

Causes, Symptoms, and Treatment of Intercostal Neuralgia

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Abstract--*Intercostal neuralgia (thoracalgia) is characterized by damage to the intercostal nerves and is accompanied by acute and sometimes stabbing pain.*

It is not uncommon for this pathology to be differentiated from heart disease because intercostal neuralgia has symptoms similar to those of heart disease. This type of pathology occurs not only among the adult generation – it can also be observed in children and young people. It is not uncommon for intercostal neuralgia to become a symptom of another, more serious disease (for example, pleurisy or a spinal cord tumor). The etiology of this disease can be completely different, and therefore is not limited to clinical neurology – it often includes consultation with related specialists, such as a cardiologist, vertebrologist and oncologist.

This article describes the examination of a patient diagnosed with intercostal neuralgia. According to the doctor's recommendations, the patient was examined using instrumental diagnostics in order to exclude heart disease. Then the patient was prescribed a treatment regimen, which (according to the patient) proved to be effective in the treatment of intercostal neuralgia.

Key words--*intercostal neuralgia, rib, heart, pain in ribs, pain in the heart, treatment of intercostal neuralgia.*

I. INTRODUCTION

Among the many different symptoms of intercostal neuralgia, according to Yakhno N. N., there are tumor, inflammatory and degenerative changes in the nervous system; to a greater extent it concerns the peripheral nerve trunks. Central predisposing factors include [10]:

- Diabetes;
- Gastrointestinal diseases;
- Injuries or diseases of the ribs or spine;
- Deficiency of minerals and vitamins;
- Stress, fatigue;
- Tumors in the thoracic spine;
- Inflammation or excessive tension;
- Herpetic nerve damage;
- Progressive degenerative disc disease;
- Intoxication of various etiologies;
- Injuries to the thoracic nerves.

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Additional factors contributing to the appearance of intercostal neuralgia according to V. K. Romanov include [9]:

- Injuries and malformations of the vertebral column;
- Weakening of the immune system;
- Frequent alcohol consumption;
- Menopause;
- Changes in the hormonal system;
- Pathology of the heart and blood vessels.

Pathology according to Pavlov I. P. develops with the activation of pain receptors (noniceptors of the peripheral nervous system) by cytokines released from damaged tissue. The nerve begins to be affected by the bone structure, the result is a powerful release of inflammatory mediators (cytokines) – in the area of the affected nerve, the inflammatory process and edema begin to develop.[8]

As a result of the influence of one or more causes, the formation of trauma, inflammation, or compression of the nerve root or its trunk occurs. In this case, the nerve endings receive an excessive number of impulses, experience hypoxia (lack of oxygen), which as a result is transformed into pain impulses.[1, 4]

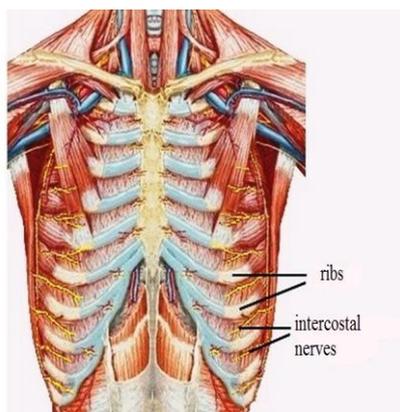


Figure 1. Anatomical location of the ribs and intercostal nerves

The main manifestation of intercostal neuralgia is pain attacks [4, 9]:

- a constant sharp pain,
- burning,
- prickings,
- periodic attacks of pain, acute and excruciating, similar to pain in the heart,
- muscle tension in the back area,
- increased pain when coughing or sneezing, torso turns,
- forced position of the body for pain relief,
- loss of sensitivity of some areas on the chest.

In this case, neuralgia may be accompanied by [2, 3, 4]:

- severe sweating,
- sudden pressure fluctuations,

- lower back pain that mimics kidney pain.
- removed by taking nitroglycerin,
- pain in the heart is given to the arm, shoulder,
- pain does not change with deep breathing,
- there is a violation of the heart rhythm.

When neuralgia pain is: long-term, does not relieve at night,

- pain increases when the body turns and tilts, it hurts a lot when probing the intercostal spaces,
- there is no relief from nitroglycerin,
- heat and taking painkillers help.

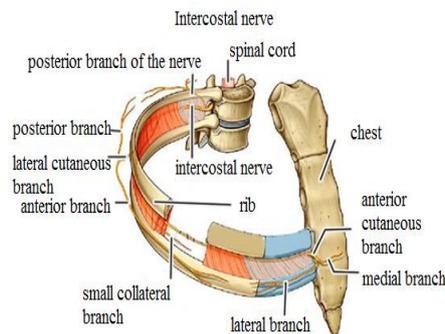


Figure 2. Structure of the intercostal nerve

If the nerve is affected by a poison, a physical factor, a virus or a bacterium, as well as tumors, HIV, spinal gliosis, pleurisy or pneumonia, the symptoms will be similar to these pathologies. As in the case of physical impact on the nerve-intercostal and intervertebral muscles reflexively spasm in the type of mechanical feedback hence the increase in pain and inflammation.[8, 10]

There is no separate classification of this pathology: it is distinguished by forms depending on the cause of the disease. There are also primary and secondary lesions.

Since now the diagnosis is not fully prescribed – this pathology has its own personal code and is recorded in medical documents as M79. 2

As with any other disease, intercostal neuralgia can be accompanied by complications in the absence of treatment. The most common ones are:

- Pneumothorax;
- Tissue necrosis;
- Subarachnoid block;
- Hematomas;
- Neuritis.

First, the diagnosis of intercostal neuralgia is based on the main complaints of chest pain and examination of the patient with a careful feeling of the intercostal spaces. In General, the diagnosis becomes clear from the examination, but sometimes in complex cases, instrumental diagnostic methods are used to identify the cause of neuralgia:

- electron urography, especially in cases of suspected nerve injury,
- computer tomography or magnetic resonance imaging of the spine to exclude volumetric processes in the thoracic region (hernia, tumors of the spine and surrounding soft tissues),
- x-ray of the spine and chest organs,
- for pain on the left side-ECG of the heart and ultrasound to exclude heart disease.
- General analysis of blood and urine, especially for pain with irradiation in the lower back,
- blood for antibodies to herpes viruses, if infectious nerve damage is suspected.

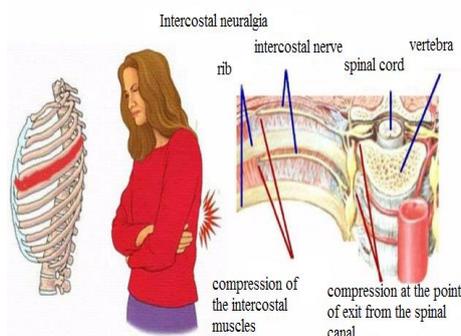


Figure 3. The pathogenesis of intercostal neuralgia.

II. METHOD OF RESEARCH

The examination was conducted by Moscow city polyclinic No. 3.

At the time of the examination, the clinic received a patient who was diagnosed with intercostal neuralgia. According to the words of a patient who has started to worry about pain in the left side of the chest, increased pain when turning, the disappearance of pain when taking a horizontal position is prohibited, tingling in the chest area at the place where the pain appears.

The patient is assigned a diagnosis, including ECG, ultrasound of the heart. According to the results of the examination, pathologies on the heart were not revealed.

At the second appointment, the doctor palpated the intercostal areas, periodically patient experienced pain or discomfort. The patient was diagnosed with intercostal neuralgia and prescribed treatment:

1. Anti-depressant pills of Tyrolidzhen ½ of tablet in the morning and ½ of tablet in the evening;
2. Ketonal 1 table/day;
3. Heating the chest with a warm woolen handkerchief;
4. During the treatment period, physical activity, stress and alcohol intake are prohibited.
5. The course is 7 days.

III. RESULTS

Upon arrival of the patient for a repeat appointment, according to the patient's words, pain disappeared in the chest totally. The prescribed treatment regimen was able to alleviate the pain, and it further and completely eliminated all the symptoms of intercostal neuralgia.

IV. DISCUSSION

When making a diagnosis of intercostal neuralgia of the vagina, one should be able to distinguish the pathology of the nervous system from the pathology of the heart. Not infrequently, patients consider the resulting illness as a heart condition, and consider the symptoms to be signs of a heart attack. For the purpose of making correct diagnosis, it is recommended to perform instrumental diagnostics.

V. CONCLUSION

Summing up all the above, we would like to say that intercostal neuralgia can be safely distinguished from heart pathology. When prescribing treatment after diagnosis, it is important to include anti-inflammatory and sedative agents. Examinations have shown that drugs of Tirolidzhen and Ketonal have a good therapeutic effect.

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