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Case Report

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Malignant Teratoma of the Thyroid Gland: A Case Report

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ABSTRACT

Thyroid teratomas are rare tumors. Their degree of malignancy depends on the degree of immaturity of the tissues making up the teratoma. Usually mild in children, they are mostly malignant in adults. Their prognosis is reserved, taking into account tumor aggressiveness and rate of local recurrence and/or recurrence at distance. If surgery must be performed, radiotherapy has not proven to be very effective, and chemotherapy is used as neoadjuvant treatment or after this surgery, with a limited effect. We present the case of a 44 years old woman, who consulted for a fast-growing cervical mass, with compressive signs, who had a thyroidectomia that revealed an immature teratoma of the thyroid gland. 3 months after surgery, during chemotherapy, she accused a local recurrence, that leaded to a fatal outcome 8 months later.

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Introduction

Teratomas are germ cell tumors containing histologic elements derived from the ectoderm, mesoderm and endoderm [1]. Less than 6% of teratomas arise in the head and neck [2]. Primitive Teratomas of thyroid gland are rare and represent less than 0.1% of all primary thyroid gland neoplasms [1]. The malignant potential is determined by the degree of immaturity of the tissues component the teratoma [1,3]. Thyroid teratomas can be seen at any age, but they seem to be more frequently encountered during two periods of life: during infancy, where the vast majority of them are benign; and in adults, where they tend to be malignant [1,4]. The most common clinical presentation is a neck mass with cervical lymph nodes and metastatic disease [5].

Case report

We report the case of a 44 years old woman, who consulted for a fast-growing cervical mass, discovered 3 months before, becoming hard and compressive with time. We found no particular past medical illness or notable family history. The physical examination found a hard cervical medial mass. The ultra-sound imaging showed an EU-TIRADS V multinodular thyroid with calcification, completed by a CT-scan that evoked a multinodular thyroid with a retrosternal extension and to superior mediastinum. It looked hypodense with calcifications, intimately adhering to laryngo-tracheal airways, showing signs of compression. The patient was euthyroid. In front of the compression signs, and EU-TIRAD classification, a total thyroidectomy was performed. During surgery, adhesion was important to the trachea and underlying tissues. The anatomopathological examination showed a mesenchymal tissue with round cells with extra-capsular extension and invasion of anterior muscles that needed immunohistochemistry examination. Immunohistochemistry noted positivity of epithelial antigens and of the neurofilament and the diagnosis of immature teratoma with large neuroblastic components. The patient was then sent to receive chemotherapy. Despite curses of chemotherapy (vincristine, cisplatin and etoposide), a right mass reappeared 3 months later at the right side of neck, where thyroid incision was done. The woman died 8 months later.

Discussion

Teratomas are rare tumors developing from the three primordial layers (ectoderm, mesoderm and endoderm). Less than 6% of teratomas arise in the head and neck and between the big variety of extragonadal sites and organs where it had been described, thyroid gland is a very rare and uncommon site. It represents less than 0.1% of all primary thyroid gland neoplasms [1,2]. This rarity can be illustrated be the fact that only 31 cases were found in the literature, until 2009 (Table 1) Between over 31 patients with malignant teratoma summarized in a review of literature, the sex/ratio was feminine (23/31), with ages between 8 and 68 years. Our patient was 44.

The malignant potential is determined by the degree of immaturity of the tissues component the teratoma [1,3]. The anatomopathological diagnosis of immature teratoma can be evoked every time immature mesenchymal and neural tissue is found, with malignant elements, and we usually found a predominance of neuroectodermal component with sometimes areas of glandular and/or squamous differentiation. [4,7]. The histology of our 44 years patient showed mesenchymal tissue with extra-capsular extension and local invasion and the immunohistochemistry noted the presence of large neuroblastic components, all these elements are in favor of a immature teratoma, described before [8]. The differential diagnosis must be made with other malignancies such as anaplastic carcinoma, carcinosarcoma, Ewing sarcoma, primitive neuroectodermal tumor, small cell carcinoma, and malignant lymphoma [8].

The aggressive potential of these malignant tumors is illustrated by the fact that malignant teratomas of the thyroid have a short median survival despite radical surgery and chemotherapy and radiotherapy regimens (median survival between 8 months and 12 months) Our patient survival despite aggressive treatment was 8 months [8,10].

In general, external radiotherapy has been proposed in many studies, but the improvement in survival terms has not proven to be effective [11]. Shortly after in the follow-up, the patient accuses local recurrence and/or recurrence at distance [6].

Concerning the immature teratomas, chemotherapy has been used in a lot of cases found in the literature [6,12]. In a table of B. Pérez-Mies et al on 31 malignant teratomas of the thyroid gland, over 22 patients had chemotherapy associated to other treatment, surgery include, and still, the outcome was fatal for them, with a maximum survival period of 32 months[6].

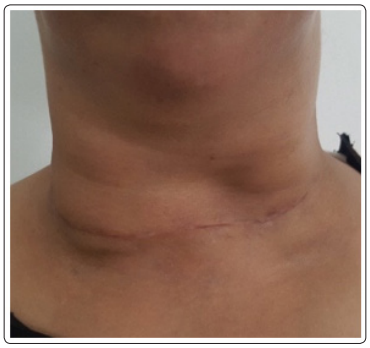

Figure 1: Picture of the recurrence of the teratoma, 3 months after thyroidectomia

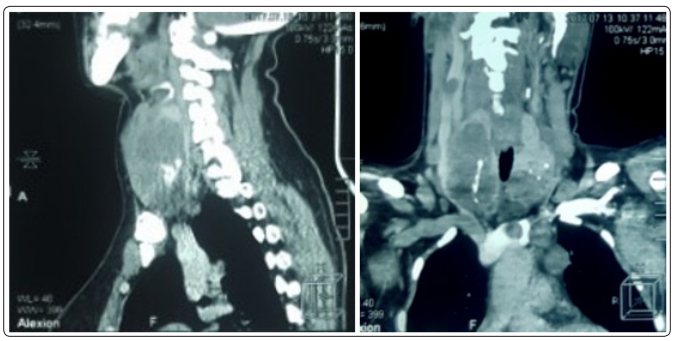

Figure 2: CT-scan showing the the teratoma; A : sagittal section showing an anterior cervical mass of 10 cm, heterogenous, with calcifications ; B : coronal section showing the mass

Conclusion

Teratomas of the thyroid gland is a rare neoplasm, where the malignancy of this tumor is linked to it degree of immaturity. The prognosis of immature teratomas is reserved and, regardless to it rarity, more cases and experiences in the treatment of this kind of tumors should be published, to improve the management of theses aggressive neoplasms.

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