



Lymphadenitis and phlegmonous adenitis

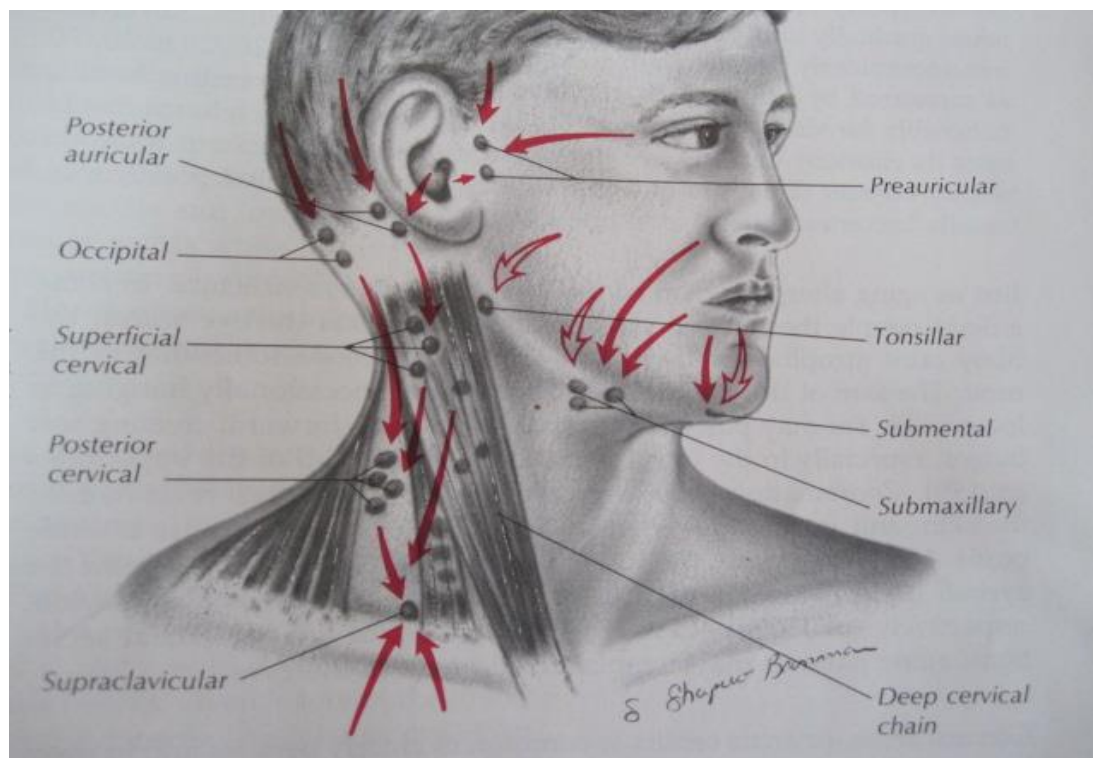
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Anatomical data.

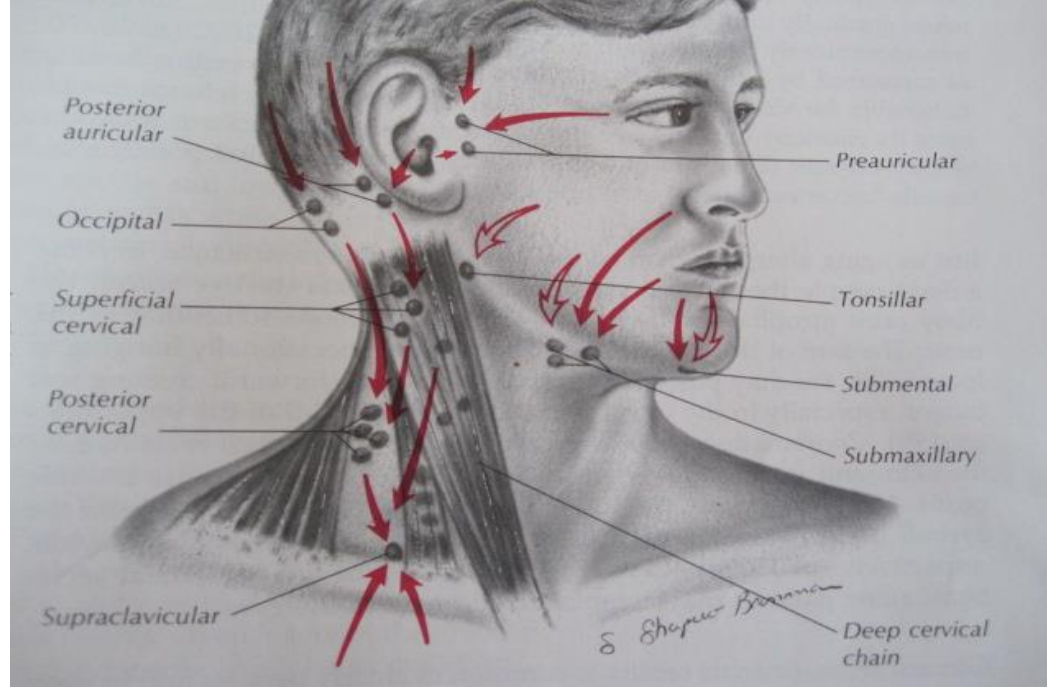
- Note that the tonsillar, submaxillary and submental nodes drain portions of the mouth and throat as well as the more superficial tissues of the face.
- Knowledge of the lymphatic system is important to a sound clinical habit: whenever a malignant or inflammatory lesion is observed, look for involvement of the regional lymph nodes that drain it; whenever a node is enlarged or tender, look for a source in the area that it drains.

- **THE NECK**

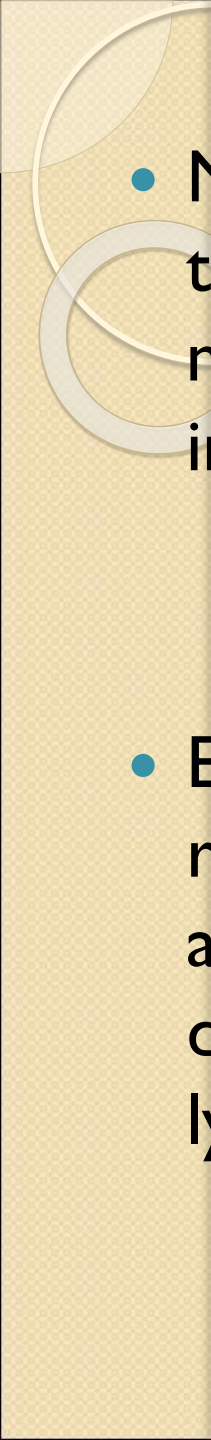
- **Survey.** Inspect the neck, noting its symmetry and any masses or scars. Look for enlargement of the parotid or submaxillary glands, and note any visible nodes.
- **Lymph nodes.** Palpate the lymph nodes. Using the pads of your index and middle fingers, move the skin over the underlying tissues in each area rather than moving your fingers over the skin. The patient should be relaxed, with neck flexed slightly forward and, if needed, slightly toward the side of the examination. You can usually examine both sides at once. For the submental node, however, it is helpful to feel with one hand while bracing the top of the head with the other

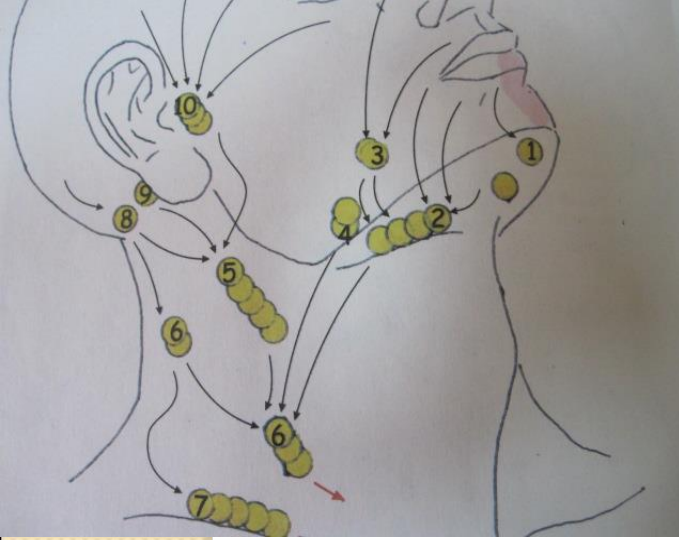


- Feel in sequence for the following nodes:
- Preauricular – in front of the ear
- Posterior auricular – superficial to the mastoid process
- Occipital – at the base of skull posteriorly
- Tonsillar – at the angle of the mandible
- Submaxillary – midway between the angle and the tip of the mandible. These nodes are usually smaller and smoother than the lobulated submaxillary glands against which they lie.



- Submental – in the midline a few cm behind the tip of the mandible
- Superficial cervical – superficial to the sternomastoid
- Posterior cervical chain – along the anterior edge of the trapezius
- Deep cervical chain – deep to the sternomastoid and often inaccessible to examination. Hook your thumb and fingers around either side of the sternomastoid muscle to find them.
- Supraclavicular – deep in the angle formed by the clavicle and the sternomastoid

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- Note their size, shape, delimitation (discrete or matted together), mobility, consistency, and tenderness. Small, mobile, discrete, no tender nodes are frequently found in normal person.
 - Enlarged or tender nodes, if unexplained, call for reexamination of the regions they drain, and careful assessment of lymph nodes elsewhere so that you can distinguish between regional and generalized lymphadenopathy.



1. Nodi lymphatici submentales
2. Nodi lymphatici submandibulares
3. Nodi lymphatici facialis/buccinatorii
4. Nodi lymphatici mandibularis
5. Nodi lymphatici cervicales superficiales
6. Nodi lymphatici cervicales profundi
7. Nodi lymphatici supraclaviculares
8. Nodi lymphatici occipitales
9. Nodi lymphatici mastoidei
10. Nodi lymphatici parotidei

- Lymph glands in the maxilla-facial region of the frontal and lateral neck part are divided into several groups, depending on their position.
- Lymph glands of the mental region are localized in the space between the front and back of the triangle surface, situated between the front bellies of digastric muscles and sublingual bone. Their number usually fluctuates from 1 to 4. Frontal mental gland is situated near the apex of mental region. Dorsal are situated a little anterior from the sublingual bone.
- Submental lymph glands receive the lymph from tissues, which surrounding frontal lower teeth, from the frontal part of the alveolar bone and mandibular body, tongue root and frontal part of sublingual region, lower lip and adjacent cheek parts.

- Submandibular lymph glands are situated in the submandibular triangle and lie outside salivary gland capsule in the form of chain along the mandibular edge.
- In submandibular glands fall tissue lymph vessels, surrounding set of mandibular teeth – from the canine level to third molar, from the corresponding to these teeth parts of alveolar bone and mandibular body.
- Sublingual lymph glands are in the tight connection with tongue lymph vessels.

- Facial or buccal lymph glands - are not big, not always detected formations, situated along the facial vein.
- Parotid lymph glands with dimensions till 0.5 cm, usually by the number 3-5, are situated as superficially, under parotid mastication fascia, as deeply in the substance itself of salivary gland. To these glands matches lymph vessels from the lateral face`s parts, from the buccal mucosa membrane, nose, eyelids, the brow skin, earflap, parotid gland.

- **Ethiology and pathogenesis.**

- The reason of maxilla-facial region lymphadenitis can be an odontogenic infection: during acute periodontitis and aggravation of this chronic process, suppuration of the root cyst, odontogenic process in periostenum, maxilla bone, perignathic soft tissues. All lymphadenitis appeared in the result of an odontogenic infection, are named odontogenic. Maxilla-facial region lymphadenitis can develop as a result of infection expansion during infectious diseases and damage of mouth mucosa membrane (stomatogenic), from tonsils (tonsillogenic), from the tissue of external, drum and inner ear (otogenic).

- More rarely the damage of lymph glands of the maxillo-facial region can be connected with the diseases and damage of skin integuments of the face and head.
- The reason of the lymphadenitis is pyogenic non specific infection, specifically coccal flora, where the mainstream significance has staphylococcus. All lymphadenitis caused by this infection, are defined as non specific process. In other cases, rarely, lymphadenitis can be caused by the lambent myco , tuberculosis mycobacteria (specific lymphadenitis), or by virus (infectious mononucleosis).

• **Classification of the lymphangitis**

- According to etiology: odontogenic and nonodontogenic, rinogenic, tonsillogenic, infectious and traumatic, dermatogenic, tumoral, stomatogenic, specific and nonspecific.
- According to pathogenesis: lymphangitis, lymphadenitis, adeno-abscesses, adeno-flegmons.
- According to the clinical picture: acute (serosal, purulent) and chronic (purulent, proliferate)
- Deep and superficial.
- Pathomorphological chronic lymphadenitis is classified: hiperplastica, descuamativa, hiperplastica-descuamativa, productiva.

Lymphangitis – inflammation of the lymph vessels.

- Lymphangitis develops in the result of penetration of microflora, toxins in lymph tracts. Peculiarities of the lymph vessels – length and caliber of the lymph vessels are more reduced in comparison with other area of the body that explains the absence of the clinical features of lymphangitis in inflammation processes of the lymph system from this level.

- **Clinical picture.**

- Maxilla-facial lymphadenitis develops as reaction of lymph nodes on any inflammatory process. Lymphadenitis can be the one of the disease symptom (acute or aggravation of the chronic periodontitis, periostitis or osteomyelitis of the maxilla and other), and also as independent disease.
- Distinguish two types of lymphadenitis: acute and chronic lymphadenitis. Acute lymphadenitis can proceed in serosal and purulent forms. Chronic lymphadenitis proceeds in the hyperplastic form, it can transfer in the purulent form.

- **Acute serosal lymphadenitis.**
- Acute serosal lymphadenitis of the maxilla-facial and neck region (lymphadenitis acuta) – is the primary stage of the inflammatory changes of lymph nodes. Appear the morbidity of one or several lymph nodes. The distinct can be palpated in the nature of roundish or oval form, which have soft – elastic consistence. General state during the acute serosal lymphadenitis suffers insufficiently, but at the individual patients are observed temperature reaction, not exceeding 38 C, deterioration of general state.

- Acute serosal lymphadenitis can melt in purulent lymphadenitis. Appear considerate increase and indurations of one or some lymph nodes. They are painless. Appearance of the morbidity shows the aggravation of inflammation in the main focus. During the chronic non specific lymphadenitis lymph nodes, as a rule, remains flexible do not solder with surrounding tissues and skin.

Diagnostic, puncture



Antibiogram



Acute purulent lymphadenitis (lymphadenitis acuta purulenta).

- Acute purulent inflammation of lymph nodes of the facial and neck region appears rarer than chronic (blood changes, leucocytosis, ESR increase).
- Purulent fusion of the lymph nodes allows to establish future growing of morbidity, increasing of swell in their circle, in mainly cases slowly - in some days, and sometimes 1-2 weeks. Consequently can be observed progressive infiltration of the adjacent to lymph node tissues, causing its movement limitation, sealing of some teeth in one packet, and then mollities and fluctuation.
- During the acute lymphadenitis general incompatibles - is indisposition, brokenness – can be absent or can be expressed insignificant. Body temperature is 37.6-37.8 C. in the blood is observed similar changes, as during the odontogenic abscesses of maxilla-facial region.

Acute purulent lymphadenitis submentales



Acute purulent lymphadenitis submandibulares



Acute purulent lymphadenitis submandibulares



Acute purulent lymphadenitis submandibulares



25.06.2006

Acute purulent lymphadenitis cervicales superficiales



Phlegmonous adenitis (adenophlegmone).

- Sometimes occurs the capsule fusion of the lymph node and the purulence penetrate in the surrounding it cellulose. In the result develops phlegmonous inflammation - phlegmonous adenitis, accompanied by the surrounding tissues edema.
- Phlegmonous adenitis in the result of odontogenic infection is localized predominantly in the submandibular and submental region, rarer - on the lateral part of the neck.
- At majority patients the body temperature does not exceed 38-38.5 C, during the phlegmonous adenitis. Happens rigor. In the blood moderate leucocytosis and neutrophilia, ESR is increased.

Acute purulent lymphadenitis mandibularis



Acute purulent lymphadenitis mandibularis



Chronic lymphadenitis. (Lymphadenitis chronica).

- Chronic lymphadenitis is the outcome of the acute process in lymph node. In some cases there is chronic lymphadenitis with the unexpressed acute stage.
- Clinic of the chronic lymphadenitis is characterized by node increasing, by roundish or oval form, precise and even contours, non solder with surrounding tissues. During the palpation, the lymph node has solid elastic consistence, painless. The general state of the patients do not suffer, the body temperature is in norm.
- Such picture of the chronic inflammatory process is accepted to designate as chronic hyperplasic lymphadenitis.

Chronic lymphadenitis submandibulares



- In separate cases, in the result of lymph node chronic inflammation takes place the moderate granulation tissue enlargement, which replace by itself lymphoid tissue, spreads outward the node and grows to skin thereby make it thinner. During the eruption of the thinned region appears the fistulous tract. In the region of such process can develops the suppuration, but proliferative reaction is more expressed. About the purulent nature shows only discharge of purulent from the fistulous tract, often poor, or its accumulation under the scab on the skin surface.
- The chronic hyperplastic lymphadenitis should be differentiated with odontogenic subdermal and dermal granuloma, subdermal form of the actinomycosis, scrofuloderma and main with the tumor metastasis.

Treatment.

- During the acute lymphadenitis first of all it is necessary by the way of corresponding intervention in the region of primary inflammation focus (teeth extraction during periostitis, manipulation and sanitation of the extracted teeth cavity during the alveolitis and other), prevent the future entry of microorganisms in the lymph nodes.
- During the serosal lymphadenitis the treatment could be conservative. Physiotherapeutic procedures are justified, Bandage with Dimecsid solution (in dilution with sol.Furacilini 1/3)

- Vitamins, analgesics and antisensitizer are put on.
- In the case of ineffectiveness of the leaded therapy the stimulating arrangements are justified (autohemotherapy, vitaminotherapy). It is necessary to scoop from the purulent focus remains of the halfbroken lymph node.
- In the first days after opening of the purulent focus it is effectually to introduce in the wound drainage, Bandage with the Levomykoli ointment (which promote the supuration outflow).
- During the phlegmonous adenitis the purulent cavity is opened according to the general rules of phlegmons opening.

Surgical therapy, The marking of the operative field by the brilliant green



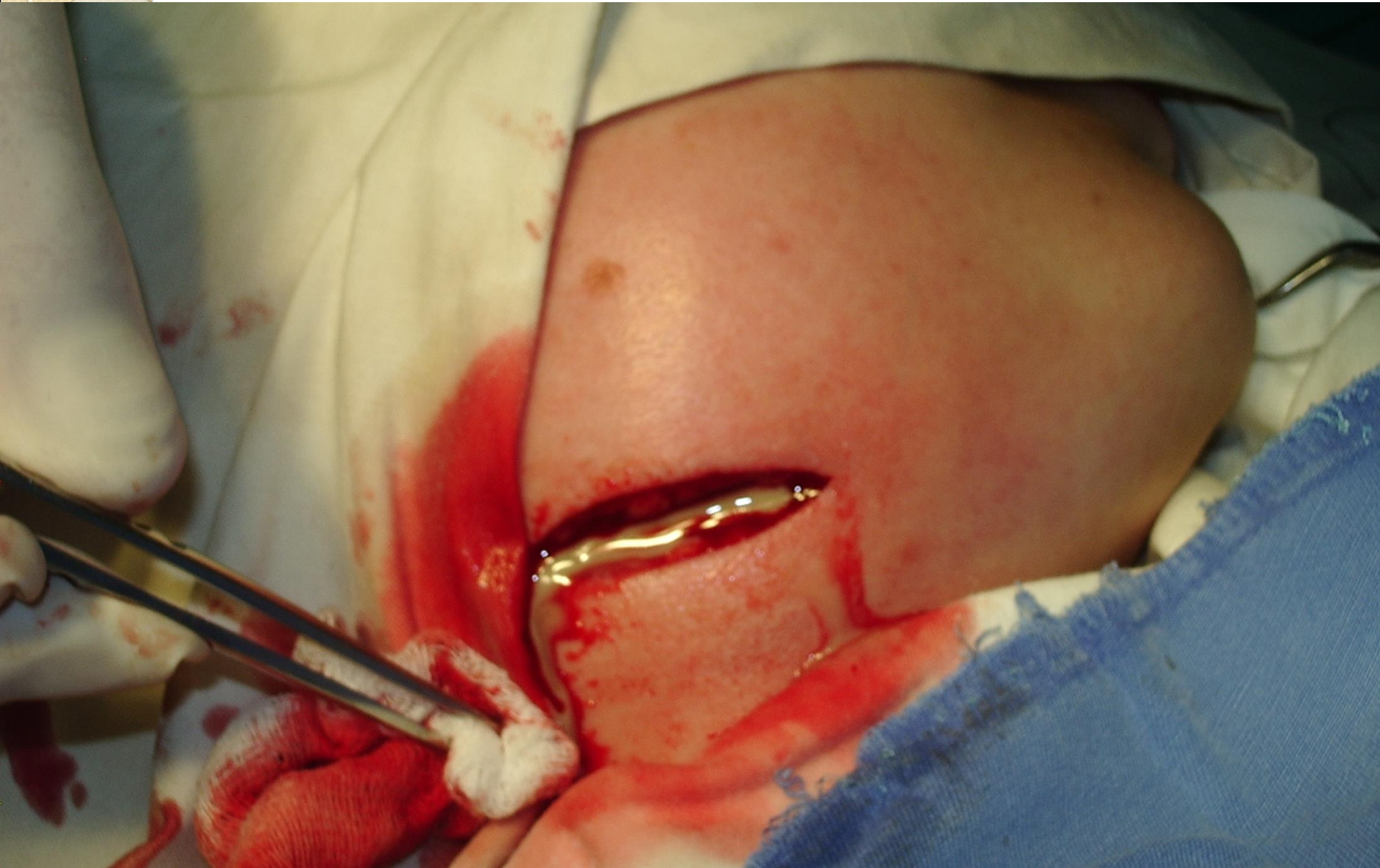
Anesthesia



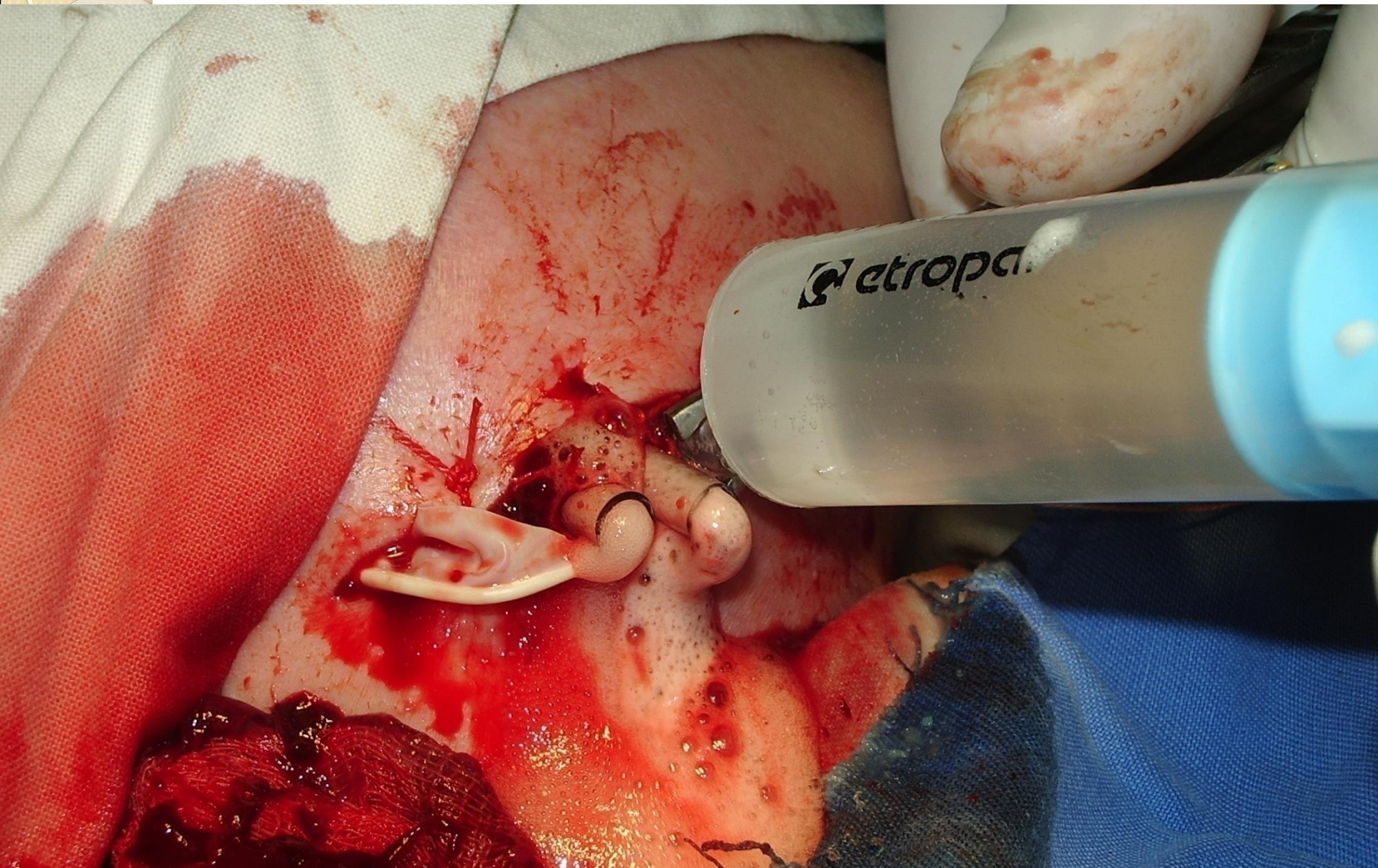
Discission



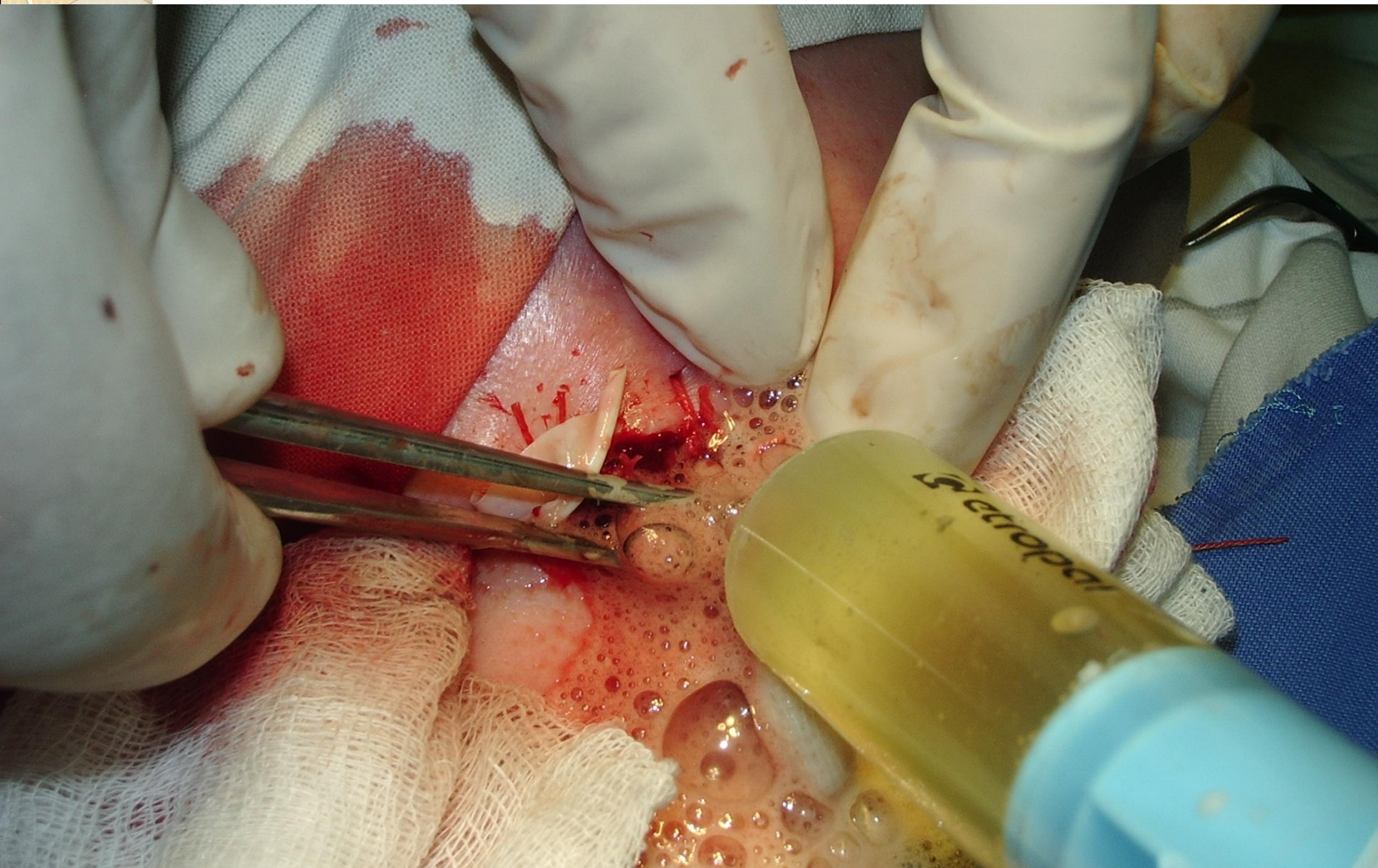
Evacuation of suppuration from the wound



Lavaj sol.H₂O₂ 3%



Lavaj sol.Furacilini



Drain tube, Bandage with the Levomykoli ointment (which promote the supuration outflow)



Acute purulent lymphadenitis submentales



Drain tube



