

Syndrome of Accumulation of Air and Fluid in the Pleural Space (Pleurisy, Hydrothorax, Pneumothorax), Shortness of Breath, Diagnostics, General Understanding of Etiology and Pathogenesis

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Abstract: This article delves into the information about Syndrome of accumulation of air and fluid in the pleural space (pleurisy, hydrothorax, pneumothorax), shortness of breath and its diagnostics, as well as General understanding of etiology and pathogenesis.

Keywords: Diagnostics, analysis, pathogenesis, etiology, syndrome of pleural space and etc.



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Pleurisy is a disease characterized by accumulation of fibrin of the pleural membranes or inflammatory liquid - exudate in the pleural cavity. Sometimes it is also referred to as cases with the accumulation of pathological fluid - trasudates in the pleural cavity due to various diseases, not related to inflammation. Both lungs are covered with visceral pleura from the outside, and the inner surface of the chest where they are located is covered with parietal pleura, and there is a pleural space in certain areas between the two pleural membranes. When the disease occurs, fluid can accumulate in these places. Pleurisy is often not an independent disease, but occurs in more than 50 diseases. It develops as a complication of diseases of the lungs or, less often, organs adjacent to the pleural membranes (chest, interthoracic cavity, subdiaphragmatic space). In some cases, pleurisy is a symptom of systemic diseases. There are two types of pleurisy according to the causes of its development: infectious and non-infectious (aseptic) pleurisy. The causes of infectious pleurisy can be pneumococcus, staphylococcus, tubercle bacilli, mycoplasma, fungus, protozoa and others. Causes of non-infectious aseptic pleurisy include tumors, lymphogranulomatosis, systemic diseases of connective tissue, injury (trauma), pulmonary infarction, acute leukemia, hemorrhagic, diathesis, post-infarction Dressler's syndrome. observed.

There are two types of pleurisy: dry pleurisy and exudative pleurisy. In dry pleurisy, inflammation of the pleural membranes is accompanied by a small accumulation of fibrin on its surface. In this case, the visceral and parietal pleural membranes are reddened, swollen and thickened due to inflammation. Dry pleurisy can develop due to the above reasons. Tuberculosis-related dry pleurisy can occur when a tuberculous lesion is located under the pleura or when it ruptures and spreads into the pleural cavity, as well as when it spreads through the blood. In some cases, dry pleurisy can develop as the first sign of the onset of tuberculosis, several months after the infection. In the development of pleuritic disease, in addition to the main cause, the change in the sensitivity of the body, which is accompanied

by a hyperergic reaction of the pleura, is important. Often, dry pleurisy appears before the development of exudative pleurisy. The disease can start suddenly with severe pain. Pain appears in the area of chest inflammation when the rib area of the parietal pleura is damaged. When other parts of the pleura are inflamed, the pain is in the shoulder muscles, under the right rib, behind the sternum, and in the arm. The pain increases at the peak of breathing, when coughing, when talking, when bending to the opposite side, and decreases when lying down on the affected side.

The strongest pain is at the beginning of the disease. If the visceral pleura is inflamed, the pain will not be strong. When the exudate appears, the pain may decrease and disappear. There is a dry cough, body temperature does not rise, sometimes it is subfebrile. When breathing, the movement on the inflamed side of the chest is slower than on the healthy side. The area of the chest where the inflammation is located hurts when lightly pressed with the hand, and it is found that the muscles are stiff. The friction noise of the pleura is felt through the palm. Also, the disease may last 1-3 weeks to heal or develop exudative pleurisy. Prolonged dry pleurisy indicates the presence of active tuberculosis in the lungs or lymph nodes. Treatment of dry pleurisy consists of treatment of the main diseases (tuberculosis, tuberculosis, etc.). Analgesics and antitussives are given. Exudative pleurisy is a disease characterized by the formation of exudate, an inflammatory liquid, in the pleural cavity of the pleural membranes. According to the quality of the exudate, it is serous, fibrinous, hemorrhagic, purulent, chylous and mixed. The pleural membranes become inflamed, the permeability of the walls of the vessels in them increases, exudate accumulates under the influence of negative pressure in the lower sides of the pleural cavity. Increasingly, the exudate compresses the air in the lungs, compresses it, and pushes the interthoracic organs to the healthy side. As a result, lung and heart function deteriorates. In some cases, the disease starts gradually, sometimes suddenly. Body temperature rises to 39-40°C, stabbing pain in the chest, painful cough begins to bother. It is seen that the patient sits in a forced position (when there is a lot of exudate), sometimes he lies on the affected side.

Hydrothorax is a pathological condition characterized by the accumulation of excess fluid in the pleural cavity. The term "hydrothorax" consists of two Greek roots: "hydor" - water, "thorax" - chest, which literally means "chest dropsy". The human lung is covered with two sheets of serous membrane - the pleura. One of them densely covers the surface of the lungs and their vessels. The second is tightly adjacent to the ribs and organs that are located between the lungs (heart, esophagus, lymph nodes, etc.). The main task of the pleura is to participate in the act of breathing. Normally, the pleural cavity contains a small amount of serous fluid, due to which the sheets easily slide relative to each other, protecting the organs from excessive friction and injury during breathing. If the level of fluid between the pleura exceeds the physiological norm, then they speak of the presence of hydrothorax, which is accompanied by characteristic symptoms of respiratory failure (shortness of breath, heaviness in the chest, cyanosis of the nasolabial triangle). With hydrothorax, the accumulating fluid is non-inflammatory in nature (transudate), in contrast to exudative pleurisy, in which the effusion is of inflammatory origin (exudate). Transudate is a clear colorless or slightly yellowish liquid, has an alkaline reaction, the protein level in it is not more than 3%. The amount of transudate is very variable and can reach several liters.

All the inconveniences and problems that hydrothorax causes are mechanical in nature. Accumulating in the pleural cavity, the fluid begins to put pressure on the lungs and mediastinal organs. A large volume of fluid in the pleural cavity can provoke a serious complication - acute respiratory failure, which threatens the life of the patient. In addition, there is a high risk of displacement of the mediastinal organs, circulatory disorders and the development of severe cardiac pathology. Hydrothorax is not an independent disease, that is, it develops without fail against the background of another disease. The cause of its occurrence is always a chronic or complicated disease of the internal organs, as well as a side effect of treatment. Renal failure associated with nephrotic syndrome. It is a consequence of kidney diseases of a different nature, which involve damage to the renal glomeruli: glomerulonephritis, amyloidosis of the kidneys, collagenoses, toxic nephropathy, etc. Alimentary dystrophy associated with inferiority or malnutrition (severe form of protein-energy malnutrition). In this case, effusion into the pleural cavity is directly related to a deficiency of vitamins B and C, a decrease in lymph outflow. Cirrhosis of the liver. Hydrothorax develops in 5-10% of patients in the

terminal phase of liver cirrhosis, which indicates the presence of congestion in the blood system. It is due to hypoalbuminemia, portal hypertension, and concomitant ascites. It is a consequence of the ingress of ascitic fluid from the abdominal cavity into the pleural cavity through the diaphragm. peritoneal dialysis. This procedure involves the introduction of a large volume of fluid into the abdominal cavity, and then its removal. Hydrothorax occurs due to the movement of dialysis fluid from the abdominal cavity into the pleural cavity. At the same time, right-sided hydrothorax develops in 90% of cases.

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