

# Mature Mediastinal Teratoma

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## ABSTRACT

A teratoma is a tumour with tissue or organ components resembling normal derivatives of more than one germ layer. We present a case of mediastinal mature teratoma as they have a low incidence rate. A 45-year-old female presented with right sided chest pain and paroxysmal attacks of dry cough and fever. A diagnosis of pulmonary hydatid cyst was made on computed tomography (CT) examination. Microscopic study revealed a tumour composed of elements from all the three germ layers. A diagnosis of mature mediastinal teratoma was made which is the second common site for germ cell tumours.

**Keywords:** Ectoderm, Endoderm, Mature teratoma, Mediastinum, Mesoderm

## CASE REPORT

A 45-year-old female presented in the Department of Medicine, Narayana Medical college with right sided chest pain since 6 months, associated with paroxysmal attacks of dry cough and fever since 2 months. She also had one episode of haemoptysis. Clinical examination revealed a moderately nourished middle aged female with stable vitals. Auscultation of chest revealed decreased air entry in right interscapular and infrascapular area. Ultrasound examination of chest revealed a heterogeneous lesion in right lower hemithorax and mild right pleural effusion. CT examination of thorax showed a large well defined multiloculated, spherical cystic lesion involving the anterior segment of right upper lobe, right middle lobe, anterior basal, medial basal and lateral basal segment of right lower lobe. A clinical diagnosis of pulmonary hydatid cyst was made. Pulmonary function tests, showed moderate restriction. Routine haematological and abdominal sonography was within normal limits. Sputum examination was negative for malignant cells. Peroperatively the lesion was confined to mediastinum. Right posterolateral thoracotomy and right middle lobectomy was done because of associated atelectasis. Six months postsurgery patient had no significant complaints.

## Pathological Findings

**Gross appearance:** The lesion received in the Department of Pathology in Narayana Medical College, measuring 12 cm in diameter was well circumscribed. Cut surface superficially showed a predominantly fatty mass with focal areas of pultaceous material. Deeper sectioning of the tumour showed a multiloculated cyst, some containing mucin and others containing pultaceous material with hair [Table/Fig-1]. Focal area of the wall had cartilaginous consistency.

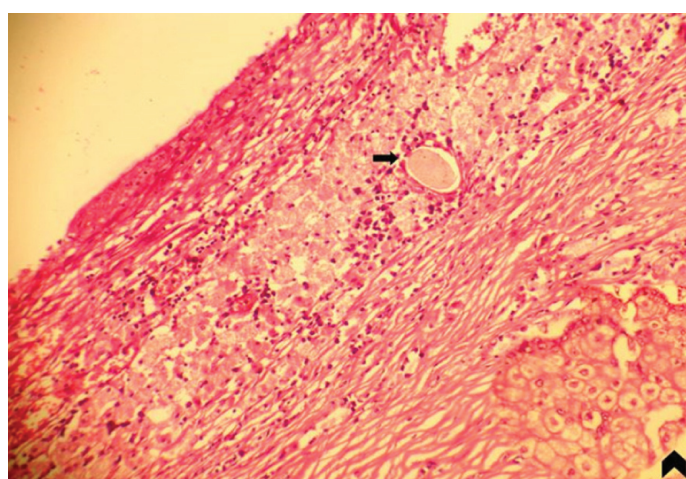
**Microscopic features:** Showed well differentiated elements like lobules of cartilage, entrapped respiratory epithelium, smooth muscle cells and neurovascular bundles. Focal area of cyst wall was lined by squamous epithelium and few sebaceous glands and hair follicles were seen [Table/Fig-2]. Remnants of involuted thymic tissue was also seen [Table/Fig-3]. Part of adherent lung tissue sheets of foamy macrophages, haemorrhage and cholesterol clefts. Microscopically diagnosis of mature mediastinal teratoma was done. Resected margins were free from the tumour.

## DISCUSSION

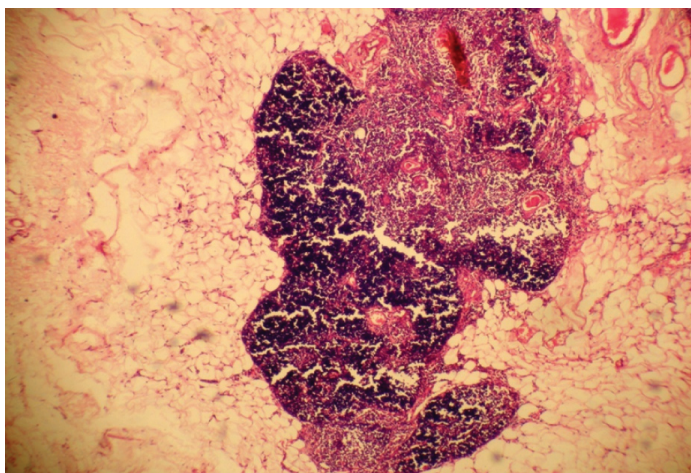
Teratomas involve cells from all three embryonic cell layers: ectoderm, mesoderm and endoderm [1]. Teratomas of mediastinum have low



**[Table/Fig-1]:** Gross specimen showing numerous cysts some containing; a) mucin, others containing b) pultaceous material and adipose tissue



**[Table/Fig-2]:** Photomicrograph showing cyst wall lined by squamous epithelium, and subepithelial hair follicle (arrow) and a sebaceous gland (arrow head) (H and E, 100x)



**[Table/Fig-3]:** Photomicrograph showing remnants of thymic tissue and adjacent adipose tissue. (H and E, 100x)

incidence rate constituting only 8-13% of all tumours in this region and only 1-10 % of germ cell tumours are found in mediastinum which is mostly seen in anterior compartment of mediastinum [1].

Eventhough benign mediastinal teratomas have equal frequency in men and women, malignant teratomas are common in men [2]. Mediastinum is the second common site for germ cell tumours next to gonads among which, the mature teratomas are the common histologic type [3]. Presentation is usually asymptomatic and it affects both the sexes equally. A mediastinal teratoma involving the lung is extremely rare [4].

Majority of the tumors have well defined smooth or lobulated margins. [4] Mature teratoma contributed to about 80%. Most mediastinal teratomas with pulmonary involvement have a predilection for the left upper lobe [4]. Although tumour did not involve the lung in our patient.

Mediastinal teratomas are well described in literature [5]. Presence of involuted thymic tissue in the wall has been reported [6]. Malignant differentiation of their adult tissue can occur and is said to be much more frequent in mediastinum [7-9]. Cytological examination and needle biopsy were considered redundant because of dispersion risk and limited availability of tissue for definitive diagnosis [10]. About 60% of cases have no signs or symptoms when the mass is initially diagnosed. In the present case respiratory symptoms were seen possibly due to associated atelectasis of the middle

lobe. Extensive haemorrhage and sheets of macrophages seen in the lung on microscopic examination in this case is attributed to previous CT guided needle aspiration of the lesion. Haemoptysis and expectoration of hair (trichoptysis) or sebum can rarely occur when tumor establishes communication with the tracheobronchial tree [11]. Pressure symptoms like superior venacaval syndrome can occur. Huge teratoma extending to whole of hemithorax and resulting in total atelectasis of left lung has also been reported [12]. Mature mediastinal teratoma can be cured with complete surgical resection [13]. Surgical resection is mandatory as the tumour can grow slowly, invade adjacent structures and can undergo malignant transformation. Complication such as infection and rupture can occur.

## CONCLUSION

Teratomas usually arise in the anteriosuperior mediastinum and most of the symptoms result from compression of adjacent structures. Complete resection is an adequate treatment with favourable prognosis and it prevents complications.

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