

УЧЕБНИК

Н.В. Мерзликин, Н.А. Бражникова,  
Б.И. Альперович, В.Ф. Цхай

# ХИРУРГИЧЕСКИЕ БОЛЕЗНИ

В двух томах

Том I

Рекомендовано ГОУ ВПО «Московская медицинская академия им. И.М. Сеченова»  
в качестве учебника для студентов учреждений высшего профессионального  
образования, обучающихся по специальности 060101.65 «Лечебное дело»  
по дисциплине «Хирургические болезни»

# CONTENTS

Preface . . . . .	7
<b>Chapter 1. Modern principles of treating purulent diseases.</b>	
<b>Pre-operative and post-operative care management . . . . .</b>	<b>9</b>
Modern principles of treating purulent diseases . . . . .	9
Foundations of pre-operative care . . . . .	22
Post-operative period . . . . .	34
<b>Chapter 2. Purulent diseases of soft tissues and extremities . . . . .</b>	<b>59</b>
Purulent diseases of skin and subcutaneous tissue . . . . .	59
Purulent diseases of the hand and fingers . . . . .	69
Phlegmons of the hand ( <i>phlegmonae manus</i> ) . . . . .	98
Acute hematogenous osteomyelitis ( <i>osteomyelitis haematogena acuta</i> ). . . . .	108
Chronic osteomyelitis ( <i>osteomyelitis chronica</i> ). . . . .	129
Pyogenic arthritis . . . . .	140
Inflammation of the synovial bursas and the tendon sheaths . . . . .	156
<b>Chapter 3. Purulent diseases of the breast and respiratory organs. . . . .</b>	<b>158</b>
Mastitis. . . . .	158
Pulmonary abscesses and gangrene . . . . .	174
Pleural empyema . . . . .	192
<b>Chapter 4. Sepsis (<i>sepsis</i>) . . . . .</b>	<b>215</b>
<b>Chapter 5. Diseases of the thyroid gland. . . . .</b>	<b>229</b>
Endemic, sporadic, thyrotoxic goiter . . . . .	232
Thyroiditis . . . . .	237
Surgical treatment of thyroid diseases . . . . .	239
<b>Chapter 6. Surgical diseases of the esophagus . . . . .</b>	<b>246</b>
Dysphagia . . . . .	246
Combustions and strictures of the esophagus ( <i>combustiones et stricturae oesophagi</i> ). . . . .	260
<b>Chapter 7. Surgical diseases of distal vessels . . . . .</b>	<b>271</b>
Obliterating arterial diseases . . . . .	271
Thrombosis and embolism of great arteries . . . . .	290
Varicose veins ( <i>varices venarum</i> ) . . . . .	306

Thrombophlebitis and Phlebotrombosis. . . . . 330  
Pulmonary embolism (*thromboembolia arteriae pulmonalis*) . . . . . 345  
Post-thrombotic syndrome (*morbus post-thromboticus*). . . . . .351  
**References** . . . . . .359

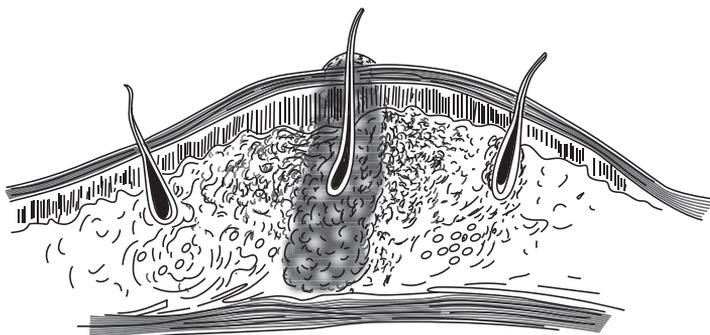
## Chapter 2

# PURULENT DISEASES OF SOFT TISSUES AND EXTREMITIES

## PURULENT DISEASES OF SKIN AND SUBCUTANEOUS TISSUE

Purulent diseases of the skin and subcutaneous tissue are the most common pathologies encountered in the practical work of a surgeon in a hospital. Those of them that have a complicated course require inpatient treatment, but the most of patients are treated as outpatients. With some complications, these diseases can threaten not only health, but also the life of the patient; therefore, they require timely and effective surgical treatment. According to statistics, the first place among these diseases in terms of frequency is occupied by furuncles and furunculosis.

A furuncle (furunculus) is acute purulent inflammation of the hair follicle and surrounding soft tissue (Fig. 2.1). Furuncles develop most often in places with a large number of sebaceous glands. As a rule, those parts of the body are affected that are in direct contact with clothes. Boils are located most often on the neck, back, back of the hand, buttocks, inner thighs, on the face in the nasolabial folds, and on the upper lip at the base of the nose.



**Fig. 2.1.** The scheme of a furuncle

Predisposing factors for development of furuncles are common systemic diseases in which the body defenses are weakened (diabetes mellitus, exhaustion, vitamin deficiency, alcoholism), as well as work in dusty rooms and non-compliance with rules of personal hygiene.

The disease begins with the penetration of pyogenic infection into the hair follicle or excretory duct of the sebaceous gland. The causative agent of the disease is *Staphylococcus aureus* or *Staphylococcus albus*. Acute purulent inflammation develops rapidly, capturing the hair follicle, the excretory duct of the sebaceous gland and the surrounding soft tissues.

The hair dies. Purulent inflammation and infiltration of the surrounding tissues lead to an increase in interstitial pressure and necrosis in the area of the purulent

focus. This area is called a purulent rod. In the purulent focus, tissues melt with accumulation of pus and formation of purulent pustules.

After 2–4 days, the necrotic tissues are rejected, and a purulent cavity is formed, which after lysis of all the inflamed areas heals with the formation of a scar. The duration of the process is about a week from the onset of the disease.

**Clinical presentation.** First, itching is observed at the site of the lesion. After some time, a dense infiltrate with hyperemized skin areas around and a hair in the center of it appears in this region. The infiltrate gradually increases and causes sharp pain upon palpation. In the center a purulent pustule (a bubble filled with pus) appears. The size of the furuncle usually reaches 2–3 cm, but it can be up to 5 cm. The general condition of the patient in most cases does not deteriorate, but the body temperature can reach 38–39 °C. With furuncles on the face and scrotum, infiltration and swelling are usually much greater. After rejection or removal of the purulent rod, a small amount of pus is released and the inflammatory infiltrate decreases. The purulent cavity after cleansing fills with granulations and heals with a scar.

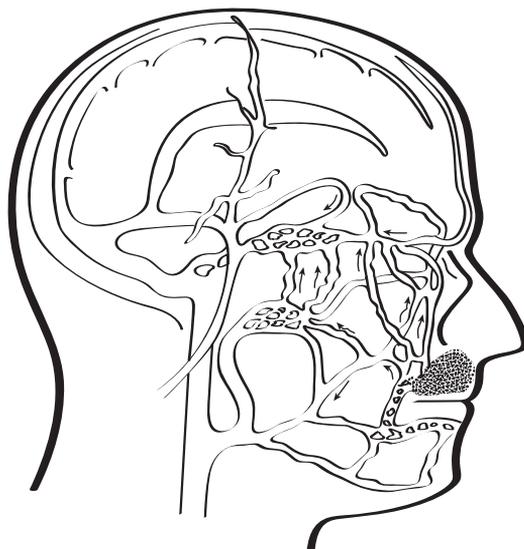
The furuncle is usually benign and does not cause any specific health problems. However, with very virulent flora causing the disease, or with some localizations of the pathological process, the patient may be at risk of having serious complications. They often develop when the patient tries to squeeze out the contents of the abscess or cut off skin in the area of purulent pustules. This can lead to spread of the purulent process to the surrounding tissues, penetration of infection into adjacent joints and even development of a systemic purulent infection — sepsis.

Serious danger is presented by furuncles located on the face: on the upper lip and in the area of the nasolabial folds. Due to the presence of a large amount of subcutaneous adipose tissue, lymphatic and blood vessels, furuncles on the face are always accompanied by pronounced edema. Due to the fact that the facial veins widely anastomose with the veins in the cranial cavity especially in the areas of the upper lip, base of the nose and forehead, the purulent process in these areas can spread through the veins into the cranial cavity and result in the purulent lesion of the sagittal venous sinus or purulent meningitis (Fig. 2.2).

In the meantime, the patient develops a serious condition with emergence of exophthalmos on the affected side along with meningeal and neurological symptoms indicating intracranial localization of the purulent process.

**Treatment.** In usual uncomplicated cases, in the first 2–3 days therapy consists in treating the affected areas with brilliant green solution 1% and alcoholic iodine solution 5%. Several times daily the skin is treated with alcoholic solution 70% or brilliant green solution 1% to prevent infection in the adjacent hair follicles. It is advisable to prescribe physiotherapy (UHF therapy, Solux). Some authors recommend electrophoresis with potassium iodide solutions or antibiotics.

With furuncles on the face, patients are immediately hospitalized. They are prescribed antibacterial therapy with broad-spectrum antibiotics. Similar measures are taken when lymphadenitis or lymphangitis develops. A positive effect in most cases is ensured by short-term Novocaine block with Novocaine solution 0.5–1% with antibiotics that affect Staphylococcus. In this case, Novocaine infiltrate should be created under the inflammation site and around it. As soon as the purulent rod of the furuncle is formed, it is recommended to remove it or make a small incision and



**Fig. 2.2.** Anastomoses of the facial veins and sinuses

remove the necrotic masses. In case of rejection of the purulent rod, the resulting cavity is sprinkled with sodium salicylate to quickly clean the wound. With a pronounced systemic reaction of the body, and with developed lymphadenitis and lymphangitis as complications, it is necessary to make a linear or cross-shaped incision through the entire thickness of the formed infiltrate in addition to antibiotic therapy. Similar measures are taken with furuncles on the face. The operation is performed under local infiltration anesthesia.

In some patients, several furuncles develop simultaneously or sequentially on different parts of the body. This process is called furunculosis and occurs most often in debilitated patients with various chronic diseases and occurs especially often in patients with diabetes mellitus. It also develops when insufficient attention is paid to treating the skin that surrounds the furuncle with disinfectant solutions. If the patient has furunculosis, it is advisable to treat him or her in the hospital. It is mandatory to check blood for sugar to exclude diabetes mellitus and conduct restorative therapy. In case of outpatient treatment, the patient is prescribed brewer's yeast and drugs that enhance the immune defenses of the body. Anti-staphylococcal vaccine, toxoid and vitamin therapy are also used. The antibiotic should be prescribed in accordance with predetermined sensitivity of the microbial flora to a particular drug.

**Carbuncle (carbunculus)** is acute purulent necrotic inflammation of a group of hair follicles and adjacent sebaceous glands with formation of a systemic inflammatory infiltrate and necrotic skin changes. The inflammatory infiltrate spreads not only to the skin, but also to the subcutaneous tissue and underlying tissues. More often, it does not penetrate deeper than to the fascia. Predisposing factors for development of the carbuncle are similar to those of the furuncle. Most often, the causative agent is *Staphylococcus aureus*; carbuncles occur in diabetic patients, debilitated patients and after improper treatment of furuncles. The pathological process develops rapidly and

is accompanied by a pronounced systemic reaction of the body. The inflammatory infiltrate captures several hair follicles at once, with subsequent focal necrosis of the skin and subcutaneous tissue in the area of inflammation (Fig. 2.3). With virulent infection and weakened body defenses, the purulent process can spread deeper, affecting the fascia and underlying muscles. The carbuncle is usually localized on the back of the neck, on the back. Most commonly there is only one, but rarely several carbuncles develop.

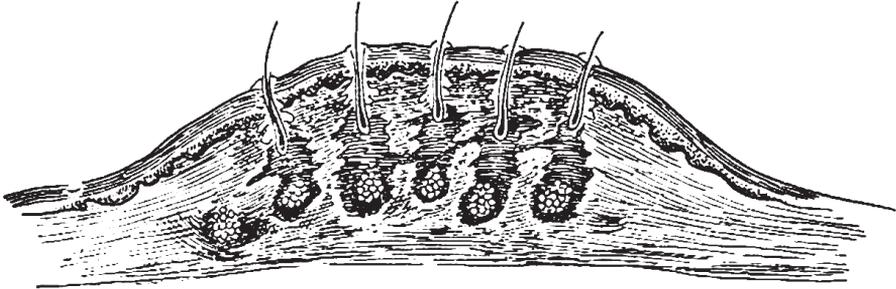


Fig. 2.3. The scheme of the carbuncle

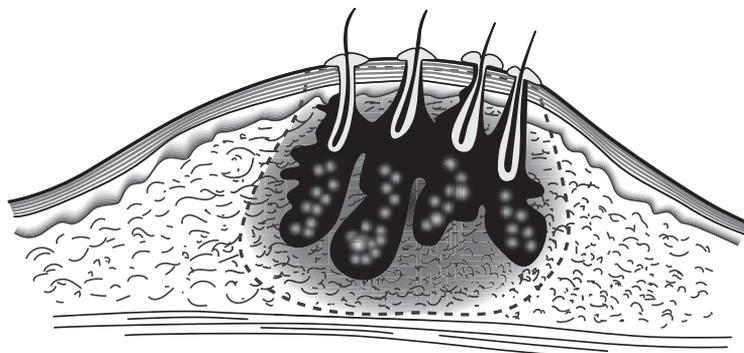
**Clinical presentation.** Usually a pronounced systemic reaction of the body is observed: severe general condition, high temperature (38–39 °C), headaches, chills. With severe intoxication, the patient may have vomiting. At the site of the carbuncle, painful swelling appears that captures several hair follicles. Necrosis develops rapidly enough in the area of each follicle and the infiltrate covers with several purulent rods. Necrotic areas soon merge into one large area, usually black in color, which is then rejected with the discharge of pus. Inflammatory infiltration of tissues in the affected area after rejection of necrotic areas decreases, and pain reduces. The formed abscess heals by secondary intention with the formation of a rough scar.

A carbuncle should be differentiated from an anthrax infection. With the latter, a red, dense and painful nodule appears on the skin, in the center of which a blue-purple bubble with red-gray contents forms. After the burst of the pustule, the wound covers up with a dark red scab which quickly turns black and becomes hard. A corolla of pustules with similar contents forms around it. The soreness of such carbuncles is minimal. The final diagnosis is made after bacteriological examination.

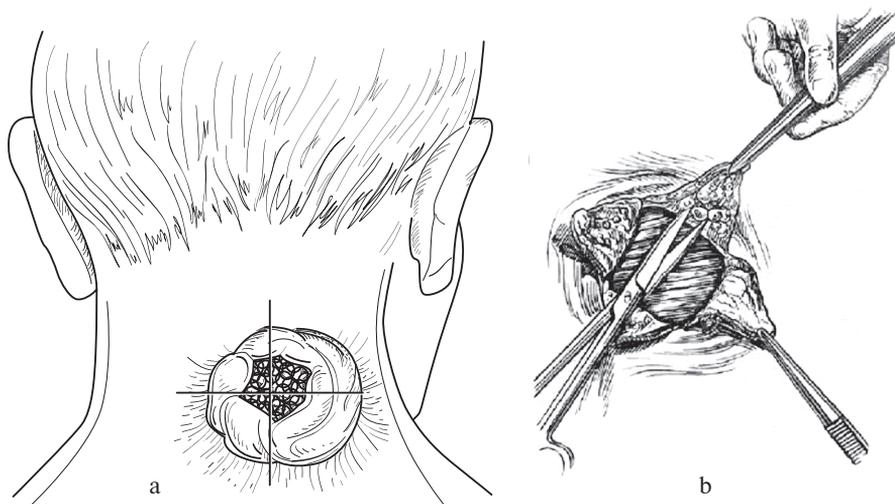
**Treatment.** Patients with carbuncles should be hospitalized. First of all, this applies to patients with carbuncles on the face. From the start of treatment, it is necessary to conduct active antibacterial therapy with broad-spectrum antibiotics (preferably, with the fourth-generation ones) and combine this therapy with sulfonamides or nitrofurantoin (Furadonin, Solafur, etc.). Staphylococcal anatoxin and antistaphylococcal gamma globulin are prescribed. At the beginning of treatment, it is possible to use UHF-therapy and electrophoresis with antibiotics. With the growth of edema and ineffective conservative short-term treatment, surgery should be opted for.

**Surgical treatment** of the carbuncle can be carried out by two methods. When carbuncles are localized on the back and in the lumbar region, V.F. Voyno-Yasenetsky and V.I. Struchkov recommended excision of all necrotic tissues up to the fascia

(Fig. 2.4). For other localizations, V.K. Gostishchev et.al. recommended to make a cruciate incision followed by excision of necrotic tissues from the subcutaneous tissue (Fig. 2.5).



**Fig. 2.4.** The borderline of necrotic tissue excision in the carbuncle



**Fig. 2.5.** Dissection of the carbuncle (a) and excision of necrotic tissues (b)

Surgical intervention is usually performed under general anesthesia, but it can also be carried out under local anesthesia if there are counter indications for general anesthesia. After the operation, the resulting cavity is washed with hydrogen peroxide solution 3% or antiseptics and drained with napkins moistened with sodium chloride solution 10%. For speedy cleansing of the wound, it is advisable to use daily dressings with proteolytic enzymes (Terrilytin, Profesimum, Tripcylim, etc.). After cleansing of the wound, dressings with ointments and Synthomycin emulsion are made.

Treatment of the carbuncle on the face is similar, but excision is not performed. The earliest possible use of antibiotic therapy (fourth-generation antibiotics, sulfonamides) is required.

The most dangerous complication is thrombophlebitis of the facial veins with the subsequent development of purulent intracranial complications, which results in very high mortality rate, which previously reached 80% or more.

**Abscess** (abscessus) is a purulent cavity formed during necrosis and melting of tissues in the focus of inflammation, which is delimited by the pyogenic membrane and filled with purulent contents. There are other definitions of abscess, for example: abscess is a limited purulent inflammation that can occur in any tissues and organs (V.I. Burovtsov).

The reason for the formation of abscesses is often penetration of pyogenic germs, such as staphylococcus and streptococcus, into the subcutaneous tissue. Causative agents of abscesses can also be typhoid fever, pneumococci, and even saprophytes, which lead to the development of purulent inflammation in infectious diseases or significant weakening of body defenses. Abscesses can also occur in soft tissues following the administration of irritating substances into them such as turpentine, kerosene and olive oil. Often there are post-injection abscesses — abscesses that develop after injections of certain drugs that cause tissue necrosis such as high concentrations of magnesium sulfate. They can also be the result of violated rules of the aseptic technique during injections at home or in self-treatment. In recent years, the number of post-injection abscesses in drug addicts who inject drugs more often without observing the rules of the aseptic technique in unsanitary conditions has increased.

By the nature of pus in the abscess, it is often possible to make a conclusion about the nature of the microbial flora that caused the formation of an abscess. Staphylococcal pus is mucous-yellow, streptococcal is liquid yellow, *Pseudomonas aeruginosa* gives blue-green pus, *E. coli* gives brown, fetid pus, typhoid bacillus produces bloody pus, and tuberculous has white and crumbly pus (M.M. Solovyov).

Most often infection contaminates the body via microtraumas. In case of post-injection abscesses, the cause of infection is violation of the standards of the aseptic technique. Abscesses can occur when infection penetrates through the lymphatic and circulatory pathways (the source of infection is purulent emboli from adjacent or distant organs), as well as during the transfer of infection from neighboring organs. During surgical interventions, the infection can be brought in by the surgeon's hands, instruments, or it can spread from the inflamed organs that are the object of surgery (an inflamed appendix, gall bladder or intestinal contents).

Venous thrombosis often develops in foci of inflammation which then undergoes purulent melting and provokes the development of this pathology. Predisposing factors for the formation of abscesses are hypothermia, bleeding, trauma, regional circulatory disorders and impaired innervation in the area where the abscess developed.

In terms of *pathological anatomy*, development of the abscess goes through two stages. At the initial stage, leukocytes accumulate at the site of infection, significant tissue swelling occurs with an increase in interstitial pressure and circulatory disorders in the affected area. Then melting of inflamed tissues occurs under the influence of lytic enzymes of dead leukocytes. Then a purulent cavity forms, surrounded by a zone that demarcates inflammation from the granulation tissue. With a long-term process, this zone turns into a dense pyogenic capsule with predominant development of dense connective tissue. Due to further development of purulent inflammation, the abscess can spread to the surrounding tissues with formation of purulent leakages.

With reduced body resistance and low-virulence infection, the disease can acquire a chronic course. In case of penetration of the infection into the vascular bed and significant virulence of the microbial flora, a systemic purulent infection develops as sepsis or septicopyemia.

**Clinical presentation** of the abscess is quite distinct. It can occur both as acute inflammation and a chronic process. The abscess is usually characterized by acute onset; at the site of the pathological process, signs of inflammation appear: limited swelling, redness of the skin above the localization of the abscess, pain at rest which aggravates upon palpation; the temperature rises (local temperature in the abscess area and the overall body temperature). There are signs of a systemic infection, such as malaise and chills. The inflammatory infiltrate increases. Functions are impaired depending on the extent of damage to a particular area. Further, melting of the infiltrate occurs which is characterized by the appearance of fluctuation (swelling). The skin above the abscess becomes thinner, the abscess may burst with the discharge of pus and formation of a purulent fistula. If the abscess is completely emptied, the remaining cavity is filled with granulations and heals with a scar. A similar process occurs after the surgical emptying of the abscess. With post-injection abscesses, after 1–2 days painful induration appears at the injection site. The body temperature rises. Due to the deep localization of the abscess, fluctuation may be absent as well as skin hyperemia at the injection site.

The abscess of any localization is always accompanied by hyperleukocytosis with a leukocyte left shift. With a long process, an increase in ESR occurs. In case of so-called cold abscesses against the background of bone tuberculosis, inflammatory infiltration and hyperemia of the skin in the place of abscess localization are absent; the skin around the abscess is painless.

**Treatment** of superficial abscesses can be carried out in outpatient conditions. With a deeper localization of the abscess and in case of post-injection abscesses, patients should be hospitalized. In the first 3–5 days until the purulent melting of tissues has occurred, broad-spectrum antibiotics, Novocaine block with antibiotics around the infiltrate and under it and physiotherapy (UHF-therapy, Solux and warming compresses) are prescribed. With the ineffectiveness of therapy or the appearance of signs of infiltrate melting (deterioration of the general condition, fluctuation, increase in leukocytosis), surgical intervention should be performed.

Opening of superficial abscesses can be carried out under local infiltration or conduction anesthesia. With a significant size of the abscess or its deep localization, patients are operated on under general anesthesia. Surgical intervention is carried out by opening the abscess often with a single incision, which is done along the natural folds of the skin. It is advisable to puncture the abscess before opening to make sure that the diagnosis is correct and to have a clear idea of the depth and direction of the upcoming incision, which is recommended to be done along the needle path. Pus obtained from the puncture is sent for bacteriological examination and tested for sensitivity of the microbial flora to antibiotics. After the abscess is opened and emptied, its walls are examined with a finger.

If the cavity is large, additional cuts (counterpunctures) should be made for better pus outflow in the post-operative period. After the cavity has been treated with antiseptic fluids (hydrogen peroxide solution 3%, Furacilin solution 1:5000, etc.), it

is drained with napkins moistened with sodium chloride solution 10% or proteolytic enzymes. In case the latter are used, rejection of necrotic tissues occurs several times faster. After cleansing the wound, dressings with Synthomycin emulsion or ointments that facilitate rapid scarring are applied.

In case of post-injection abscesses, a longitudinal incision is usually performed under general anesthesia, the abscess is emptied, and after the cavity has been treated, it is tamponed with napkins moistened with sodium chloride. If the abscess is small, it can be completely excised along with the pyogenic capsule.

In case of a chronic course of the disease, it is also advisable to perform complete excision of the abscess together with the pyogenic capsule since the causative agents of the abscess are firmly localized in the walls of the latter.

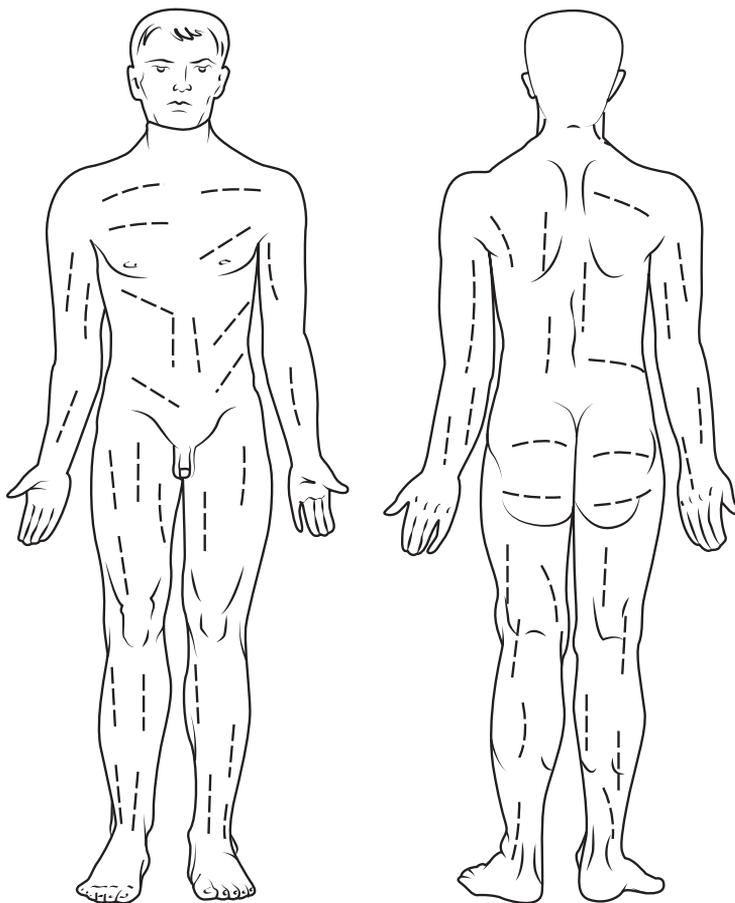
**Phlegmon (phlegmone)** is acute purulent inflammation of the connective tissue. A phlegmon can be subcutaneous, subfascial, intermuscular, interorgan and pelvic. In all cases, the purulent process is localized in the fatty tissue of any anatomical region. The phlegmon develops following penetration of virulent infection into the connective tissue with reduced resistance of the body. The process proceeds so quickly that the granulation space does not have time to form, and inflammation quickly spreads to neighboring areas capturing new regions of cellular tissue.

*In terms of pathological anatomy*, the phlegmon starts with serous infiltration of large areas of the connective tissue. Soon the exudate becomes purulent, and necrosis of the tissues in the affected area occurs. In the meantime, purulent infiltration of the connective tissue spreads quickly enough and can capture adjacent organs. It is characteristic that purulent necrotic infiltration without pronounced boundaries passes on to the adjacent sites of serous infiltration. Involvement of blood and lymphatic vessels in the process can quickly lead to the development of systemic purulent infection.

**Clinical presentation** usually depends on the localization of the phlegmon. With subdermal phlegmons, an infiltrate without clear boundaries appears, painfully and rapidly spreading to surrounding areas. Due to significant tissue infiltration, fluctuation may not be detected. There is always a pronounced systemic reaction to the purulent process: the patient's severe condition, high temperature or hectic fever, chills, headaches, vomiting. With deep phlegmons, there is no skin hyperemia in the affected area. Infiltration is detected deep in the tissues, it is painful upon palpation, and there is a pronounced systemic reaction of the body to the purulent process (severe condition: fever, inflammatory changes in the peripheral blood).

**Treatment** of the phlegmon is carried out as a rule in the hospital. On the first day, active antibacterial therapy with antibiotics and antiseptics, a short-term procaine block of the infiltrate, and UHF therapy are used. With no effect of conservative treatment and progression of the process surgical intervention should be selected. In most cases, the operation is performed under general anesthesia. A large incision is made above the inflammatory infiltrate along its full length and through its depth. The dissection is performed in accordance with the lines of the skin folds similar to opening an abscess (Fig. 2.6). With deep phlegmons, it is necessary to cut the fascia to reduce the interstitial pressure in the area of purulent inflammation.

Incisions of deep phlegmons of the upper and lower extremities are carried out depending on the topography of these areas. After opening, purulent necrotic masses



**Fig. 2.6.** Incisions for opening superficial phlegmons

are removed, the cavity is treated with hydrogen peroxide solution 3% and drained with napkins moistened with sodium chloride solution 10% or proteolytic enzymes. Further therapy is carried out according to the principles of purulent wound treatment. After the necrotic masses are removed and the wound is cleaned, dressings are applied (with ointment or Synthomycin emulsion) until complete recovery.

After opening of the phlegmon, the general condition of the patient, as a rule, improves rapidly. If this does not occur, it is necessary to analyze the operation again and check its correctness and adequacy by ultrasound. If necessary, it is advisable to open and drain existing edemas and pus pockets.

**Hydradenitis** is purulent inflammation of the sebaceous (apocrine) glands. Apocrine glands develop from the same embryonic buds as sebaceous glands and hair. They are always connected with the root sheaths and sebaceous glands. They have the form of tubes with alveolar extensions, twisted into a loose tangle. The latter is surrounded by a connective tissue capsule and has a nerve plexus. The most active function of these glands coincides with the period of puberty and sexual activity and

fades with the onset of old age and menopause in women. Some authors call them glands of sexual smell. The greatest accumulation of apocrine glands is observed in the axillary areas, the genital area, the anus, and the nipple. Hydradenitis can occur in all localizations of these glands, but in the absolute majority of cases it forms in the axillary areas where the number of these glands is the largest. Predisposing factors are excessive sweating, uncleanliness, the presence of microtraumas on the skin, scratches and eczema in the axillary areas. Poor nutrition and reduced immune defenses are also crucial.

The cause of hydradenitis is penetration of infection, more often caused by *Staphylococcus aureus*, into the glands. According to most authors, infection penetrates through the excretory ducts of the sweat glands. The inflammatory process begins at the border of the skin and subcutaneous tissue. An inflammatory infiltrate forms, containing a large number of microorganisms. As the process develops, the infiltrate undergoes purulent melting. An abscess forms, which most often captures a few sweat glands. After emptying of the abscess, it heals with a scar.

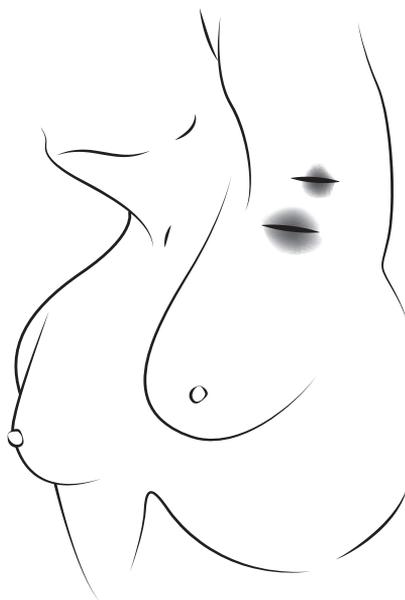
**Clinical presentation.** In the axillary region, one or several dense painful infiltrates appear. They are located close to the surface of the skin and are wandering at the beginning of the disease. The infiltrates gradually grow, reaching the diameter of 3–5 cm. The pain in the affected area increases. Arm movements are limited due to pain. After the burst of the abscess, the wound gradually heals. It should be borne in mind that due to involvement of adjacent glands in the pathological process, the purulent process often tends to progress. Relapses of the disease are possible.

In **differential diagnosis**, one should distinguish between hidradenitis with tuberculosis lesions and the one with metastasis of breast cancer. The diagnosis can be verified by the presence of a systemic inflammatory reaction of the body, melting of infiltrates with the formation of an abscess, as well as detection of a tumor in the mammary gland or tuberculosis lesions of other organs.

**Treatment.** Hairs in the armpit are carefully trimmed, all skin in the area of hydradenitis is treated with methylene blue or brilliant green to prevent the spread of infection. The armpit should not be treated with iodine, so as not to cause a burn and an allergic reaction. At the infiltration stage, antimicrobial therapy with antibiotics and sulfonamides, UH-therapy and Solux is used. Novocaine block with antibiotics has a positive effect at this stage of the process.

In case of infiltrate melting, surgical intervention is carried out. With single infiltrates, an incision above the abscess is made under local anesthesia with Novocaine solution. After it is emptied, the cavity is treated with hydrogen peroxide solution 3% as an ordinary purulent wound (Fig. 2.7). Given the frequency of multiple lesions and the tendency to relapse of the disease, V.F. Voyno-Yasenetsky proposed to excise inflammatory infiltrate and abscesses in hydradenitis completely. Many contemporary authors hold the same opinion. When performing an operation which, as a rule, is done under general anesthesia, it should be borne in mind that during the excision of the inflammatory infiltrate it is not necessary to penetrate beyond the fascia since the axillary vessels (artery and vein) are located under it that can be damaged following negligent actions.

**Prevention** of hidradenitis consists in compliance with the rules of personal hygiene. After shaving hair in the armpit, the skin should be treated with disinfectants.



**Fig. 2.7.** Incisions in hydrodenitis

## **PURULENT DISEASES OF THE HAND AND FINGERS**

The importance of studying felons and phlegmons of the hand is explained by the frequency of these diseases which has no tendency to decrease due to their insufficient prevention and increase in the number of antibiotic-resistant microbial strains. The last factor is provoked by frequent prescription of antibiotics without valid indications. In the pharmacy, you can buy almost any antibiotic without a doctor's prescription.

Felons and phlegmons of the hand are not easy to either diagnose or treat. It takes a long time to restore the function of fingers and hand; the percentage of disability is higher compared with purulent diseases of soft tissues in other parts of the body. Due to insufficient knowledge about the course and treatment of felons and phlegmons of the hand, doctors in hospitals make mistakes in their diagnosis and treatment. Improper operation on surface felons results in development of severe forms of the disease, and phlegmons of the hand require treatment in the hospital. In these cases, it is a question of preserving not only the fingers and the hand but also the life of the patient.

Purulent diseases of the fingers and hands belong to minor surgical diseases. In terms of the frequency of the disease, the amount of lost time and material costs due to disability, and often adverse outcomes due to the functional inferiority of the fingers and hand, this pathology is one of the significant problems of our time.

Anatomical and physiological features of the hand formed in the process of labor. The hand is involved in all types of human activity including everyday routine. N.I. Pirogov pointed out: "Nature marked a man's hand with a peculiar ability: to control the objects taken ... to move them in different directions".