

# Intrapulmonary Teratoma Presenting with Trichoptysis: A Case Report and Review of the Literature

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## ABSTRACT

Intrathoracic teratoma usually occurs in the mediastinum but rarely, these may originate from the lung. We report a case of an intrapulmonary teratoma in a 34-year-old male. [Indian J Chest Dis Allied Sci 2011;53:237-239]

**Key words:** Intrapulmonary teratoma, Trichoptysis, Germ cell neoplasm.

## INTRODUCTION

A teratoma is defined as a neoplasm that consists of one or more types of tissues that usually derived from more than one germ cell layer. A germ cell tumour arises as a result of the proliferation of primitive extra-gonadal germ cells that have the potential to differentiate into various cell types. The anterior mediastinum is the most common extra-gonadal site in adults for this tumour and these rarely arise within the lung parenchyma. The most common germ cell neoplasm is mature cystic teratoma or a dermoid cyst. This tumour is benign in nature and accounts for approximately 80% of the germ cell neoplasms.<sup>1</sup>

Clinically, while patients with intrathoracic teratoma present with chest pain, haemoptysis, cough with expectoration but pathognomonic symptom that clinches the diagnosis of an intrapulmonary teratoma with trichoptysis (expectoration of hairs). Trichoptysis is seen in 15% of cases.<sup>2</sup> We present here a case of this rare tumour.

## CASE REPORT

A 34-year-old male, labourer by occupation, non-smoker, and tea-totaller presented with a seven-year history of dull aching chest pain and cough with expectoration. Expectoration was intermittent, 30-40 mL in 24 hours, mucopurulent and non-foul smelling and often contained thin brown silky hairs. The quantity increased in the supine and left lateral position. There was no history of haemoptysis, fever and loss of weight. The patient received anti-

tuberculosis treatment (ATT) three times during this duration without any clinico-radiological improvement. Finally, the treating physician referred the patient to us for further evaluation.

On examination, he was afebrile. The vital signs were within normal limits. The patient had grade III clubbing. Auscultation revealed reduced breath sounds and crepitations over the right mammary and axillary area. The rest of the physical examination was unremarkable.

The patient's laboratory findings were: haemoglobin 9.5 g/dL, haematocrit 34%, random glucose 110 g/dL, serum sodium 130 mmol/L. The rest of the laboratory results were unremarkable.

Chest radiograph (postero-anterior view) showed a well-defined homogeneous opacity in the right middle and lower zones (Figure 1).

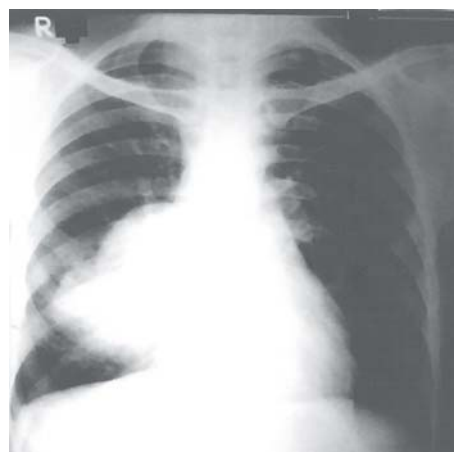


Figure 1. Chest radiograph (postero-anterior view) showing a well-defined mass in the right middle and lower zones.

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Contrast enhanced computed tomography (CECT) of the chest showed a heterogeneous cystic lesion measuring 6.8cmx5.6cmx5.4cm in the right middle lobe (Figure 2). The lesion showed a heterogeneous density containing soft tissue elements, fat, cystic areas and foci of calcification. This is the classical computed tomographic appearance of mature cystic teratoma (Figure 2). The mass appeared to be adherent to the mediastinal pleura medially and the sub-costal pleura antero-laterally. No endobronchial lesion was visualised on bronchoscopy. However, thick secretions were seen coming from the right upper lobe bronchus. The bronchoalveolar lavage (BAL) did not reveal any malignant cells on pathogenic organisms on Gram's stain, acid-fast stain and KOH mount for fungal element. A CT-guided fine needle aspiration was suggestive of inflammatory pathology with negative malignant cells. Two sputum smears were negative for acid-fast bacilli.

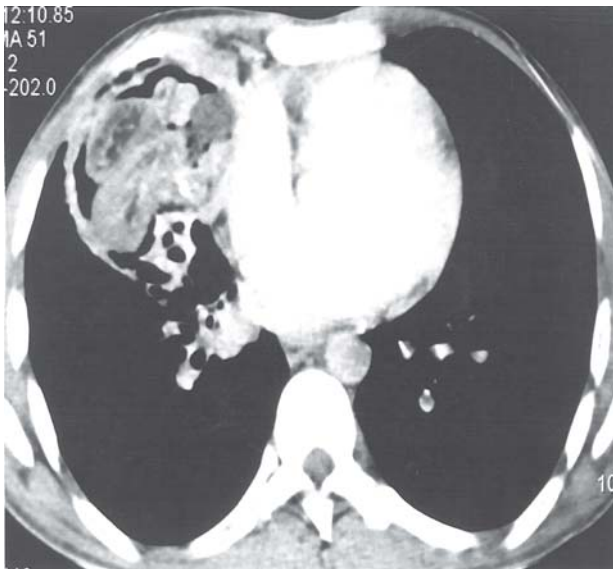


Figure 2. Computed tomography of thorax showing a heterogeneous mass in the right lung with areas of fat attenuation, calcification and solid components with air-lucent rim around the mass.

A diagnosis of an intrapulmonary mature cystic teratoma was made on the basis of the clinical and radiological findings. A right-sided thoracotomy for excision of the lesion with resection of the right middle lobe was undertaken. Figure 3 showed the excised mass (7.1cmx5.4cmx5.2cm) with solid areas of sebaceous material and white silky hairs as well as solid ill-defined structure. On histopathological examination, sections showed tissue bits lined by stratified squamous epithelium, many sebaceous glands, mature pancreatic tissue, cartilage, lymphoid tissue, blood vessels and smooth muscle bundles (Figure 4 A,B,C). No immediate complication was observed during the intra- and post-operation period.

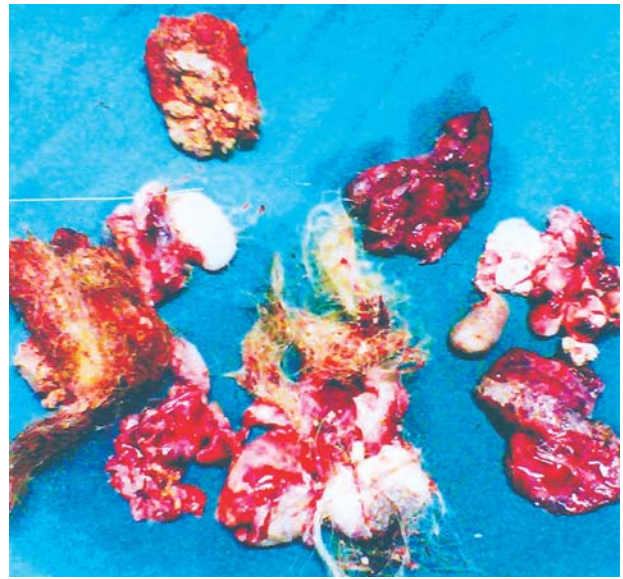


Figure 3. Gross surgical specimen showing multiple irregular tissue pieces, partially cystic, filled with hairs and sebaceous material.

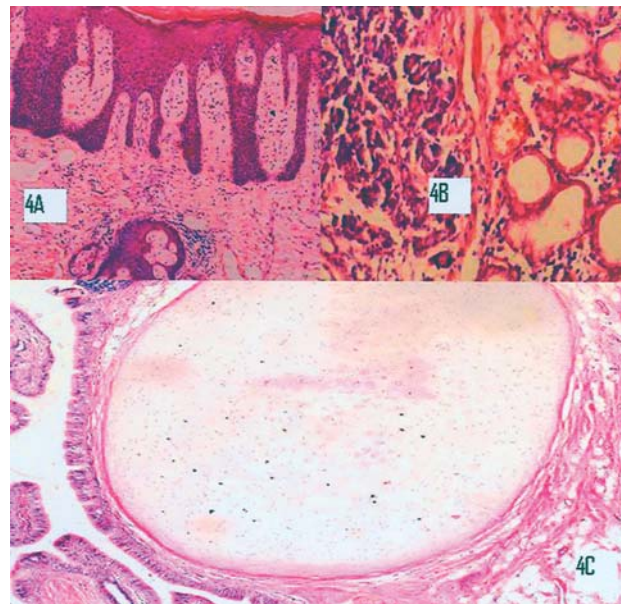


Figure 4. Microscopic examination showing a variety of cell lines; (A) stratified squamous epithelium and sebaceous glands, (B) pancreatic tissue, (C) cartilage and adipose tissue.

## DISCUSSION

The anterior mediastinum is the most common extra-gonadal site for a teratoma in adults whereas in children, the sacrococcegal area is more common. Lungs are a rare site for origin of these tumours. Germ cell tumour may be benign or malignant. The most common intrathoracic germ cell tumour is the mature cystic teratoma or dermoid cyst. The most common

site for an intrapulmonary teratoma is the left upper lobe. However, in our case, the tumour was found in the right middle lobe. This tumour is benign and accounts for 80% of all germ cell neoplasms. Intrapulmonary teratoma is very rare with only 65 cases reported in the world literature between 1839 to 1996. A teratoma occurs equally in both sexes and is usually diagnosed in the 2<sup>nd</sup> to 4<sup>th</sup> decade of life.

Mature teratomas usually do not produced symptoms and are discovered during screening by chest radiography. A large teratoma may produce cough, shortness of breath and chest pain. Occasionally, it may rupture and spill its contents into the pleural cavity or the mediastinum resulting in mediastinitis and empyema formation. Rarely, the cyst ruptures into the bronchus producing haemoptysis and recurrent cough with expectoration.<sup>4,5</sup> The cyst rupture due to erosion caused by locally produced pancreatic enzyme. Our patient presented with trichoptysis, a specific symptom of an intrapulmonary teratoma and seen in only 15 % of cases.<sup>2</sup> Radiological signs of a mature cystic teratoma include a lobulated opacity within the affected lobe, calcification<sup>6</sup> within the lesion, cavitations<sup>7</sup> or a rim of air around the opacity.<sup>8</sup> In our case, peripheral translucency area was seen that indicates communication of cyst with bronchus.

Clinico-radiological features of a teratoma may occasionally simulate pulmonary tuberculosis. Our patient had received many courses of ATT. A lack of response to ATT should alert the physician to other possibilities.

On CT of the chest, a teratoma presents as a mass with a smooth wall that contains soft tissue, fluid density, fat density, calcification, or any combination of these.<sup>9</sup> These features were also observed in the CT of our patient.

Complications of a teratoma that may be evident on either a chest radiograph or a CT include; atelectasis, obstructive pneumonitis, pneumonia with formation of multiple cavity (cyst rupture into the lung parenchyma) and effusion (secondary to rupture of cyst into the pleural space).<sup>9</sup>

Histopathologically, an intrapulmonary teratoma is similar to other teratomas being composed of an

epithelial lining and may contain any tissue originating from one of the three germinal layers.

Excision of the tumour is the treatment of choice for a mature teratoma. Patients who do not undergo surgery can present with complications, such as massive haemoptysis, recurrent infection and accidentally cyst rupture into nearby organs and these may be fatal.<sup>10</sup> Benign teratoma also has the potential to transform into a malignancy.

In conclusion, an intrapulmonary teratoma is a rare tumour. Trichoptysis is the only clinical feature that can clinch the diagnosis of an intrapulmonary teratoma. Surgical resection is curative.

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