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## **Endometriosis with dyspnea – is it possible?**

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### **ABSTRACT**

Dyspnea is defined by American Thoracic Society as a subjective experience of breathing discomfort that consist of qualitatively distinct sensation that vary in intensity. As a pulmonary symptom, it is rarely associated with pathology of the reproductive organs. However, shortness of breath can be the first sign of endometriosis. The entity known as thoracic endometriosis syndrome is a manifestation of endometriosis, within the lung

parenchyma or on the diaphragm and pleural surface. This includes catamenial pneumothorax, hemothorax, hemoptysis, and pulmonary nodules.

**KEY WORDS:** dyspnea, *endometriosis*, thoracic endometriosis syndrome

## **INTRODUCTION**

Endometriosis is defined as an estrogen-dependent chronic inflammatory condition with the presence of endometrial glands and stroma outside the uterine cavity. It affects 6 - 10% women in their reproductive period. Moreover, it is the most common cause of pelvic pain and infertility. [1,2] Pelvic pain of varying severity is the most common symptom. Pain may appear unexpectedly and transiently during the menstrual cycle or be continuous, blunt, pulsating, acute and aggravated by physical activity. It is characterized by a long occurrence (chronic pain) and, in most cases, a relationship with painful menstruation, dyspareunia, deep pelvic pain, lower abdominal pain with or without back pain, and lumbar pain. [3]

Endometriosis in remote locations, such as lungs, is probably due to the spread through the circulatory system or metaplastic transformation, but the pathogenesis is not precisely known. Unfortunately, proposed pathogenic theories (retrograde menstruation, coelomic metaplasia and Müllerian remnants) do not explain all the different types of endometriosis. [4]

## **THORACIC ENDOMETRIOSIS SYNDROME**

Chest endometriosis was first described in 1938. [5] Symptoms of thoracic endometriosis syndrome (TES) are largely related to the anatomic location of the lesions. TES is defined as the appearance of the pulmonary clinical symptoms within 24 hours prior to and 72 hours after onset of menstruation.

The most common symptom of TES is catamenial edema and associated dyspnea, which may be one of the first symptoms of this disease. Other symptoms, which occur less frequently, include: menstrual pleural hematoma and menstrual pneumothorax. The pulmonary type is also distinguish, in which the ectopic endometrial focus placed in the lung parenchyma results in menstrual hemoptysis and lump nodules (6%). [6-9]

## **CATAMENIAL PNEUMOTHORAX**

Catamenial pneumothorax is present in 80% of cases, which makes it the most common clinical manifestation of TES. The key of the diagnosis is that catamenial pneumothorax is recurrent and occurs within the first 72 hours after menstruation. It may be unsystematically - not with every menstrual cycle. The most common site of this type of pneumothorax is the right lung. There are rare cases of symptom localisation on the left side, and on very rare occasions there may be a bilateral. Symptoms are nonspecific, because there are the same manifestations as for other types of pneumothorax like breathlessness, chest pain and cough. The most cases symptoms are mild, but there may be severe presentations. [10]

## **CATAMENIAL HEMOTHORAX**

A rare manifestation of thoracic endometriosis is catamenial hemothorax - it is occurring in 14% of cases. Similar to catamenial pneumothorax in almost all cases, affects the right lung. The most common presenting symptoms include dyspnea, cough and chest pain. Moreover it could be confused with pulmonary embolism. Intensity of symptoms depends on the quantity of blood loss. Sometimes it occurs with nodular lesions of the pleura, multiloculated effusions, or bulky pleural masses. In almost all cases, chest x-ray shows the presence of pleural effusion without specific characteristics. [10]

## **CYCLIC HAEMOPTYSIS**

Haemoptysis during menstruation is extremely rare and always is associated with pulmonary parenchymal endometriosis. The cause of this manifestation is ectopic endometrial tissue located in the lung that responds bleeding to cyclical hormonal variation. [10]

## **PULMONARY NODULES**

Pulmonary nodules are frequent radiological features in patients with all type of TES. The most cases are connected with catamenial haemoptysis. [10]

## **DIAGNOSTIC OF TES**

The correct diagnosis for TES requires detailed differential diagnosis and the exclusion of other pathologies that cause nonspecific respiratory symptoms. For this reason, the diagnostics of this disease cause many difficulties in clinical practice and diagnosis is often delayed. A careful examination, study of the patient's clinical symptoms and imaging diagnostics (X-ray, computed tomography (CT) and magnetic resonance imaging (MRI))

are necessary to determine the right diagnosis. Computed tomography is a first-line examination - it allows the exclusion of other disease entities and allows to localize the focus of pathology. MRI, especially high resolution MRI allows for higher image resolution, which is better at diagnosing hemorrhagic changes. It is recommended to perform diagnostics test during menstruation to increase the sensitivity of the examination. [11-12]

An interesting diagnostic and therapeutic procedure is video-assisted thoracoscopic surgery (VATS). In most cases, VATS is helpful in diagnosing TES. During the procedure, thorough examination of the pleural cavity and diaphragm is necessary. [13]

## **SUMMARY**

Diagnosis of TES is extremely difficult. Non-specific symptoms mean that the diagnosis is made late. Sometimes the disease remains undiagnosed. Cyclically occurring pulmonary symptoms including shortness of breath, often associated with abdominal and pelvic pain, should direct us to the suspicion of TES. In addition, spontaneous emphysema in a woman with preserved ovulation or receiving hormone replacement therapy, even without other symptoms may be evidence of endometriosis, which is why in each such case diagnostics should be deepened.

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