



## **LYMPHATIC SYSTEM DISEASES OF THE LYMPHATIC SYSTEM. INFLAMMATION OF LYMPHNODES-LYMPHADENITIS**

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<b>Article history:</b>	<b>Abstract:</b>
<b>Received:</b> 11 <sup>th</sup> November 2022	In this article, the structure of the lymphatic system, lymph nodes, inflammation of the lymph nodes, the human lymphatic system-the type of lymphatic capillaries, the complex of lymph nodes, the formation of lymph nodes and two lymphatic channels, the causes of diseases that lymph flows through lymph nodes is mentioned about partial or complete swelling of cells, tuberculosis of the lymph node in specific lymphadenitis
<b>Accepted:</b> 14 <sup>th</sup> December 2022	
<b>Published:</b> 28 <sup>th</sup> January 2023	

**Keywords:** lymphatic capillaries, swellings, colloidal solution, tangle, fold, bone, periosteum, crown, white blood, gem, lymphadenitis

Lymphatic system (latin *systema lymphaticum* ) – capillaries and other vessels and structures that take lymph from tissues and organs and pour it into the venous system in humans and vertebrates . The human lymphatic system consists of a type of lymphatic capillaries, a network of lymphatic vessels, lymph nodes and two lymphatic channels. Protein that is not absorbed from the tissues into the capillary blood vessels during the removal of excess interstitial fluid of the lymphatic system and its return to the venous flow substances participate in the formation of colloidal solutions. The lymphatic system enters the cardiovascular system. The head part of lymphatic capillaries consists of tubes of various shapes that form a tight ridge and ridges. They are present in all organs except brain and spinal cord, spleen, crown, white blood cells and placenta. Diameter of lymphatic capillaries several times more than that of vascular capillaries. Their wall has high permeability. Lymph vessels are formed from the network of lymphatic capillaries, valves that direct the flow of lymph are placed in them. Lymphatic vessels are formed inside the organs and they become lymphatic vessels leaving the organ. Superficial and deep lymphatic vessels are distinguished in each internal organ. The human body also has superficial lymphatic capillaries starting from the skin, subcutaneous fat layer and fascia. Deep lymphatic vessels are capillaries from bones, periosteum, bones, muscles, nerves and blood vessels begin with. Lymph vessels expand in appropriate places and from lymph nodes. It moves through the lymphatic system due to tissue fluid pressure, lymph accumulation, and body muscle contraction. Lymph vessels outside the organ to nearby lymph nodes is poured. Cell elements of lymph consist of lymphocytes, monocytes and a few granular leukocytes. Lymphoid elements of the blood are formed in the organs of the lymphatic system and perform a barrier function, i.e. They neutralize foreign body bacteria that have entered the body. Cancer tumors spread through lymph nodes. The left bronchomediastinal lymph trunk (which collects lymph from the left half of the chest ) and the left subumbilical trunk ( which collects lymph from the left arm ) join the place where the chest lymph drains. Right lymph from the right half of the head and neck, right arm and chest (lymph from the right half) liquid. This path is formed by the joining of the right jugular lymph trunk, the right subumbilical lymph trunk, and the right bronchomediastinal lymph. The lymphatic system is an addition to the vascular system, removing substances from tissues and cells that cannot be absorbed into their capillaries is a system of additional vessels. Substances with a large molecular weight and volume are absorbed into the lymphatic capillaries. Lymphatic tissue produces lymphocytes, which contain blood- shaped elements.

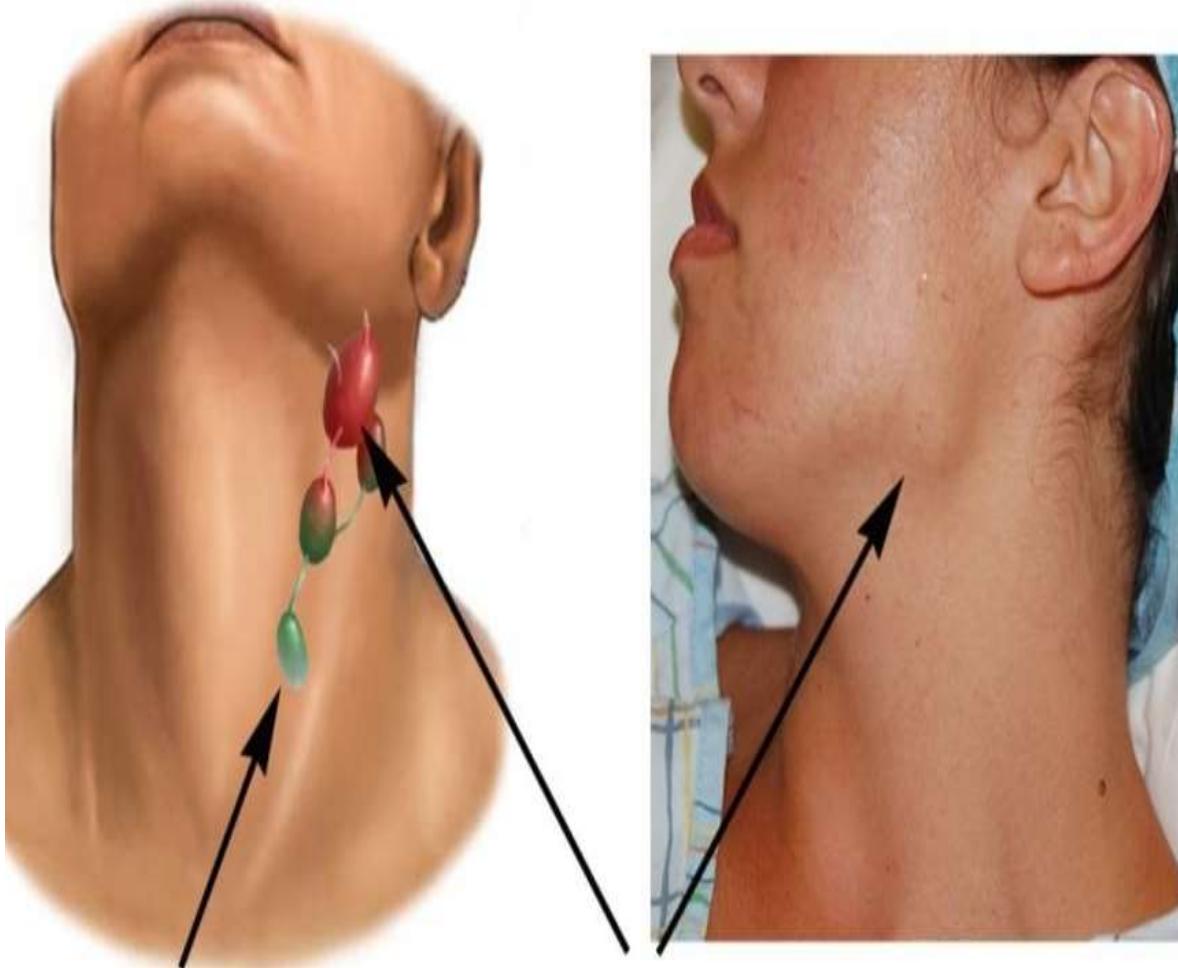
The following components of the lymphatic system are:

1.lymphatic capillaries; 2.lymphatic capillaries; 3.lymphveins; 4.lymph nodes; 5.main lymphatic vessels.

Lymphatic capillaries – consists of a system of tubes starting from the tissue in the form of a loop, in a closed expansion state. Vascular capillaries, on the other hand, are tubes with two open ends connected to arterioles and venules. Blood vessels capillaries, the wall of lymphatic capillaries is larger. They are not found in the following branches: 1.brain and spinal cord; 2.coronal matter; 3.epidermal layer of the skin; 4.internal organs in the epithelial layer. Lymphatic capillaries begin in a closed state and from a network of lymphatic capillaries. Lymphatic vessels begin from it, the wall of these vessels thickens, and it is made up of smooth muscle fibers, inside which there are valves that ensure the flow of lymphatic fluid in one direction. Large lymphatic vessels are located together with blood vessels and are named after them. Lymphatic vessels divide into lymph nodes in certain places. Blood flows through the lymph nodes ( nodulus lymphaticus ) 5-8 times before flowing into the main lymphatic vessels. And in the leg 8-10 times to the lymph nodes it is separated and then flows into the main lymphatic channels. The number of lymph nodes increases from basal mammals to primates. They are especially abundant in humans, under the neck, around the trachea and bronchi, in the abdominal organs, in the mesentery, in the groin area is found in the armpit, elbow and knee. Lymph nodes are

surrounded by a capsule- cortex made of dense connective tissue. This capsule creates barriers inside the lymph nodes. Between the barriers, lymphoid and mucous substances are located in the form. To each lymphatic concept to several lymphatic vessels (vas afferentia ) is poured. These lymphatic vessels pierce the capsule and open into the sinuses. The lymphocyte formed in the lymph nodes is added to the lymph fluid and flows to the vessels ( vasa efferentia ) leaving the nodes. The number of draining lymphatic vessels is less, but the diameter is bigger. Function of lymph nodes: 1.to produce lymphocytes; 2. Lymphatic fluid is purified; 3.production of antibodies; 4. Acts as a mechanical filtr. Lymph nodes are small oval formations containing immune cells. They are found in different parts of the body. The main function of lymph nodes is to collect cells that can fight infection and filter the lymph that flows through them. Various infectious diseases in the process, lymph nodes become inflamed and lymphadenitis develops. Types and stages of lymphadenitis. The classification of lymphadenitis includes distinguishing the following types of this disease:acute lymphadenitis occurring in the course of rapidly developing infections (for example: angina); chronic infections (tuberculosis, HIV, infection), chronic lymphadenitis in the course of oncological diseases. Acute or reactive lymphadenitis, in turn, goes through several stages: cataral (increased blood circulation, saturation of the lymph node with immune cells);hyperplastic ( increased lymphoid tissue); purulent (necrosis of the nodular tissue in the process of continuous severe inflammation) purulent lymphadenitis can be caused by a purulent snack of the node and pus falling into the surrounding tissues. More severe forms of the disease- fibrinosis, ihorosis( rot), hemorrhagic (infiltration into the blood), necrotic (necrosis of lymph node tissues). Nonspecific process staphylococci, caused by streptococcus and other common microorganisms. Specific lymphadenitis refers to tuberculosis of the lymph node. Treatment of lymphadenitis should begin as soon as the first symptoms appear. Causes of lymphadenitis There are various causes of lymphadenitis.Infections The immune system is activated in response to foreign substances or antigens, which can cause enlarged and painful lymph nodes.Thus, axillary lymphadenitis occurs in the course of an infected injury or in the process of chronic inflammation of the tissues of the upper part of the body. Some infections (HIV, mononucleosis, fungal and parasitic infections) can cause general enlargement of the lymph nodes. In particular, long-term lymphadenitis is characteristic of the early stages of HIV infection. Systemic inflammatory diseases In systemic skin tuberculosis, rheumatoid arthritis and other autoimmune processes, the lymph nodes are saturated with inflamed immune cells, which is more common in women.Oncological diseases The penetration of malignant cells from the diseased organ through the lymphatic vessels leads to the appearance of rapidly growing dense formations. In addition to cancer processes, the cause of the disease can be blood diseases (leukemia, lymphoma). Symptoms and diagnosis of lymphadenitis In a pathology such as lymphadenitis, the symptoms are determined by the main disease and symptoms of damage to the lymph nodes appear. Symptoms of lymphadenitis: - enlarged, painful lymph nodes in the neck, armpit and groin; - purulent lymphadenitis can occur with purulent suppuration of the node and pus falling into the surrounding tissues. More severe forms of the disease – fibrinosis (with impregnation of the organ with fibrin), ihorosis (rot), hemorrhagic (absorption into blood), necrotic (necrosis of tissue of lymph nodes). Nonspecific process is caused by staphylococci, streptococci and other common microorganisms. .n; - fever, runny nose, sore throat; - swelling of limbs; - night sweats; - increased density of lymph nodes. Submandibular lymphadenitis is accompanied by acute respiratory infections, dental diseases, otitis, sinusitis, tonsillitis. The same reasons cause lymphadenitis of the neck. Types and stages of lymphadenitis The classification of lymphadenitis includes the following types of this disease: - acute lymphadenitis occurring in the course of rapidly developing infections (for example, with angina); - chronic lymphadenitis in the course of chronic infections (tuberculosis, HIV infection), oncological diseases. 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If the soft tissues of the face and upper jaw teeth are damaged, or in the case of sinusitis, lymphadenitis of the neck may appear.

The diagnosis of the disease is made by external signs. A blood test is also done to find the infection and its causative agent. If the lymph nodes in the body are affected, such as in mesenteric lymphadenitis, x-rays or a CT scan may be needed to make a diagnosis. Since the cause of the disease can be various pathological conditions, their diagnosis sometimes requires a biopsy of the affected lymph node, which is taken with a thin needle. This is the most reliable way to determine the origin of lymphadenitis, for example, neck or jaw lymphadenitis. Treatment of lymphadenitis. Therapy depends on the underlying disease. Usually, lymphadenitis in children and adults recovering from an acute respiratory tract infection does not require special treatment. In other cases, the following methods may be prescribed:

- taking painkillers and anti-inflammatory drugs;
- antibiotic treatment;
- opening of purulent lymph nodes.

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## REFERENCES:

1. <https://uz.m.wikipedia.org> Archive.uz

2. <https://shifo.uz>
3. human anatomy: F.N. Bahadirov pages 243-244
4. Human anatomy; atlas. N.K. Akhmedov 87-90