

MEDIASTINAL TERATOMA OF FORTUITOUS DISCOVERY DURING A PREOPERATIVE CHECK-UP : *about a case*

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ABSTRACT :

Mature teratomas are non-seminomatous germ tumors, they are the most common benign variant of embryonic origin tumors, representing 10% of mediastinal tumors and 50 to 70% of mediastinal germ tumors. We report the case of a 28-year-old patient, military by profession, without any particular history admitted to the pulmonology service for the management of a mediastinal mass, he reports the notion of intermittent mediastinal pain. Chest radiography shows a dense homogeneous opacity occupying the mediastinum and lower. Thoracic CT scan reveals a mixed anterior mediastinal mass (tissue, fat and calcium). The translucent biopsy confirms the diagnosis of mature teratoma, the patient is referred to thoracic surgery for complete excision. The mature teratoma is a germ tumor developed in the somatic sense and composed of mature tissues, the only curative treatment of mediastinal mature teratomas remains the complete surgical excision that allows both: excision of the mass, confirmation of diagnosis and prevention of complications.

Key words : Mature teratomas, Embryonic tumors, Mediastinal germ tumors.

RÉSUMÉ : TERATOMA MEDIASTINAL DE DECOUVERTE FORTUITE LORS D'UN BILAN PREOPERATOIRE : À propos d'un cas.

Les tératomes matures sont des tumeurs germinales non séminomateuses, elles sont la variante bénigne la plus fréquente des tumeurs d'origine embryonnaire, représentant 10% des tumeurs médiastinales et 50 à 70% des tumeurs germinales médiastinales. Nous rapportons le cas d'un patient de 28 ans, militaire de profession, sans antécédents particuliers admis au service de pneumologie pour la prise en charge d'une masse médiastinale, il rapporte la notion de douleur médiastinale intermittente. La radiographie thoracique montre une opacité homogène dense occupant le médiastin. La tomographie thoracique révèle une masse médiastinale antérieure mixte (tissu, graisse et calcium). La biopsie transthoracique confirme le diagnostic d'un tératome mature, le patient est dirigé vers le service de chirurgie thoracique pour une exérèse complète. Le tératome mature est une tumeur germinale développée au sens somatique et composée de tissus matures, le seul traitement curatif des tératomes mûrs médiastinaux reste l'exérèse chirurgicale complète qui permet à la fois : excision de la masse, confirmation du diagnostic et prévention des complications.

Mots clés : Tératomes matures, Tumeurs embryonnaire, Tumeurs germinales médiastinales.

INTRODUCTION

A teratoma is a congenital tumor derived from cells of the embryonic germ layers ectoderm, mesoderm and endoderm [1,2]. In addition, most teratoma tumors in the anterior mediastinum arise from the thymus or near thymus parenchyma, and intrapericardial or pericardial arising teratomas are considered extremely rare [3], represent 10% of mediastinal tumors and 50-70% of mediastinal germ tumors.

Children and young adults are most commonly affected by mediastinal teratomas. Although most patients are asymptomatic, big tumors may cause compression symptoms [4].

The usual course of treatment is total surgical resection. Remaining tissues may be kept when adhesion to the surrounding tissues is present in order to lessen damage to the peripheral blood vessels and nerves [5].

MEDICAL OBSERVATION

Mister C.K aged 28, military by profession, non-smoker, admitted to the department of pneumology for the exploration of a mediastinal mass of fortuitous discovery during a preoperative examination of an anal fissure.

1. Clinical examination

Intermittent mid-thoracic pain, without any signs of compression, vascular or neurological.

2. Chest radiography

Homogeneous mediastinal opacity occupying the middle and lower mediastinum (figure 1).



Figure 1. Chest x-ray.

2.1. Computed tomography Thoracic

Mixed anterior mediastinal mass: tissue, greasy and calcic, measuring 74mm/40mm, strongly suggestive of a mature teratoma (figure 2).

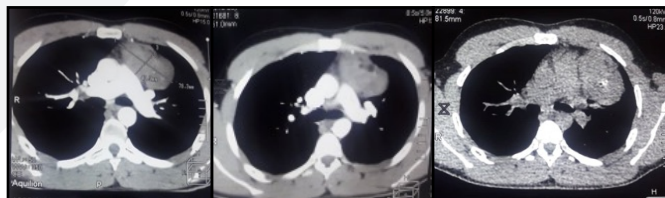


Figure 2. Heterogeneous mass occupying the left part of the anterior mediastinum and a part of the left hemithorax, consisting of variable densities of fat, liquid, and bony tissues.

3. Biology

Formule de Numération Sanguine (FNS), liver and kidney tests correct, sedimentation rate: 27, C-reactive protein: 5mg/l, alpha FP: 1.84 IU/ml, BHCG: < 1.20 IU/L, CA19-9: 102IU/ml.

4. Bronchial fibroscopy

Absence of bronchial abnormalities.

5. Biopsy and pathological study

Fibrous tissue with mucosecretory glandular structures of benign appearance (figure 3).

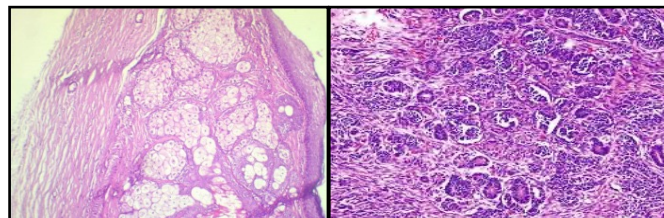


Figure 3. Hematoxylin and eosin staining under a microscope reveals mature tissues of the three germ cell layers.

TREATMENT

Following discussion, surgery was suggested, and a postero-lateral incision was made in the right hemithorax. Both during general anesthesia and during the procedure, there were no respiratory or circulatory issues.

Macroscopic appearance of the operating room after opening, revealing a fatty, solid, pseudo caseous content with organoid elements (teeth, hair) (figure 4).



Figure 4. Macroscopic aspect of the operative teratoma.

DISCUSSION

Teratomas are tumors that originate from embryonic cells which differentiate into tissues of all three germ cell layers. These tumors are commonly detected in the second and third decades of life. Teratomas can be classed as mature or immature based on the level of differentiation [3,4,6].

Age at diagnosis is usually between 15 and 40 years, when the tumor is partially or totally localized in the mediastinum [7-10]. The diagnosis may be fortuitous. It can also be done in the presence of respiratory signs related to a compression of the tracheo-bronchial shaft, and exceptionally in the presence of complications such as rupture in a neighbouring organ [10,11].

Teratomas can be found by accident and are frequently asymptomatic in clinical settings. Chest discomfort, coughing, dyspnea, dysphagia, or respiratory failure are the most common symptoms in symptomatic cases. The tumor's growth and compression of the surrounding structures are typically the causes of the symptoms [3,4,12].

The first imaging method used to diagnose MMT is a chest X-ray, which typically shows up as a rounded, well-circumscribed, heterogeneous mass.

Furthermore, the primary imaging method for pinpointing the precise location of the tumor and ruling out infiltrative growth of mediastinal masses is chest CT [13], it will allow the characterisation of the characteristics of teratoma in general and mature

teratoma in particular. These characteristics being a well-defined cystic aspect, variable content (liquid, fatty, solid, calcified, pseudo-caseous or mixed), absence of invasion of neighboring structures [14,15].

These characteristics will then eliminate the more frequent etiologies of cervical and/or mediastinal masses such as tumors of the thyroid, thymic tumors, lipomas. The scan will also allow a more precise determination of the seat of the teratoma. This seat is mostly anterior mediastinal. Extension to the posterior mediastinal region is also possible.

The conventional therapy for teratoma is total surgical excision, which aids in diagnosis and guarantees a long-term cure rate with a low chance of recurrence [16]. The relationship between the surrounding tissue, tumor location, tumor size, invasion, and pleural adhesions determines the surgical resection option, which includes thoracoscopic surgery with or without conversion to thoracotomy, semi-clamshell, median thoracotomy, simple neck collar incision and posterolateral thoracotomy [17]. In particular, tumors on one side of the mediastinum, big tumors, and invasion of the lung or pericardium can be selected for posterolateral thoracotomy, which was carried out in the case that was reported [10].

Teratoma histopathology results reveal well-differentiated tissues from each of the three germ cell layers. The ectoderm's skin or skin appendages and nerve tissue, the mesoderm's cartilage and fat, and the endoderm's respiratory, pancreatic, and gastrointestinal epithelium were the most often seen components [18].

CONCLUSION

Teratomas in the cervical region are uncommon. People between the ages of 20 and 40 are more likely to have them. The patient's age determines the circumstances of their detection. They are frequently found in adults and teenagers by accident or when there are indications of compression of nearby organs, including the tracheobronchial tree. The anterior mediastinum is typically the site of extension for cervicome diastinal teratomas. After the diagnosis, surgery is the preferred course of treatment. With a low rate of problems both during and after surgery, the outcomes are favorable.

Although the macroscopic diagnosis based on the identification of pathognomonic symptoms can be performed in the operating room, histological investigation is always required to ascertain if the teratoma is mature or immature.

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Conflict of interest statement

The authors declare that they have no competing interests.

CONSENT

Written informed consent was obtained from the patient.

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