Scholars Journal of Medical Case Reports
OPEN ACCESS
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com/journal/sjmcr/home

A Giant Mature Mediastinal Teratoma Simulating a Pleural Effusion

Elatiqi K[1*], F. Amenzouy[1], H. El Mansouri[1], Fennane H[2], Msougar Y[2], Amrou L[3], Ouali Idrissi M[1], Cherif Idrissi Ganouni N[1]

[1]Radiology department Arrazi Hospita. Mohammed VI university hospital, Cadi Ayad University, Marrakesh Morocco
[2]Thoracic surgery department Arrazi Hospital Mohammed VI university hospital, Cadi Ayad University, Marrakesh Morocco
[3]Pneumology department Arrazi Hospital Mohammed VI university hospital, Cadi Ayad University, Marrakesh Morocco

***Corresponding author:** Elatiqi K
| **Received:** 16.01.2019 | **Accepted:** 25.01.2019 | **Published:** 30.01.2019
DOI: 10.36347/sjmcr.2019.v07i01.021

Abstract **Case Report**

Mediastinal teratomas account for 10% of mediastinal tumors, mainly affecting the young population. There are two types of teratomas: mature (benign) and immature. The radiological presentation is variable given the great variety of the tissues constituting it: epithelial and muscular tissues, fat, liquid, cartilage and even teeth. We report the case of a 27-year-old female, with no pathological history, who consulted for a progressive dyspnea, in a context of apyrexia and general state preservation. The clinical examination found a dyspnoeic patient with a left fluid effusion syndrome. The chest X-ray has shown a left lung opacity. The patient underwent a thoracic drainage bringing back 600cc of purulent liquid at the beginning then hematic but the patient remained dyspnoeic. The cytobacteriological analysis was negative. A thoracic CT was performed revealing an abundant left pleural effusion, containing a three component mass :tissue, fat and calcium ; suggestive of a teratoma with ultrasound and MRI in favor of a pleural localization. The patient underwent a thoracotomy revealing a large solido-cystic mass with a large mediastinal implantation base pushing up the left lung and very adherent to its lower lobe,histologicaly compatible with a mature teratoma. Teratomas represent 50% to 70% of mediastinal germ tumors, their radiological presentation is often suggestive of the diagnosis, but in some cases - not as rare - they can simulate a massive pleural effusion, and should therefore be included in the list of diagnoses to evoke in front of an opaque hemi-thorax especially in the presence of calcification and in the young population.

Keywords: Mature teratoma, mediastinum, imaging.

Copyright @ 2019: This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use (NonCommercial, or CC-BY-NC) provided the original author and source are credited.

INTRODUCTION

Mediastinal teratomas account for 10% of mediastinal tumors, mainly affecting the young population. It is the most common extra gonadal localization. There are two types of teratomas: mature (benign) and immature. The radiological presentation is variable given the great variety of the tissues constituting it: epithelial and muscular tissues, fat, liquid, cartilage and even teeth [1]. The aim of this work is to illustrate a particular form of the radiological presentation of a mature mediastinal teratoma simulating a massive pleural effusion.

CASE REPORT

We report the case of a 27-year-old female, with no pathological history, who consulted for a progressive dyspnea, in a context of apyrexia and general state preservation. The clinical examination found a dyspnoeic patient with a left fluid effusion syndrome. The chest X-ray has shown a left lung opacity pushing the heart and the mediastinum to the contralateral side. The patient underwent a thoracic drainage bringing back 600cc of purulent liquid at the beginning then hematic but the patient remained dyspnoeic. The cytobacteriological analysis was negative. A second look was taken at the chest X-ray revealing a calcification within the left lung opacity (fig 1). A thoracic CT was performed revealing a massive left pleural effusion, containing a three component mass : tissue, fat and calcium ; suggestive of a teratoma (fig 2). A complementary ultrasound was performed showing a massive left pleural effusion with a floating oval heterogeneous echogenic mass, not lit by color Doppler and containing a calcification (fig 3). The Thoracic MRI showed a heterogeneous left pleural lesion, bilobed, with triple component (tissue, fat and calcification), the tissular part was iso intense inT1, hyper intense in T2 and diffusion with a restricted ADC, evoking a pleural teratoma (fig 4). The patient underwent a thoracotomy revealing a large solido-cystic mass with a large mediastinal implantation pushing up the left lung and very adherent to its lower lobe with no

pleural rupture. The mass was histologicaly compatible with a mature teratoma.

Fig-1: Scout view showing a calcification within left lung opacity.

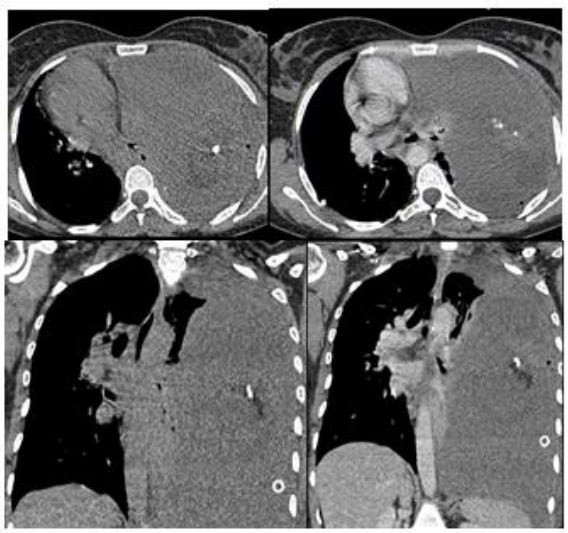


Fig-2: Axial and coronal sections of a chest CT with and without contrast showing a massive left pleural effusion with a three component mass (tissue, fat and calcification).

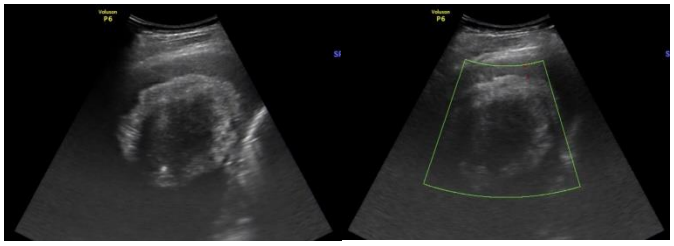
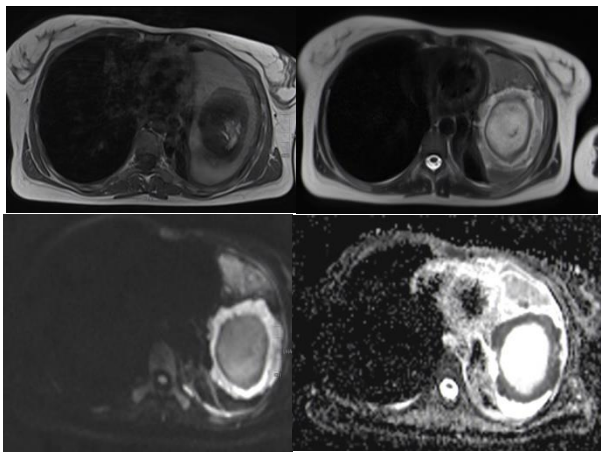


Fig-3: Thoracic ultrasound showing a massive left pleural effusion with a floating oval heterogeneous echogenic mass, not lit by color Doppler and containing a calcification



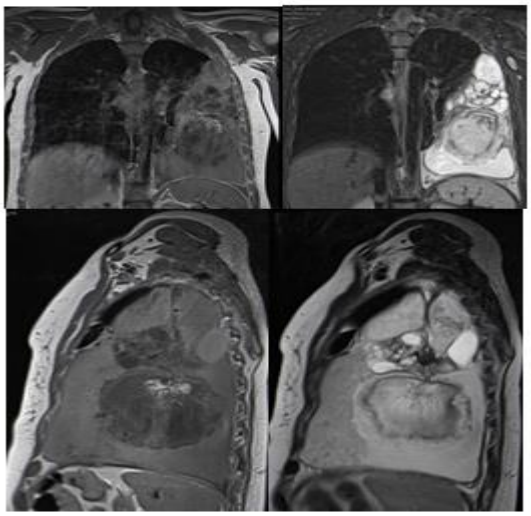


Fig-4: Thoracic MRI showing a heterogeneous left pleural lesion, bilobed, with triple component (tissue, fat and calcification), the tissular part is iso intense inT1, hyper intense in T2 and diffusion with a restricted ADC

DISCUSSION

Germ cell tumors occur most frequently in the gonad but can rarely occur in extragonadal locations, usually in or near the midline. Germ cell tumors in the gonad are thought to originate from multipotential primitive germ cells. Extragonadal germ cell tumors may arise from similar cells that are ‘‘misplaced’’ along midline structures during their migration from the yolk endoderm to the gonad during early embryogenesis [2]. They are composed of mature tissues derived from the three embryonic leaves: ecto, endo, and meso-dermic. Mediastinal teratomas are the most frequent mediastinal germ cell tumors accounting for 50% to 70% [1]. They are mature in 80 to 88% and represent the most common benign variant of tumors of embryonic origin [3]. Mature teratomas are slow-growing neoplasms of the anterior superior mediastinum that usually arise near the thymus or within the thymic parenchyma. Patients with mature teratoma are usually young adults; however, children are also affected. Male and female patients are affected equally [2]. If symptomatic, most of symptoms are related to compression of nearby structures such as dyspnea (25%), thoracic pain (23%), cough (17%), fever (13%), weight loss (11%), superior vena cava occlusion (6%) and extrathoracic pain (5%) while pleural effusion is rarely seen in such cases [4]. The typical radiographic appearance of mature teratoma is that of a rounded, sometimes lobulated anterior mediastinal mass with the borders of the mass sharply marginated against the adjacent lung. Calcification has been reported in approximately 20–43% of cases and may be central, curvilinear, or peripheral. The radiographic visualization of teeth is pathognomonic of teratoma. The presence of a fat-fluid level is considered specific for the diagnosis of teratoma but is seldom seen radiographically [2]. CT is the modality of choice for the diagnostic evaluation of these tumors. It exquisitely shows the location and extent of the tumors as well as intrinsic elements including soft tissue, fat, fluid, and calcification. Mediastinal mature teratomas typically manifest on CT as heterogeneous sharply marginated, spherical or lobulated anterior mediastinal masses containing soft tissue, fluid, fat, or calcium attenuation, or any combination of the four. Fat-fluid levels, considered highly specific for the diagnosis of mediastinal mature teratoma, are uncommon. It is also useful in the evaluation of adjacent structures. Complications such as rupture into the pleural space or pericardium with associated effusions can be evaluated. Rupture of the teratoma can also be suspected if the wall of the lesion appears disrupted and consolidation is evident in adjacent lung. It has been reported that presence of pancreatic enzymes inside the tumors might lead to their rupture. Malignant transformation must be ruled out if contrast enhanced CT scanning reveals a non-homogeneous cystic mass with a fat or oil component and a thick wall with calcification and invasion of the pericardium and great vessels [2]. On MRI, T1- and T2-weighted MR images reveal areas of signal intensity abnormalities corresponding to fat, fluid, soft tissue, or calcification within the mass. Fat-suppressed MR images can be used to help delineate macroscopic fat, and in-phase and opposed-phase pulse sequences can be used to depict intracellular lipid. In contradistinction to CT, the high contrast resolution and multiplanar imaging capabilities of MR imaging may be used to better define the interface of the pericardial mass with the myocardium and other contiguous structures for purposes of surgical resection [5]. Complete surgical excision is the treatment of choice for mediastinal teratoma because of probable complications such as compression of adjacent structures, rupture or malignant transformation [6].

CONCLUSION

Mediastinal mature teratoma is uncommon. This slow growing tumor is usually asymptomatic. the radiological presentation is often suggestive of the diagnosis, but in some cases - not as rare - they can simulate a massive pleural effusion, and should

therefore be included in the list of diagnoses to evoke in front of an opaque hemi-thorax especially in the presence of calcification and in the young population.

REFERENCES

1. Ayadi-Kaddour A, Ismail O, Hassen F. Les Tératomes matures bénins du médiastin. Rev Mal Respir 2008; 25(5):531-538.
2. Shameem M, Qaseem SMD and Al. Mature mediastinal teratoma in adult. Respiratory Medicine CME 3; 2010; 116–117.
3. Chetaille B, Massard G, Falcoz PE. Les tumeurs germinales du médiastin: anatomopathologie, classification, tératomes et tumeurs malignes. Revue de Pneumologie clinique. 2010 Feb 1;66(1):63-70.
4. Razi E, Imani A, Ansari I, Khamechian T, Davoodabadi A. Pleural effusion as a rare manifestation of mediastinal teratoma: A case report. Respiratory medicine case reports. 2017 Jan 1;22:142-4.
5. Patel IJ, Hsiao E, Ahmad AH, Schroeder C, Gilkeson RC. AIRP best cases in radiologic-pathologic correlation: mediastinal mature cystic teratoma. Radiographics. 2013 May 3;33(3):797-801.
6. No TH, Seol SH, Seo GW, Kim DI, Yang SY, Jeong CH, Hwang YH, Kim JY. Benign mature teratoma in anterior mediastinum. Journal of clinical medicine research. 2015 Sep;7(9):726.