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Case Report

Radiology Section

Thoracic Endometriosis-A Rare Cause of Haemoptysis

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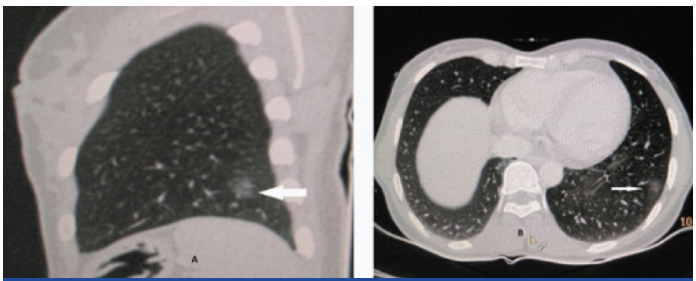
ABSTRACT

Thoracic endometriosis is a rare condition and occurs in females of reproductive age due to the presence of active endometrial tissue in tracheobronchial tree, lung parenchyma and lung pleura. A typical history of haemoptysis during menstrual periods and strong suspicion of the disease entity is important for the diagnosis and management of the case. Diagnosis of the disease is usually delayed. Serial CT thorax during menstrual period and in non-menstrual period supports the diagnosis. We present here a case of catamenial haemoptysis. The diagnosis was missed initially but later a detailed clinical history revealed the same. Serial computed tomography of thorax taken during menstrual and after menstrual period supported the diagnosis. Though bronchoscopy was able to reveal hyperemic tissue in the tracheobronchial tree, bronchial washing was inconclusive. The patient was treated successfully with danazol.

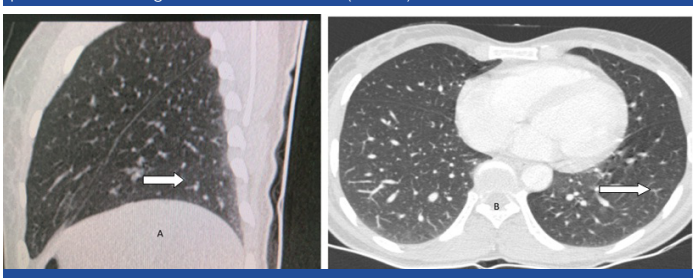
Keywords: Catamenial haemoptysis, Computed tomography, Menstrual period, Thorax

CASE REPORT

A 32-year-old female patient was admitted in pulmonary medicine ward with complaints of 20 episodes of haemoptysis since 11 months. She had no history of smoking and the tuberculosis work up by her treating physician was negative. Her clinical examination, blood picture and X-Ray chest PA view revealed no abnormality. She was referred to Department of Radiodiagnosis for HRCT Chest which revealed subtle area of ground glass haze in posterior basal segment of left lower lobe sub pleural in location [Table/Fig-1]. This HRCT was done when she was menstruating. On detailed clinical history the haemoptysis occurred during menstruation period with weakness and weight loss. Cough with expectoration of blood reoccurred every menstruation period lasting for few days. Total amount of blood expectorated as per patient' s version was approximately 20-30 ml. She had history two normal vaginal deliveries and dilatation and curettage one year back for missed abortion. She gave no history of endometriosis. Ultrasonography of pelvis was normal. A repeat CT was done after control of haemoptysis and during non-menstruating period after 16 days of first CT. It showed complete resolution of the lesions [Table/Fig-2]. A diagnosis of thoracic endometriosis with catemenial haemoptysis was made. Bronchoscopy revealed hyperemic areas in left apicoposterior bronchus upper lobe and in right upper lobe apical segment bronchus. Bronchial washing was taken. Bronchial washing turned to be negative. Patient was put on tab Danazol 200 mg BD medical therapy, to which she responded well and suffered only one more minimal bout of haemoptysis. Monthly follow up visits were uneventful. Medication was discontinued after four months. After 8 months follow up the patient is clinically normal and had no fresh episodes of haemoptysis.



[Table/Fig-1a,b]: Sagittal and axial view showing subtle ground glass opacity in posterior basal segment of left lower lobe (Arrows).



[Table/Fig-2a,b]: Axial and sagittal view showing clearing of the lesions (Arrows).

DISCUSSION

Thoracic endometriosis is characterized by proliferation of an ectopic endometrium in lung, pleura and tracheobronchial tree and its shedding during menstrual period resulting in catemenial haemoptysis [1]. The incidence rate of endometriosis in women of reproductive age group is approximately 5-10% and the incidence of thoracic endometriosis is even rarer [2]. Bronchopulmonary endometriosis was first documented by Hart in1912 [3]. Several theories have been postulated for pathogenesis of extra pelvic endometriosis. The two popular theories are micro embolization theory and peritoneal-pleural migration. In both theories the endometrial tissue is transported from pelvis to lung through the lymphatic/vascular channels or metastatic implantation by retrograde travel of the endometrial tissue from the fallopian tubes to peritoneum and from there to thorax through defects in the diaphragm [4]. Thoracic endometriotic tissue may be located in the tracheo-bronchial tree, pulmonary tissue, pleura or diaphragm [5] and the presentation may vary accordingly. Majority of the patients (73%) present with catemenial pneumothorax. While others present with catemenial haemothorax (14%). Catemenial haemoptysis has been reported in 7% of the cases. 6% of the cases present with chest pain and lung nodules [6]. History of repeated haemoptysis during menstruation followed by symptomless intervening period as revealed in our patient is characteristic and diagnostic of thoracic endometriosis.

HRCT thorax is non-specific and may reveal ground glass or well-defined opacities, nodular lesions and thin-wall cavities [7] but it is the modality of choice for localization of endometrial deposits in the lung and pleura. In the presence of characteristic history and clinical examination, findings HRCT are considered diagnostic of pulmonary endometriosis [8]. Pleural lesions are usually right-sided, whereas lung lesions can be on either side [2]. This is explained by the fact that the lymphatic drainage is more extensive

on right side of the diaphragmatic surface so embolic implant is more likely on right side [9]. HRCT chest in our patient revealed subtle area of ground glass haze in posterior basal segment of left lower lobe. This CT was taken during her menstrual period. Subsequent CT chest taken during non-menstruating phase showed complete resolution of the lesion. Serial HRCT findings along with the patient's typical history were diagnostic of thoracic endometriosis.

Magnetic resonance imaging (MRI) is considered superior to CT in detecting pulmonary endometriosis. MRI can detect the presence of blood and its products as hyper intense on T2-weighted spin-echo images during menstruation with increased uptake post contrast [10,11].

MRI was not done in our patient as the diagnosis was already established. Bronchoscopy may localize lesions in airway but has a limited role in most of the lesions which are located in the lung parenchyma and pleura. Bronchial washing study has been found to be very low in diagnostic value though some have reported success [12]. In our case bronchoscopy was able to locate hyperemic areas in left apicoposterior bronchus upper lobe and in right upper lobe apical segment bronchus but bronchial washing study was not diagnostic.

Pelvic ultrasound is important in case of suspected endometriosis as both co-exist and found to be involved in 51% of the cases [13]. However, recent studies refute it and have found concomitant pelvic endometriosis to be less than 18% and have hypothesized that their origin may be from separate abnormal clone of endometrial cells [14]. In our patient pelvic ultrasound was normal and patient did not have pelvic endometriosis.

Pulmonary endometriosis can be treated medically or by surgical removal of endometrial tissue. Hormonal suppression of endometrium is usually considered first. Drugs like Danazol compete with sex hormones and successfully bind with the cytoplasmic receptors to suppress the normal ovarian estrogen secretion in endometrial tissue. Oral contraceptives like progesterone therapy also suppress the endometrial tissue. Oral contraceptive is usually given for initial therapy and Danazol is used in recurrence [15]. Our patient was haemodynamically stable and had completed her family so she was treated successfully with Danazol. Follow up till eight months showed no recurrence of haemoptysis.

Surgical management is usually done when medical treatment fails. By Video-assisted thoracoscopic or open surgery the ectopic endometrial tissue is removed by wedge resection or limited lung segmentectomy. Chemical pleurodesis may be done in a case of catamenial pneumothorax or haemothorax [16,17].

CONCLUSION

Thoracic endometriosis as a cause of haemoptysis is frequently missed or delayed by clinicians. Catamenial Haemoptysis should be suspected in a woman in reproductive age group with characteristic history of cyclical haemoptysis during menstruation. Serial HRCT chest will help in diagnosis and early management of the case. Medical therapy with newer drugs helps in treatment of the condition conservatively. Surgical treatment may be done if there is failure of medical therapy.

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