

COMPLEX MEDIASTINAL TUMOUR IN PREGNANCY: CASE REPORT

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Abstract

A 19 years-old woman, on her 17th week of pregnancy presented to the emergency department with thoracic pain and vomiting. An empyema was diagnosed and she was transferred to a tertiary hospital for treatment. After drainage of the empyema a mediastinal mass was detected and a thoracic MRI revealed a multicystic lesion of the anterior mediastinum, causing cardiac and left lung compression, suggestive of a complicated teratoma. After a multidisciplinary discussion involving pulmonology, radiology, obstetrics and thoracic surgery, she was operated successfully by clamshell incision. A mature complicated teratoma was resected and a left pleurectomy/decortication performed. She was discharged on day 17 with no obstetrical or respiratory symptoms.

CASE REPORT

A 19 years-old female, with a normally progressing 17 weeks gestation, presented to the Obstetrics emergency room, complaining of nausea and vomiting and pain in the left lower chest. She referred a persistent cough for at least 2 weeks and nausea and vomiting for the last month, with great difficulty in ingestion and a subsequent weight loss of 4 Kg. She also mentioned low grade fever since the day before. This was her third visit to the Emergency ward where she had been medicated and discharged without a specific diagnosis apart from nausea and vomiting of pregnancy. At physical examination, the patient showed dyspnea, a mild tachycardia and abolished breathing sounds on the left hemithorax. The obstetrical ultrasound revealed a fetus with good vitality.

A white left lung was present on the chest X-ray and exploratory thoracocentesis showed gross macroscopic purulent material. Thus, the patient was transferred to the pneumology department of a tertiary Hospital with the diagnosis of left pleural empyema. Upon arrival, a chest drain was inserted in the left pleura with drainage of 2000cc of purulent material, and a mediastinal mass became apparent on the x-ray (Fig 1).

The chest MRI revealed an anterior mediastinal mass, of 7,9X9,3 cm, with solid and cystic components, the latter extending to the contralateral mediastinum with a maximum radius of 8,7X12,3 cm, and a posterior left pleural cavity extension. Compression was exerted on the heart and on the left lung hilum, pushing the mediastinum towards the right and causing atelectasis of the

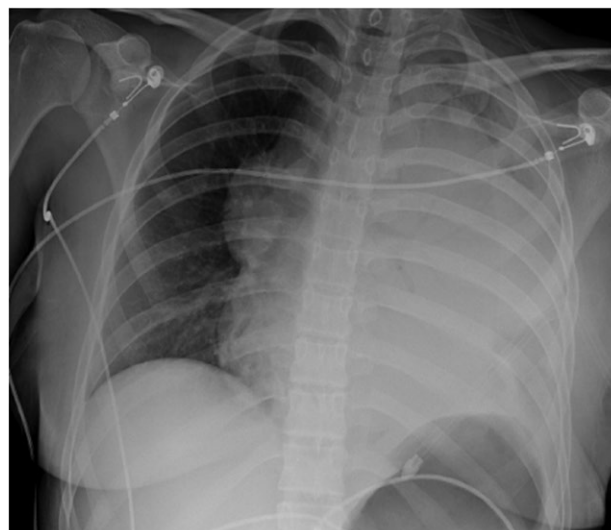


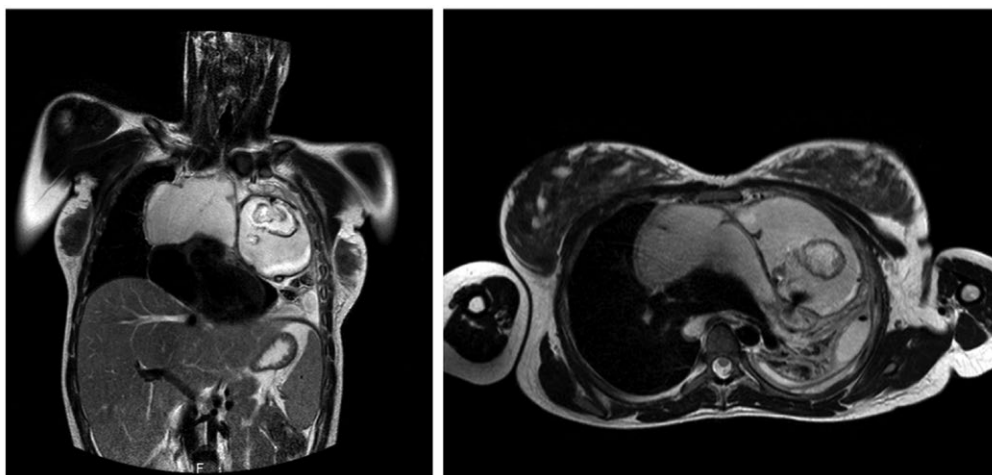
Figure 1

Chest x-ray after drainage.

left lung. There were no signs of vital or vascular structures invasion (Fig 2).

The diagnosis of mature teratoma was considered for the main mass but the cystic pouch on the right anterior mediastinum remained a mystery and the diagnosis of immature or complicated teratoma was the second best hypothesis.

After obstetric and thoracic surgery consultation, primary surgery was advised as soon as possible. The patient was then transferred to the thoracic surgery

**Figure 2**

MRI revealing an anterior mediastinal mass with cystic and solid and left empyema.

**Figure 3**

Clamshell incision.

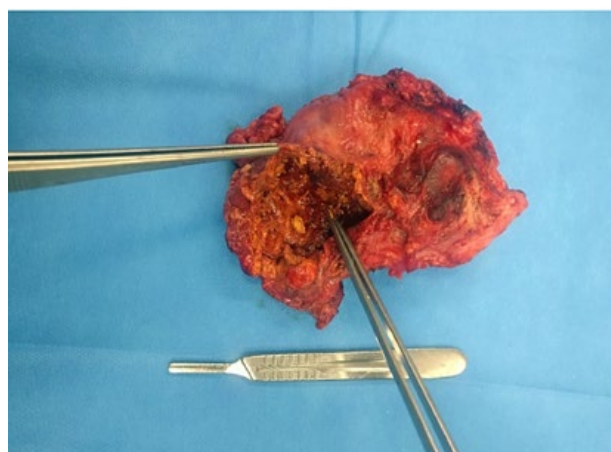
department and underwent surgery at the 19th week of gestation. A clamshell incision offered maximal exposure of the mediastinum and of both pleural cavities avoiding compression on the abdomen (Fig 3).

Several cystic masses were found on the anterior mediastinum, with a solid component containing hairs and fat on the left side. The macroscopically mature teratoma (Fig 4) was surrounded by a large quantity of purulent material that filled all the pouches in the anterior right mediastinum and left pleural cavity.

The mass was completely resected within its capsule and all the pus filled cavities were cleared and dissected. A left pleurectomy and decortication were required to reexpand the left lung. Preservation of both phrenic nerves was accomplished. During surgery, the mother was hemodynamically stable, having received 4 units of red blood cells and 2 units of plasma.

The patient was transferred to the ICU where she remained for 4 days and weaned from the ventilator 12 hours after surgery. An ultrasound performed on the first post-operative day revealed a fetus with good vitality. A transient cholestatic complication with bilirubin 2,61 mg/

dL, with normal abdominal ultrasound was detected in the first post-operative day. The left lung showed good expansion on the X-rays and the drains were sequentially removed as they stopped draining and bubbling. Penicillin,

**Figure 4**

Mature teratoma.

according to sensibility tests of a *Streptococcus anginosus* isolated in the pleural fluid, was maintained for 21 days. Before discharge on day 17, she was observed by the high risk obstetric team and an ultrasound was performed confirming a 21 weeks female fetus with no malformations, normal amniotic fluid and good vitality.

DISCUSSION

Large mediastinal masses always pose a difficult challenge in the decision algorithm for diagnosis and therapy but in the mainstream if it is considered non-invasive, it is resectable and therefore should be primarily approached for complete resection.¹ Although the description of teratoma growth during pregnancy and puberty supported by the presence estrogen and progesterone receptors on these tumours,^{2,3} can be found in the literature, a study by Caspi *et al.* reviewing 56 mature ovarian teratomas during pregnancy revealed no change in tumour volume during pregnancy, so the hypothesis of tumour growth associated with pregnancy hormones does not seem to apply to mature teratomas.⁴

Another hypothesis is that the teratoma itself may have ruptured and infected causing the empyema. Cases of mediastinal mature teratoma rupture have been reported into adjacent organs causing a myriad of symptoms from cutaneous fistulas to pericardial tamponade.^{5,6}

Streptococcus anginosus group comprises the microbiota of the normal gastrointestinal tract and pharynx. When it becomes pathogenic, it usually causes abscess formation and endocarditis, requiring drainage and antibiotherapy with β -lactam antibiotics.⁷

The second trimester is considered the safest one for surgical intervention. The teratogenic risk of anesthetic or antibiotic medication is low and the size of the pregnant uterus does not pose a problem yet. Imaging by MRI can be safely performed during pregnancy and played a fundamental role in the diagnosis of this condition providing precious information on the resectability of the mediastinal mass.

CONCLUSION

Pregnancy is a sensitive period in which a woman is physiologically immunosuppressed, putting the expectant mother at risk for infectious agents. This case had a good outcome, both for the mother and the fetus, as a result of a multidisciplinary approach that lead to a diagnosis and treatment of a complicated ruptured mediastinal teratoma.

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