

Spontaneous pneumothorax caused by suspected thoracic endometriosis in the setting of COVID-19 infection

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Introduction

Spontaneous pneumothorax can present as a manifestation of thoracic endometriosis. It has also been noted to occur in patients with uncomplicated COVID-19 infection. We present a case of a young female with endometriosis who was found to have pneumothorax in a setting of recent menstruation and uncomplicated COVID-19 infection.

Case description

- A 30-year-old female who presented to the emergency room with sudden onset shortness of breath and sharp right-sided chest pain.
- Past surgical history significant for laparoscopy with excision of endometrial implants in the abdominal and pelvic cavity. Pathological analysis confirmatory for endometriosis.
- Menstrual history suggestive of last menstrual period that had occurred 6 days prior to presentation.
- Examination significant for respiratory distress and hypoxia to mid-80s % breathing ambient air. Chest radiograph revealed a large right-sided pneumothorax and right lung atelectasis.
- A right sided chest tube was placed with resolution of respiratory distress and hypoxia.
- Non-contrast CT of the chest revealed near complete re-expansion of the right lung with chest tube in place, and focal pulmonary consolidations (Image 1).
- Incidentally, found to be positive for COVID-19 which was managed conservatively.
- Hospital course was complicated by recurrence of right sided pneumothorax after chest tube removal, requiring reinsertion of chest tube.
- Underwent Video Assisted Thoracic Surgery (VATS) with pleural biopsy, excision of diaphragmatic implants and pleurodesis.
- Surgical pathology was suggestive of fibroconnective tissue with focal acute and chronic inflammation, but negative for endometrial cells.



Multiple dark epiphrenic nodules found during thoracoscopic exploration for catamenial pneumothorax. Courtesy: Forster C, Bènière C, Lattion J, et alEvolutive diaphragmatic lesions causing recurrent catamenial pneumothoraxThorax 2022;77:105.

Discussion

- Catamenial pneumothorax is the most common manifestation of thoracic endometriosis, usually occurring within 72 hours of onset of menstrual cycle.
- Diagnosis of thoracic endometriosis is based on clinical presentation with characteristic surgical (image 2) and histological findings.
- VATS is considered gold standard for diagnosis. Endometrial tissue may not always be demonstrable as appearance of lesions varies with menstrual cycle.
- The sensitivity of diagnostic imaging and sampling may be improved if performed at the time of menstruation.
- Pneumothorax was found in 0.66% of COVID-19 cases in a study involving 902 cases. However, two-third of the cases were mechanically ventilated.
- Etiology of the pneumothorax in this case appears to be more likely from thoracic endometriosis considering the temporal association of pneumothorax with the onset of menses, and prior histologically proven pelvic endometriosis.
- While initial treatment of pneumothorax with chest tube drainage is the same with either cause, it is important to recognize alternative etiologies as additional treatment with hormonal suppression may be considered to prevent recurrence.

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