Term	Topic content
Epidemiology	In economically developed countries the patients with pyoderma compose 1/3 of patients, suffering from infectious diseases. The morbidity rate in children is higher than in adults, it composes 25-60% of the total number of cases of dermatoses. Pyoderma is the most common among the worker of such industries as metalworking, metal mining, coal mining, timber manufacturing, transportation, and various branches of agriculture as well.
Etiology	Most frequently the agents of pyoderma are staphylococcus and streptococcus. Different types of pustular skin diseases can occur initially as separate nosologic entities or as a complication of other dermatoses (scabies, eczema, atopic dermatitis etc.). Staphylococci under the microscope have got rather correct round shape (their accumulations are often similar to a bunch of grapes) with a diameter of about 0.8-0.9 microns. The most virulent is Staphylococcus aureus. Staphylococci are also presented in form of spherical formations, joining in long chains. The diameter of one coccus varies from 0.5 to 1 micron. Pycocci occur on the skin in the form of avirulent microorganisms in 90-92% of healthy people, and it is possible to detect their pathogenic forms only in 8-10% of population. Saprophytes can acquire pathogenicity under certain conditions and their virulence can increase under the action of alkaline reaction of the skin or in case of joining of other agents, such as fungi. In case of Gram-stained pus smear, both staphylococci and streptococci are well stained in blue that means they are Gram-positive. The toxins, released by pyococcy, are highly toxic and are capable to lyse erythrocytes, leukocytes.
Pathonesis	Virulence of pyococci plays an important role in the occurrence of pyoderma. A number of factors, such as the acid reaction of the horny layer of epidermis, sebaceos glands, enzymatic activity of the skin etc., counteract the increased virulence of staphylococci and streptococci. A number of exogenous and endogenous factors contribute to the development of pustular lesions of skin. The most frequent exogenous factors include the excessive skin contamination with gasoline, oil, dust particles (coal, cement and other), micro injuries (insect bites, excoriations, needlesticks and other), maceration of homy layer (long dish-washing, doing laundry), hypothermia and

	hyperthermia. The endogenous factors, contributing to the development of pyoderma, are low- calorie food, hypovitaminosis, chronic debilitating diseases, intoxications (alcoholism,narcomania), physical and nervous strains, diabetes, immunodeficiency etc. There is no innate immunity against the pyococcus infections, but unstable infectious immunity can appear in the course of pyoderma, the intensity of which varies in wide range. The frequent for pustular diseases are the allergic reactions appearing in the result of sensitization to metabolic products of their agents, whereof the positive intracutaneous tests with the corresponding allergens (vaccines) indirectly testify. The character of pyoderma development in clinical respect depends on the place of influence of agent. Staphylococci more often affect hair follicles, whereas streptococci mainly parasitize on the smooth skin. Favorite localization of panaritium, for example, is periungual walls, of ectymas is shins, furuncles and carbuncles are more common on the buttocks, lower back etc. Besides pyococci, the pustular skin lesions can be caused also by collibacillus, proteus vulgaris, fungi, pseudomonas aeruginosa, pneumococci etc. Depending on the agent, pyodermae are divided into staphylococcus,streptococcus and mixed; depending on the deepness of lesion they can be superficial and deep, on the character of the course they are acute and chronic, on the origin they are primary and secondary.
Staphylococcal skin infections	***Staphylodermae*** are characterized by the development of inflammatory process, mainly in the area of appendages location, such as cutaneous and hair follicles, sebaceous and sweat glands. As a rule, a hair or opening of sebaceous gland is in the center of pustules. Much less frequently, staphylococci cause the lesions of the surface layers the smooth skin that is mainly observed in children. Newborns and infants have got the connection of epidermis with derma insufficiently developed due to the weakness of the basal membrane and dermal papillae smoothness that is why during the staphylococci penetration, the morphological elements such as bubbles andphlyctenas develop. The following forms of staphylodermae are distinguished; these are surface -ostiofolliculitis and deep - folliculitis, furuncle, carbuncle, hydradenitis, sycosis,vesicle-pustulosis in children, neonatal impetigo, multiple abscesses of children (pseudofurunculosis), exfoliative dermatitis, and neonatal bullous impetigo.

Ostiofolliculitis is characterized by the appearance of small pustule with the size of grain of millet or pinhead, of greenish-yellow or milky-white colour, of spherical shape, surrounded by acute inflammatory hyperemic circle. A pustule is localized in hair follicle and pierced with unaltered hair in the center. The accumulation of pustules is observed in a small area of skin; they do not increase due to peripheral enlargement and do not merge. The process is most often localized on the skin of face, neck, forearms, lower legs, hips. The patients feel little itching. The pustules shrivel forming greyish-yellow crusts in 4-8 days. After crusts falling, insignificant pigmentation remains on the skin, which soon disappears. Ostiofolliculitis appear under the influence of minor skin irritations such as shaving, friction, maceration due to excessive sweating.

In some cases, certain ostiofolliculitis can grow at periphery or deathward, becoming deep folliculitis, furuncles and carbuncles. Growing at periphery ostiofolliculitis eventually reaches the size of a pea, especially in children and
scabies patients with wrists lesion. These ostiofolliculitis are called *BockharVsimpetigo*.

The diagnosis of ostiofolliculitis is set in presence of small tight conical pustules, in their center pierced with a hair and surrounded by hyperemic circle. Hystologically, a small cavity, bounded above by the horny layer, and bounded below by the callous cells of epidermis, is located in the ostium of the hair follicle. The cavity is filled by the conglomerate mass of polymorphonuclear leukocytes, some lymphocytes, and staphylococci as well. An edema appears around the hair follicle in the derma and capillaries broaden, around which perivascular infiltrate from lymphoid and polymorphonuclear cells is observed.

For the treatment of ostiofolliculitis, the pustule is pierced with a sterile needle, the tectum and pus is removed, the affected areas are anointed by the 1-2% alcohol solutions of aniline dyes (methylene blue, brilliant green, Castellani liquid). After that the skin is wiped with 2% salicylic or boric spirits and sprinkled with 5-10% of boric powder. With large crusts the affected surface is salved with antibiotic ointments
(Fusiderm, Bactroban, Altargo, neomycin, tetracycline, and erythromycin). The topical application of Zineryt lotion (erythromycin zinc complex), OXI, Ugrinum lotions, and Diacneal cream is also effective.

Profound folliculitis *(folliculitis profunda)* is a purulent

	inflammation of the entire hair follicle and the adjacent adipose tissue, arising in the result of pathogenic staphylococci penetration in the depth of follicle. Initially a painful red papule (nud) of size from a pea to a cherry appears on the skin around the ostium of hair follicle. A hair is located in the center of a papule. In a few days, the papules tauten, becoming a follicular pustule of conic form with base induration. A pustule dries out after some time forming the crust, in some cases connective tissue necrosis and intense suppuration can occur. A pustule in the center ulcerates gathering to matter of greenish-yellow or white colour. Profound folliculitis remains pigmented scar. The reasons for the appearance of profound folliculitis are the same as for ostiofolliculitis. Hystologically, in profound folliculitis there is infiltrate consisting of neutrophils and lymphocytes around the hair follicle. A hair follicle melts itself, and a cavity filled with matter, forms in its place. The treatment of folliculitis is the same as of ostiofolliculitis. ***Furuncle*** *(furunculus)* is acute purulonecrotic inflammation of hair follicle and its surrounding connective tissue, caused by pathogenic staphylococci. A furuncle develops in the presence of low immunological reactivity of organism. The contributing factors in furuncle appearing are the cutaneous injuries, scratching of allegrodermatosis, catarrhal and infectious diseases, vitamin deficiencies, hypothermia and other. A typical localization of furuncle is the areas of friction between skin and clothes, such as neck, lower back and buttocks. The symptoms of furuncle develop gradually. In the majority cases, the process develops in the setting of ostiofolliculitis, which spreading depthward, leads to the formation of the node of acute inflammatory character. During the period of 5 to 7 days the furuncle becomes soft in the center, the fluctuation appears. The infiltrate ulcerates discharging matter prolifically. In the center of the burst there appears necrotic tissue of green color (necrotic core). After its separation there is a deep crater-like ulcer. The ulcer bottom is covered with granulations, gradually discharging from the matter, thus the ulcer cicatrizes. The development of the furuncle is accompanied by the pains and burning sensation, and sometimes high temperature. In the case of relapses of furuncle several times in different places they say about the chronic furunculosis. The development of furunculosis is promoted by the dysfunction of internal organs and nerve system, depletion of immunological reactivity, anemia, diabetes, infectious diseases, hypo and avitaminosis, the presence of chronic foci of infection, the use of

	corticosteroids and other. In children the furunculosis develops with gastro-intestinal disorders, hypotrophy, and rickets. The typical clinical picture is a massive infiltration, conical shape, redness, pain, the presence of a hair and necrotic core in the center enables quite easy to set a diagnosis of furuncle. Hystologically, a massive infiltration, consisting of polymorphonuclear leukocytes, lymphocytes, fibroblasts and a small number of plasma cells, forms in derma and subcutaneous fat. Collagen and elastic fibers break down completely with hair follicle. In the focus of lesion, a massive argentophil grid appears which forms the membrane, impeding penetration of infection from the focus into the patient organism. In the treatment the skin around the furuncle is disinfected with alcohol or ether, after that a hair is pulled out gently from the center of infiltrate with a sterile forceps, pure ichthyol is put on the furuncle, covering it with a thin layer of cotton wool. The procedure is repeated twice a day, until in the center of the follicle the opening forms, on which the gauze folded in several times and moistened with hypertonic solution of sodium chloride is put. After discharge of the core, the ointment with antimicrobial effect and stimulating tissue regeneration is applied, such as (Fusiderm, Bactroban, Altargo), and skin around the furuncle is wiped with 2% boric and salicylic spirits. In the case of multiple furuncles, furuncles in the area of face, hairy part of the head, as well as chronic relapsing furunculosis, antibiotic therapy should be applied in order to prevent the occurrence of septicophlebitis of cerebral vessels and general sepsis. Currently, it is recommended to use the broad spectrum antibiotics from the group of cephalosporins, tetracyclines, macrolides etc. in adequate doses during 7 to 10 days with an obligatory determination of pyococcus sensitivity to antibiotics. In severe cases the antibiotics are administrated parenterally. Concurrently antihistamines, such as suprastin, cetrine, claritine, aerius etc. are prescribed. ***Carbuncle*** *(carbunculus)* represents a severe inflammatory process, covering several hair follicles, sebaceous glands and subcutaneous fat. As a rule, a carbuncle develops in the result of dissemination of purulent process with numerous profound folliculitis or in conjugating of close furuncles that leads to extensive skin necrosis. Carbuncle is caused by the pathogenic stains of staphylococci. Endogenous factors first of all play an important role in the development of carbuncles. The general condition of the carbuncle

	patient is usually compromised, there is high temperature, headache etc. Carbuncles are most often localized on the skin of hindhead, back, lumbus, i.e. in the places of friction and irritation of the skin and its frequent pollution. At the beginning of the process there are several openings on the skin surface above infiltrate, and infiltrate is surrounded by edema. After the cores separation and intense discharging of matter, mixed with blood, necrotic mass of green colour can be seen on the infiltration site. After purification of the openings from the necrotic masses,there appear deep ulcers, sometimes reaching up to fasciae or muscles. In the result of filling the ulcers with granulations, their cicatrization occurs, and the process ends with formation of retracted stellar scars. In advanced age, as well as with exhaustion, neuropsychic defatigation and diabetes, the course of the disease acquires malignancy, neuralgic pains and deliration appear and sepsis and erysipelatous inflammation can occur. Hystologically, in carbuncle there is deep necrosis of all layers of derma and subcutaneous fat. Around the necrotic area there is a massive infiltrate, consisting of neutrophils and a small number of lymphocytes. Carbuncle treatment requires an obligatory use of antibiotics and other systemic drugs, so as in treatment of severe forms of furuncle and chronic furunculosis. A topical treatment is the same as in furuncle. ***Hydratenitis*** is a purulent inflammation of apocrine sweat glands, located in axillary cavities, on labia majora, mammillae, anal area. It is caused predominantly by staphylococcus aureus. The contributing factor of development of hydratenitis is excessive sweating in axillary folds and perineum, consumption as a result of hypotrophy, infectious, nervous and endocrine diseases. From the external factors, the significant are excessive contamination of skin, microtraumas and cuts resulting from shaving hair in the axillary cavities. Hydratenitis in children is observed only in senior age, when apocrine sweat glands attain full growth and begin to function (period of puberty).Hydratenitis develops gradually. At the beginning the feeling of discomfort and insignificant soreness appear at the sites of localization of apocrine glands. The skin is not changed, and in palpation it is possible to detect small indurated formations. Later the skin at the affected sites becomes red, painful pea-sized nodes begin to extrude, which rapidly increasing reach the size of pigeon egg. Sometimes separate nodes can merge. In one to two days the nodes acquire soft consistency and are perforated with formation of openings, from which a large amount of matter

	is discharged. Gradually, the abscess cavity is filled with granulations, and the process ends with formation of retracted scar.Maturation of hydratenitis is accompanied by high temperature, severe pains and general weakness. Disease can become chronic, when new nodes are developing one by one. The relapses are especially frequent in people with heavily pronounced sweating, insufficiently observing hygiene. The relapses occur mainly in summer in hot period.Hystologically, the pathological process in hydratenitis develops in the deep layers of the skin around the body and excretory ducts of apocrine gland, where there is an infiltrate from neutrophilic leukocytes and purulent fusion of sweat gland. The profound destructive changes of vessels occur in the center of necrosis. The disease is so typical by localization and clinical picture, that the diagnosis is set without much difficulty. The treatment does not differ numerous furuncle, furunculosis and carbuncle; it includes timely application of antibiotics, immunomodulatory, local and symptomatic agents. ***Sycosis*** *(sycosis vulgaris, sycosis simplex, sycosis staphylogenes)* is a chronic staphylococcal skin lesion of face in the area of beard and mustache. Sycosis is observed almost exclusively in men. It can rather rare affect also internal surface of nose, eyebrows and pubic area. It is characterized by chronic course, relapsing eruptions of ostiofollicular pustules on the indicated areas of the skin. Contributing factors in the development of sycosis are integrity violation of epidermis, chronic rhinitis, nervous and endocrine diseases, in the first place, hypofunction of testes. The development of sycosis begins with the appearance on the skin in the area of beard and mustache of small pustules the size of a millet grain, placed in the follicle ostium. In a few days, the purulent process affects the entire hair follicle (profound folliculitis). Gradually the skin of the affected site infiltrates, gets bluish discoloration, is covered with mixed crusts, swells. The site of the lesion focus enlarges peripherally due to the formation of new folliculitis. When pressing on the infiltrate, droplets of yellow green pus are discharged from the extended hair follicles. After dropout of crusts, at the sites of lesions small erosions and ulcers appear, from which seropurulent liquid is released. The general state of health of sycosis patients is not altered, sometimes the patients can complain about light itching, burning sensation and insignificant sickliness. Prolong course of the disease and its localization on the open skin area sometimes leads to oppression of mental state of patients. Sycosis is rather easy to diagnose on basis of typical localization of

	lesion areas, chronic course, and presence of infiltrate with follicular pustules. Parasitic sycosis (profound barber's rash) differs by more severe course; the pathogenic fungi are detected during laboratory testing. Hystologically, in the area of hair follicle, the abscesses appear, filled with matter, the infiltrate consists of polymorphonuclear leukocytes and fibroblasts, a small number of lymphocytes and plasma cells. The edema, degeneration of hair follicle and surrounding connective tissue is observed in epidermis and derma. In the acute period of sycosis development the broad spectrum antibiotics are administrated, including tetracyclines or macrolides (azithromycin, doxycyclinum, tetracyclinum etc.). The topical therapy of sycosis should be started with removal of all crusts from the surface under purulent process, by softening them with plant oil, then the lotions of 1 % solution of resorcinol, 0.1 % solution of rivanol or furacilin are put on. The affected hairs are tweezed, and the surrounding tissues are wiped daily with 70% ethyl alcohol. Later, the antibiotic and corticosteroid ointments are applied (Fusiderm, Oxycortum, Betaderm, Bactroban, FlucinarN). ***Vesiculopustulosis in children*** is a widespread purulent disease, which appears in the first years of life. In the ostium of the sweat glands numerous pustules appear, filled with white yellow matter, the size of a pin head to a small pea, they do not merge with each other and are surrounded by bright edematous circle. Vesiculopustulosis is localized at the sites of the greatest sweating and skin maceration. Premature infants of asthenic constitution mainly suffer from disease. Diagnosis is set on grounds of typical clinical presentation and process localization. The disease should be differentiated from scabies, in which the papulovesicles are paired. ***Epidemic neonatal pemphigus*** *(pemphigus neonatorum epidemicus)* is a cute infectious disease, differentiating from other pyodermae by very high contagiousness. Often the infection is transmitted to children from the adults (especially from medical personnel), suffering from pyodermae or quinsy, or through household articles. Sometimes, there are epidemic outbreaks of neonatal pemphius in maternity hospitals or day nursery. The disease appears in 7-10 days after the birth. In the setting of erythematous patches, the blisters the size of pea are forming, filled with serous contents, they are rapidly increasing in the periphery, reaching the size

	of nut and becoming less stressed. The content changes from serous into purulent. The blisters can be placed over the entire the skin cover, especially often on the abdomen near the umbilicus, on the buttocks, hips, back, chest and extremities. They rather quickly go into wet erosions, on the periphery of which the remains of blisters i.e. scraps of epidermis overhang. Drying up, the erosions do not leave crusts and regress with the formation of pink-brown pigment spots without scars. The general condition of the patients is not altered; the disease mostly lasts 4 to 5 weeks. The process in weakened children can rapidly spread, covering new skin areas by autoinoculation (infection transmission from affected skin areas to the health). Children condition significantly worsens, the temperature rises up to 38- 39°C, dyspeptic phenomena join. As concerns blood there are leucocytosis, eosinophilia, increased ESR. In some cases the disease can be complicated by conjunctivitis, otitis and even sepsis that sometimes lead to the death of a child. ***Exfoliative dermatitis*** *(dermatitis exfoliativa)* presents especially severe form of epidemic neonatal pemphigus. The disease begins with prodromes, such as nausea and temperature rise. Bright erythema appears in the folds of skin, around the mouth, umbilicus, anus and genitalia. In the setting of erythema there appear rather big tense blisters, which rapidly erode. In exfoliative dermatitis the positive Nikolsky's sign is observed, i.e. in case of friction of skin at the visible-healthy sites, it flakes off, forming the erosions; when pulling the scraps of blister with the tweezers, the epidermis exfoliates on the surrounding skin areas (the presence of acantholysis). The disease is accompanied by high temperature, dyspeptic phenomena. For several days, the process affects the entire skin cover, and sepsis develops, often with fatal outcome. The diagnosis of epidemic neonatal pemphigus is set on the basis of appearance in children on erythematous acute inflammatory background of stressed blisters, which rapidly erode. The disease is necessary to differentiate mainly from syphilitic neonatal pemphigus and congenital epidermolysis bullosa. Both of these diseases are already observed at childbirth, when epidemic neonatal pemphigus develops only on the 7^{th} to 10^{th} day after the birth. In case of syphilitic pemphigus, the blisters affect the skin of palms and feet, which is not observed in case of epidemic pemphigus. In case of congenital syphilis in children it is possible to observe at one time syphilitic rhinitis,diffuse popular infiltration of Hochsinger, osteochondritis, and in the process of microscopy of blisters content

	in the dark field of view there are a large number of causative agents of syphilis such as pale treponems, classic serological reactions of blood, treponemal immobilization test and fluorescent antibody test are strong positive. Congenital epidermolysis bullosa is characterized by intrauterine appearance of blisters, which occur most frequently at the sites of birth injuries, such as hairy part of the head, buttocks, upper and lower extremities. The treatment of epidemic neonatal pemphigus involves high-priority administration of antibiotic therapy in order to prevent complications and development of sepsis. ***Multiple abscesses in children*** *(abscessus multiplex infantum),* or ***pseudofurunculosis,*** is observed in neonates and infants. The disease begins with the appearance of superficial pustules in the ostium of sweat glands (periporihis). The agent is staphylococcus aureus, which penetrates in the depth of the sweat gland and causes the forming of deep indurated painful nodules. The skin over the nodules is not altered at the beginning, but soon it acquires reddish-brown color. The nodules the size of a pea to a nut soon suppurate and dense yellowish-green matter is discharged onto the surface of the skin. The nodules are very similar to furuncles, but they have not got core in the center (hence the name pseudofiirunculosis) and are not connected with pilosebaceous apparatus. Multiple nodules are located on the trunk, hairy part of the head, buttocks, lower and upper extremities. After discharge of a matter, the process ends with cicatrization. The course of the disease is rather soft, often relapses, is accompanied by high temperature, leukocytosis, increased ESR, and can be complicated with phlegmon, septicemia. In the pathogenesis of multiple abscesses appearance a significant role is played by unhygienic maintenance of children, increased sweating, malnutrition, the presence of dyspepsia and enteritis, rickets, tuberculosis and other infectious diseases. The diagnosis is set on grounds of appearance in children of persistent recurrent abscesses not connected with hair follicles and sebaceous glands. Hystologically, the appearance of purulent abscesses, connected with sweat glands and their ducts, are observed in derma and subcutaneous fat. The treatment includes the administration of antibiotic injections. Topically, unmixed ichthyol is applied at the affected sites or the

	abscess is pierced with a sterile needle after skin disinfection with the following anointment by alcoholic solutions of aniline dyes. After ulceration the antibiotic ointments are applied at these sites. ***Bullous impetigo*** *(impetigo bullosa)* is referred by one authors to streptoderma, and the others to the pyoderma, caused by staphylococci (benign form of staphyloderma). Clinically, the disease is characterized by the appearance of blisters or phlyctenas the size of a pea to a pigeon's egg, filled with serous nebulous liquid or matter. The elements are not stressed; they are surrounded with hyperemic circle, and quickly erode. The erosions with wet surfaces can enlarge at periphery; they are surrounded with the scraps of epidermis. Bullous impetigo is localized on the trunk, back of the hands, less often on the feet and lower legs. The course of the disease is benign; the general state of the children is satisfactory. The treatment consists of anointment of erosions with the alcoholic solutions of aniline dyes and antibiotic ointments.