

IMMATURE TERATOMA OF THE THYROID GLAND: A CASE REPORT AND REVIEW OF THE LITERATURE

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Malignant neoplasms of the thyroid gland occur most frequently in the third and fourth decade of life, the most common being papillary and follicular adenocarcinoma. Less commonly, medullary carcinoma, undifferentiated carcinoma or lymphoma are seen, usually in older patients. Extragonadal teratoma and other germ-cell tumors occur most frequently in the mediastinum/ovary and retroperitoneum. Involvement of a variety of other organs has been reported but is generally rare. We report here a case of immature teratoma involving the thyroid gland with metastasis to cervical lymph nodes.

Case Report

A 16-year-old Saudi male presented to his local hospital complaining of left neck mass for three months. He had no other symptoms. There was no family history of thyroid disease or radiation to the neck. Past medical history was not significant. Physical examination revealed an enlarged left thyroid lobe which was completely occupied by a mass. Left hemithyroidectomy and removal of enlarged lymph nodes was performed, and the patient had an uneventful postoperative course.

Histopathologic examination revealed the presence of immature neuroepithelial tissue and scattered islands of mature cartilage infiltrating the thyroid tissue and the adjacent cervical lymph nodes (Figures 1 and 2). This morphologic appearance was interpreted as immature teratoma of the thyroid. Staging evaluation included serum α -fetoprotein and β -human chorionic gonadotropin, which were normal, normal testicular ultrasound scan, and normal CT scan of chest, abdomen and pelvis.

Postoperatively, the patient received three cycles of "adjuvant" chemotherapy with platinum etoposide bleomycin (PEB) regimen, which consists of cisplatin

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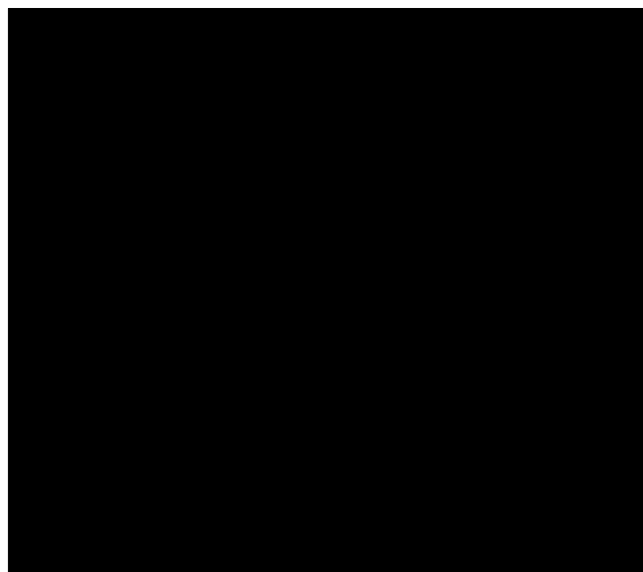


FIGURE 1. Photomicrograph featuring thyroid tissue extensively replaced by a neoplasm comprised of undifferentiated cells and cartilaginous tissue (H&E, 100x).

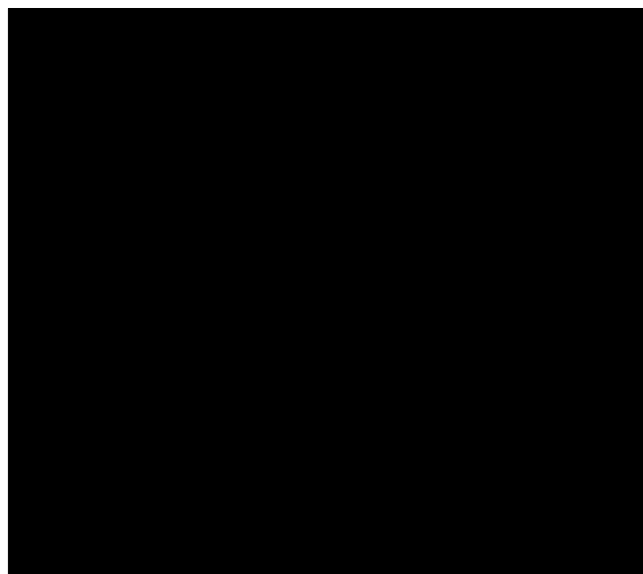


FIGURE 2. Another area within the tumor featuring undifferentiated cells forming rosettes and surrounded by fibrous tissue (H&E, 250x).

TABLE 1. *Adult thyroid teratoma.*

Author	Year of report	Age (y)/sex	Symptoms to surgery	Survival after surgery
Fritzchi ⁶	1920	41/F	–	1 month
Buckwalter & Layton ⁷	1945	23/F	6 months	9 months
Keynes ⁸	1959	24/M	4 weeks	16 months
Hajdu et al. ⁹	1967	68/F	7 months	8 months
Kingsley et al. ¹⁰	1968	10/M	–	1 year
O'Higgins & Taylor ¹¹	1975	23/F	2 years	10 months
Kimler & Muth ¹²	1978	37/F	3 months	4 months
Dhellemmes et al. ¹³	1979	20/F	4 months	22 months
Dhellemmes et al. ¹³	1979	28/F	3 months	8 months
Murao et al. ¹⁴	1979	19/F	4 years	8 months
Trotoux et al. ¹⁵	1979	28/F	3 months	8 months
Buckley et al. ⁴	1985	27/M	1 year	2 months
Ramadas ⁵	1996	35/F	2 months	10 months
Al-Sobhi	1997	16/M	2 months	66 months

25 mg/mm daily for four days and VP-16 100 mg/mm IV daily for four days. The patient was then followed by computerized tomography (CT) of the neck biannually and serum α -fetoprotein (AFP) and serum β -human chorionic gonadotropin (β -HCG). Five years after diagnosis, the patient had recurrent swelling on the right side of the neck.

Ultrasound revealed two cystic masses in the lower half of the right lobe of thyroid measuring 2.1 cm and 1.3 cm in diameter (Figure 3). Thyroid scan demonstrated three cold nodules in the right thyroid lobe (Figure 4). Fine-needle aspiration revealed a benign cellular pattern with no evidence of recurrent teratoma. AFP and β -HCG remained within normal ranges. Right hemithyroidectomy revealed only features of nodular goiter. The patient had an uneventful recovery. He was started on thyroxine replacement therapy. He continued to be free of disease six years following resection of the teratoma of thyroid.

Discussion

Immature teratoma of the thyroid gland is a rare tumor whose natural history is not fully understood. The optimal definitive surgical procedure (lobectomy, total thyroidectomy, lymph node dissection) remains to be determined. Review of the literature showed no standard management for these patients.

Although teratomas of the neck are well known in neonates and infants, teratoma within the thyroid is extremely rare. Thirteen cases of malignant teratoma of the thyroid gland have been reported in the literature. In 1908, Lurje described the first malignant teratoma of the thyroid. Most of the teratomas in neonates and infants are benign.¹⁻³ On the other hand, teratomas in adult thyroid patients are usually malignant and appear to have a poor prognosis. The extent of thyroid surgery performed in the reported cases was quite variable. Some patients underwent

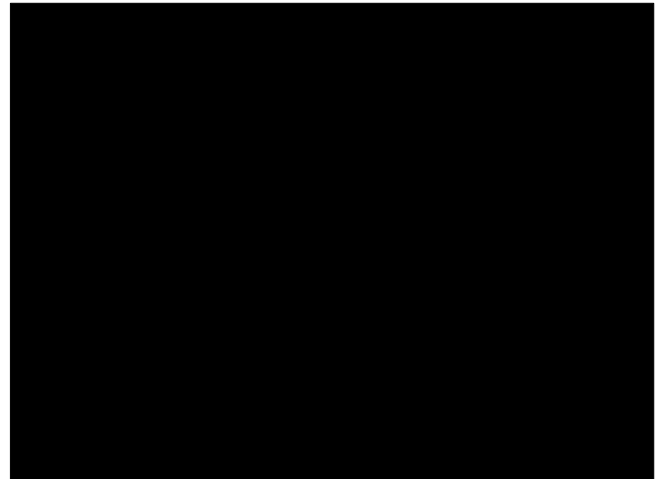


FIGURE 3. Ultrasound of the neck revealing two cystic masses in the lower half of the right lobe of the thyroid.

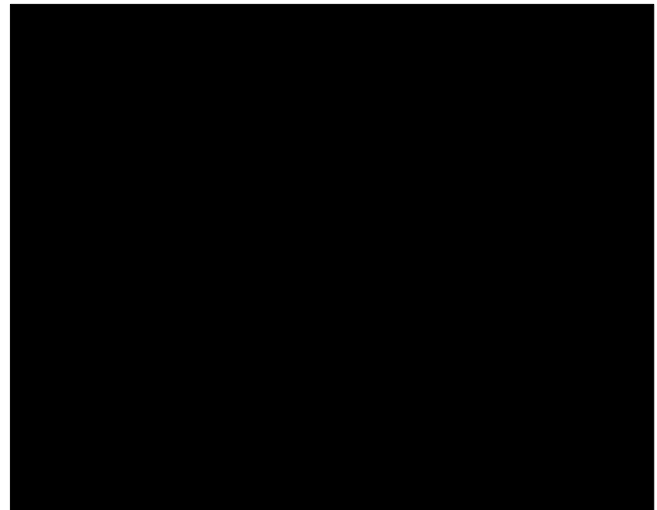


FIGURE 4. Thyroid scan demonstrating three cold nodules in the right thyroid lobe and no uptake in the left side.

total thyroidectomy, while others had subtotal thyroidectomy.⁴ Total thyroidectomy may be preferable to lobectomy, since it will make the follow-up of the patient easier.

Prognosis of thyroid teratoma is extremely poor. Ten out of 13 patients reported in the literature died within one year after diagnosis. These patients died of distant metastasis or from local recurrence of the tumor, resulting in respiratory tract obstruction. Lung metastases have been reported in two cases.^{12,13} Our patient is apparently alive and well without any evidence of disease 66 months following resection. In view of the small number of cases of teratoma of the thyroid reported in the literature, no definite consensus regarding an appropriate management has emerged. Different modalities of treatment, i.e., surgery, chemotherapy and radiation, may need to be used

in order to achieve the best results in these patients, although efficacy of any of these modalities in the management of thyroid teratoma remains to be demonstrated.

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