

# THORACIC AND PULMONARY ENDOMETRIOSIS ASSOCIATED WITH INFERTILITY

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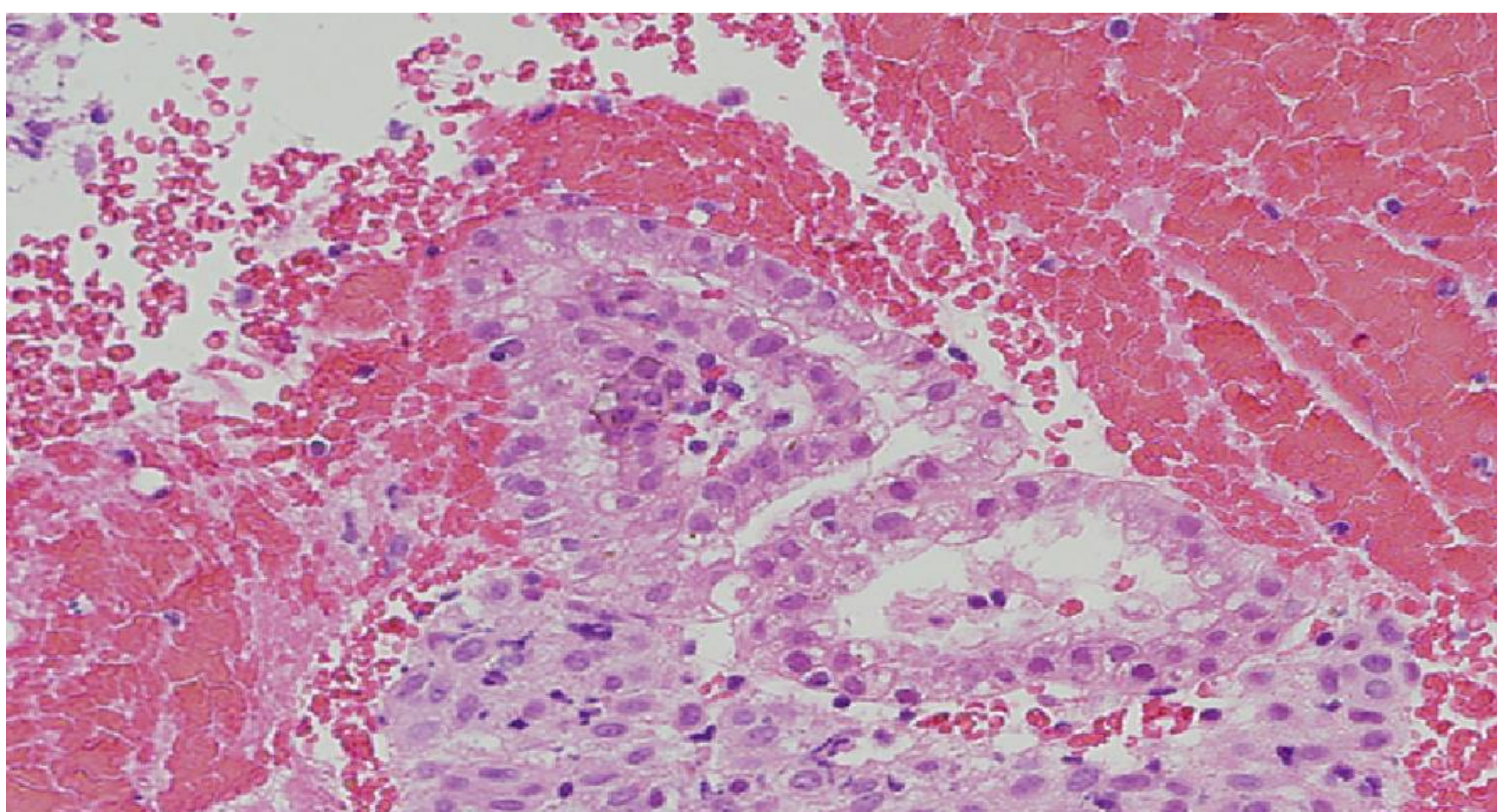
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## INTRODUCTION

Endometriosis is a common gynecologic disease, with a prevalence of 5% to 15% in women of reproductive age. Most lesions are located in the pelvic organs and ligaments, including the ovaries, uterosacral ligaments, bladder, ureter, rectum, and sigmoid colon. Extrapelvic endometriosis may involve organs such as the skin, central nervous system, diaphragm, and pleural cavity. Thoracic endometriosis refers to the presence of endometriotic lesions in the lungs and pleura, and comprises symptoms like catamenial pneumothorax, catamenial hemothorax, catamenial hemoptysis, and lung nodules. The most frequent manifestation of thoracic endometriosis is catamenial pneumothorax, present in greater than 70% to 80% of cases. Pulmonary endometriosis (PEM) is a rare disease characterized by the proliferation of ectopic endometrial tissue in the lungs, which presents as catamenial hemoptysis. Various theories have been proposed to explain pulmonary endometriosis, including coelomic metaplasia, retrograde menstruation, stem cell theory, and microembolization theory. The predominant theory consider that pulmonary endometriosis is caused by peritoneal implants that make their way through fenestrations in the diaphragm to seed the pleural space, and usually these fenestrations seem to be present mostly on the right side of the diaphragm. Our objective is to evaluate the surgical and clinical features of thoracic and pulmonary endometriosis and their association with infertility.

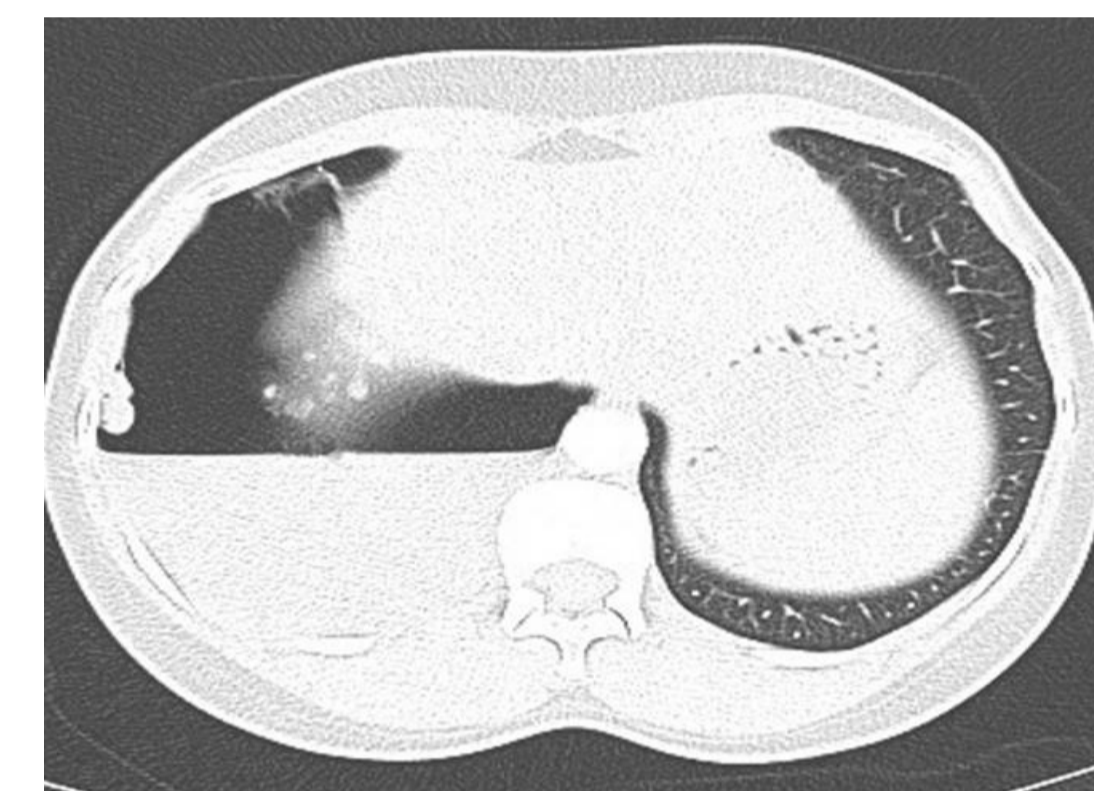
## RESULTS

A 26-year-old woman was referred to the outpatient department of our hospital with a history of two years infertility and catamenial hemoptysis recently. During the last 6 months, the hemoptysis became associated with her menstrual cycle with no thoracic pain, respiratory embarrassment, cough, fever, night sweats, or weight loss. Computed tomography revealed exudation shadows and fiber lesions in the left lower pulmonary, suggesting of pneumonia and endometriosis and the clinical diagnosis was pulmonary endometriosis. Thoracoscopic wedge resection of the left lower pulmonary lobe was performed and stage 4 pelvic endometriosis was diagnosed in the patient via laparotomy. The patient conceived after 3 cycles of IVF therapy after laparotomy and delivered vaginally. The other patient was a 33-year-old woman with three years infertility and endometriosis diagnosed with abdominal surgery. After the diagnosis of pelvic endometriosis presented catamenial pneumothorax, dyspnea, cough, and chest pain during menses. The first pneumothorax episode occurred at age 32 years. The diagnosis of catamenial pneumothorax was made by thoracic surgeons during evaluation of macroscopic findings and after receiving histopathologic biopsy. The first episode of pneumothorax was treated by chest drainage of the patient. After the second episode of pneumothorax surgical intervention was performed and the surgical findings were diaphragmatic lesions, pleural and parenchymal implants. Postoperative hormone treatment was made with a gonadotropin-releasing hormone (GnRH) analog. The patient conceived during the first postoperative IVF cycle, and delivered with caesarean section 1 year after operation.



## CONCLUSIONS

Pulmonary and thoracic endometriosis, represented by hemoptysis and catamenial pneumothorax, was strongly associated with severe pelvic endometriosis and a high rate of infertility, by multiple mechanisms including mechanical obstruction, luteal phase defects, reduced fertilization, and altered folliculogenesis, all of which can lead to ovulatory dysfunction and poor oocyte quality. Another explanation deals with immunologic changes found in the follicles of patients with endometriosis such as increased concentrations of interleukins (e.g., IL-1b) and tumor necrosis factor- $\alpha$ .



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