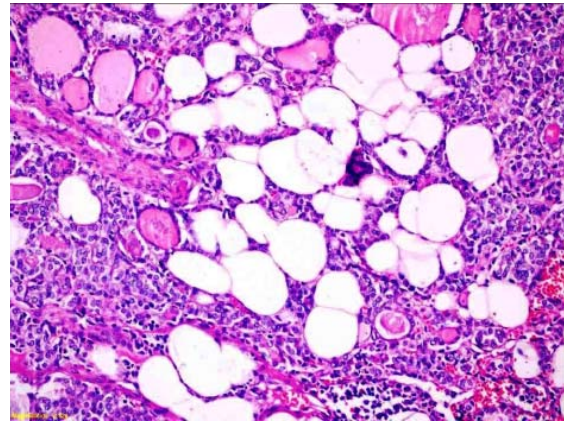


Figure 3. Mature fat tissue within a follicular variant papillary carcinoma (H&EX200)

All cases recovered well after surgery and one case with papillary carcinoma went on radioactive iodine therapy.

Discussion

Thyrolipoma and thyrolipomatosis are adipose tissue containing lesions of the thyroid [1]. Adenolipomas are well capsulated benign nodules containing fat and thyroid tissue. Adenolipomatosis is diffuse infiltration of adipose tissue in the thyroid parenchyma [2]. The pathogenesis of these lesions remains unclear although there are several reports explaining the mechanism of mature fat tissue. Schröder and Böcker suggested metaplasia of stromal fibroblasts [4]. However some authors agreed on inclusion of fat tissue during embryogenesis [5–8].

All of our patients were female. Although there were cases reported in pediatric age group median age of our cases was 56 years [1]. Most of the patients presented with neck mass similar with reported cases [1,2,7,8]. Only one patient had hyperthyroidism with elevated serum TSH level. Radiologically, all of the patients were determined as multinodular goiter.

The diagnosis of these lesions depends on histological examination, but one case reported in the literature was diagnosed concordant with thyrolipoma by ultrasonography. FNA biopsy of 3 cases were diagnosed as benign although two cases were reported as suspected for follicular

neoplasm. Demirpolat et al. reported a case with FNA biopsy diagnosed as supported for thyrolipoma [9]. However, most of the cases in the literature were reported as benign concordant with nodular hyperplasia or colloidal goiter [2,7,8].

In macroscopic investigation, all cases had enlarged thyroid lobes with multiple nodules as mentioned in Y. Ge et al.'s study [1]. The size of these colloidal nodules ranged from 0, 5 to 3 cm. All nodules were showing colloidal features. In 3 cases, mature fat tissue in nodules was also recognizable on macroscopic examination.

Microscopically, 4 cases showed nodules with mature fat tissue known as thyrolipoma. The sizes of these nodules ranged between 0,7 to 2 cm in diameter. The percentages of fat tissue in nodules were changing from 5% to 80%. Three cases demonstrated irregular mature fat tissue infiltration in the parenchyma known as thyrolipomatosis. Thyrolipomatosis was observed in 5% to 10% of the parenchyma. In one case, we recognized a synchronous follicular variant papillary carcinoma bilaterally in addition to thyrolipoma. Also we observed mature fat tissue in papillary carcinoma areas which is an uncommon feature and reported in only one case in the literature [1]. Another case comprised a papillary microcarcinoma focus with a size of 0.3 cm, also had a thyrolipoma measured 0,8 cm away from carcinomatous area.

The differential diagnosis of thyrolipoma and thyrolipomatosis include many different entities. Especially on FNA preparations, these lesions can be misunderstood as transmission from subcutaneous fat tissue during the procedure. Histologically, the most important differential diagnosis is the normal parathyroid tissue. Especially in frozen sections, parathyroid tissue may resemble thyrolipomatosis, because of the normal content of mature adipose tissue. Presence of cytoplasmic glycogen and positive immunostaining of parathormone (PTH) favors parathyroid, however, thyroglobulin positivity marks thyroid tissue [1].

Amyloid goiter often contains fat tissue but can easily be distinguished with histochemical stains such as Kongo red and Crystal violet [10,11]. The entity designated as heterotopic nests of fat cells in thyroid should be distinguished from thyrolipomatosis or thyrolipoma. Heterotopias of fat tissue in the thyroid gland locates especially subcapsular region in thyroid gland [12]. Furthermore, lipid-

rich follicular lesions should be differentiated from thyrolipoma or thyrolipomatosis. Such lesions like clear cell adenoma (lipid-rich variant) may present with massive steatosis of follicular cells that simulates the adipose tissue stroma of thyrolipoma or thyrolipomatosis. This lesion is characterized by follicular cells with small round nuclei and abundant foamy or coarsely vacuolated cytoplasm [12]. Immunostain for thyroglobulin may be useful to establish the origin of thyroid follicular cells.

In conclusion, we reported 7 cases of thyrolipoma and thyrolipomatosis. Two of these cases showed papillary carcinoma and papillary microcarcinoma as a rare feature in the literature. The lesions containing adipose tissue are being diagnosed with histological examination. Being aware of these lesions can be helpful especially in frozen sections and also histologically for identifying different entities.

Conflict of interest: The authors state that there are no conflicts of interest to be disclosed.

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