- Ministry of Health of Ukraine
- Poltava State Medical University

- LECTURE

TUBERCULOSIS OF MUCOUS MEMBRANES OF ORAL CAVITY AND MAXILUFACIAL BONES

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Lecture plan

1. Definition of the concept of TB
2. Etioligy and pathogenesis of TB
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TUBERCULOSIS OF MUCOUS MEMBRANES OF ORAL CAVITY. It is set researches of the last years, that for 20% patients with the chronic forms of periodontitis find percistence of MBT, in 64% patients finded typical MBT and changed by the forms of causative agent (L-form MBT). The grainy forms of MBT often cause and support slow, persistently making progress chronic osteomielitis of jaws, that is accompanied such symptoms as the protracted fervescence, cough, perspire, loss weight, that are characteristically for tuberculosis. TB patients sometimes it is not known about them illness. Then the origin of ulcers in the cavity of mouth brings them over to stomatology, which an intricate problem to conduct differential diagnostics of stomach with tuberculosis, syphilis, oncology and other diseases.

- The oral cavity of tubercular patients often not sanitation, the proper hygienical examination absents. Development of pathological processes in the oral cavity is conditioned by the decline of general immunity, here defence goes down and mucous membrane of oral cavity. For patients with tuberculosis is mark propensity to development of tooth and chronic inflammatory diseases of paradontium decay. At 85,5% of patients of TB having a chronic odontogenic infection which flows on a background hyperesthesia of hard tissues of teeth and paresthesia of mucous membrane of oral cavity is revealed.

- Tuberculosis of the tissues of oral cavity are a clinical forms of TB, which characterized by the specific granulom-caseous-destraction defeat of different tissues and organs of oral cavity and more frequent meet as complication of destructive forms of primary or secondary tuberculosis of lungs or lymphatic knots of maxillufacial localization.
- The pathoanatomical picture of TB is characterized by changes in the tissues with forming of epithelioid granulomes, tubercles, with appearance caseous in a center granulomes forming tubercles with a presence giant polinuclear cells of Pirogov - Langhans“ round, with subsequent festering transformation of caseous, melting of tissues and forming of the destructions (ulcers) in different tissues of oral cavity.

- The nosotropic feature of tuberculosis of tissues of oral cavity mostly is a sputogenic way of infecting, then the MBT inoculation in the mucous shell of oral cavity takes place during expectorate of sputum, containing MBT, by patients with a destructive TB. Rarer infecting of tissues of cavity of mouth takes place by lymphogenic distribution of MBT from regional lymphatic knots or other maxillufacial tissuess, staggered by tuberculosis. The inoculation of MBT in tissue of cavity mouth is assisted by violation of integrity of mucous membranes or deep exhaustion of general and local immunological reactivity, when a mucous membrane is unable to perform of the defence. Through in wounds or cracks of mucous membrane of cavity of mouth and lips, MBT penetrate to tissues, where exposed to phagositosis by tissue macrophages which form heterospecific epithelioid granuloms (productive inflammation) at first.

- Then caseous appears in epitelioid granulomes, and around macrophages is transformed in the giant polinuclear cells of Pirogov - Langhanc", that reflects specificity of process and granulomes became tubercular. Further development of granulomes and their confluence conduce to formation of tubercles (tuberculum), that shows up on a mucous membrane the papular rash of grey - yellow color. Under influence of toxins and bioactive matters round tubercles develops exsudate inflammation which increases neutrophilic infiltration of tissues of mucous membrane, because of what caseous tubercles transformed in a pus, with melting of tissues and forming of ulcers. At absent of specific therapy a ulceranse-necrotic process makes progress, destroying a mucous membrane and adjoining tissues, spreads lymphogenic ways to the regional neck and submaxilar lymphatic knots. In the conditions of specific treatment exsudate inflammation resolves, and ulcers heal with formation of atrophy scars.

- In prior to antibacterial period the tubercular defeats of the oral cavity met more frequent and characterized by a heavy progress flow with destruction of adjoining to bone and cartilaginous tissues. With appearance of antitubercular preparations frequency of tuberculosis of oral cavity went down considerably, however with the height of drugs resistence TB and HIV/AIDS - associated of tuberculosis, this pathology again began to meet more frequent. By the most frequent localization of tubercular defeats, about what it is necessary to remember at providing of stomatological help, there are mucous membranes of oral cavity of, lips and cheeks; defeat of gums, hard and soft palate; language, amygdales and overhead respiratory tracts (mouth - nose - pharynx). Regardless of localization of TB for his is characterized staging development of process:

- **1 phase of immune-granular inflammation** is begun with form of nonspecific epithelioid granuloms (productive inflammation) with their subsequent transformation in specific tubercular granulomes, confluence of specific granuloms and forming of tubercles with caseous;
- **2 phase of tubercular- (papulome-) infiltration changes** characterized by stratification of exsudate inflammation on the productive reaction of the staggered tissues, transformation of caseous of tuberculum in a pus, forming of papules in the mucous of membrane, melting of tissues and passing to the next phase of development of TB

- - **3 - it is phase of clinico-morphological changes**, for which ulceros-necrotic and destructive changes in tissues are characteristic for TB. Exactly in the 3th phase development of tuberculosis of mucous membranes of oral cavity mostly there are clinical symptoms which compel a patient to apply for medical help in connection with appearance of pain. At examination of oral cavity find out a mucous membrane a greyish-yellow papular rash with inflammatory hyperemia and ulcerating **and 4 phase is a outcome of disease**, for which recovery with remaining changes in tissues or transition of disease is possible in a chronic form.
- Classification of clinical forms of TB of maxillufacial localization such as a lupus, strumoderma, collicuatio, lichenoid etc. today does not reflect etiologic and nosotropic essence of this process and must be resulted in accordance with the modern idea of evidential medicine about TB.

- There are more than 800 years that tubercular ulcers were adopted by a "lupus", as they reminded to the clinicians ulcers, arising up after the bite of wolves which the protracted making progress flow and uneffectiveness of the conducted treatment was also characteristic for. And as ulcers developed from a preceding papular rash, a that disease was named a lupus, and papular changes - "lupomes" (lupus is a wolf). More than 100 years ago R. Koch opened the etiologic factor of TB, tubercular ulcerating, but until now the analogical defeats of skin and mucous membranes name a lupus, rewritting terminology, which today not reflects etiologic and pathogenesis to phase essence of tubercular process. Until now the authors of train aids rewrite terminology of 800-years-old remoteness, classifying clinical forms of tuberculosis, which do not reflect a modern idea about fases of this pathology and offer the diagnostic tests of those old times ("symptom of apple jelly", "symptom of probe"), which today have nothing in common with modern evidential medicine. So, for example, by a term "strumoderma" a scrofuloderma and hypodermic celles was adopted. The word of scroful originates from lat. scrofa is a pig.

- The name a scrofules (piggy-wiggy) disease got because of increase of parotit salivary glands, neck and under maxillar lymphatic knots at different pathology, that was accompanied by their increase with the original change of look of patient, which got the name of piggy-wiggy in those times. Therefore in a modern idea about pathogenesis tuberculosis term strumoderma is absolutely absurd. Such name of clinical form arose up in connection with productive granulomatous inflammation which is characteristic for the initial phase of tuberculosis, that was foundation in those old times to consider that specific changes in a hypoderm are the staggered hypodermic lymphatic knots, therefore a disease was named a strumoderma by analogy with the disease of neck and under maxillar lymphatic knots.

- Illegally also selection in the separate clinical form of the so-called colliquative tuberculosis, as a lat. colliquatio - melting, dissolution reflects the phase of festering-ulcerous transformation of tubercular processes of different localization. Like with it it is not necessary to distinguish such clinical form as "lichenoid tuberculosis (scrofulous lichen) of ", which is an allergodermia without specific changes in the staggered tissuess and develops as a result hyperergic reactions of skin covers on infecting MBT of tuberculosis. Consequently, taking into account a modern idea about etiology and nosotropic features of development of tubercular process, it is necessary to give up old classification and to formulate the diagnosis of TB organs and tissues of cavity of mouth in accordance with modern clinical classification of tuberculosis (Order of MPH of Ukraine № 384 from 9.06.2006 "About ratified of instruction for to render help TB patients" - look a chapter "Clinical classification of ТБ"). The basic morphological displays of tuberculosis of cavity of mouth are the **papular rash** (**tuberculums), inflammatory infiltration and ulcers**.

- The tubercular (papular rash) on the mucous membrane of cavity of mouth is productive granulome-caseous formations which are formed in reply to inoculated MBT in tissues. Meeting, granulosums are transformed in ТБ tubercles which in mucous membranes have the appearance of milliary greyish-yellow or pink knots a 1-3 mm in a diameter. Increasing, they meet in more large knots ulcerate.
- Infiltrations develop as exsudate toxico-allergic inflammation which accumulates on the tubrculum-caseous defeats of mucous membranes, it size can be limited or widespread depending on reactivity of organism. Stratification of exsudate inflammation on tubrculum-caseous changes in tissues assists festering transformation of caseous, to melting of tissbecs of mucous membrane and forming in them destructive changes as ulcers.

- ТБ of ulcer of mucous membranes of cavity of mouth more frequent look like limited or vast, deep or superficial erosion with overhanging deflect edges, can be observed as small cracks, hiding sometimes in the folds of mucous membrane, or vast ulcerating, attended with edemata with pouring out of miliary greyish-yellow knots. A bottom of ulcers mainly is a vulnerable surface easily, covered granular with a grey raid, sometimes with shallow, grainy knots. The edges of ulcers are uneven, more frequent soft, but can be and compact. At cicatrization in place of ulcers atrophy scars are formed.
- On clinico-morphological displays for TB characteristic staging process.
  Distinguish the phases of making progress TB is infiltration, destruction, semination and phases of involutory (reverse) development of TB (at recovery), is resolving, scarring, compression, calcination.

- **The symptoms** of tuberculosis of cavity of mouth depend. from a sharpness, character, form and localization of process. The most early symptoms are displays of **intoxication** - fervescence, perspire, worsening of feel. At forming of the local ТБ changes there are **local** symptoms, from which it is possible to distinguish a sialosis, pains at mastication and swallowing of food, passing sometimes to the odynophagia. At tuberculosis of language patients grumble about pains not only at eating but also at conversation. In these cases oedematous massive infiltration of half or all front third of language is an original mechanical obstacle, hampering motions of him at conversation and mastication. In scrap from ulcers at citologycal research find the giant cslles of Pirogov-Langhans", in painting of scraps find MBT. At tuberculosis of jaw bone tissue of inter tooth partitions collapses, teeth take off all clothes, become mobile and fall out.

- At TB of lip the staggered area swells up, a lip increases in a size, covered by abundant blood-purulent crusts, after moving away, which ulcers take off all clothes. There are sickly cracks. Analogical symptoms are observed and at tuberculosis of soft palate, where infiltration-ulcerous changes, which stipulate sharp pains, abundant salivation, laboured motion of language, can develop. The chronic, mainly productive, even ulcerous forms of tubercular defeat of separate organs of cavity of mouth cause moderate permanent pains increasing at mastication of food.
- At tuberculosis of cavity of mouth regional lymphatic knots increase and made more compact. The test of Mantoux in most cases is positive. Process of cicatrization morphologically characterized by development of connecting tissues, tubercles indurating and encapsulating. In stomatological practice of TB meets as a mucous membrane of cavity of mouth, mucous membrane of lips and cheeks; gums, language; hard and soft palate, amygdales and gullet.

- If there was suspicion in the presence of tuberculosis of mucous membrane of cavity of mouth, main task of stomatology - to point a patient at an inspection in an antitubercular dispensary.
- Tuberculosis of mucous membrane of cavity of mouth is clinically characterized by appearance on the mucous membrane of tubercular knots of grey-yellow color, to soft consistency, 1-3 mm in a diameter. More frequent they are localized in area of overhead lip, hard and soft palate, gums and spread to the alveolar sprout of supramaxilla in area of frontal teeth. Almost always a process spreads to the regional lymphatic knots in which can develop specific changes with suppuration and formation of fistulas and rough scars. At recovery of tubercular ulcers there are atrophy scars on a mucous membrane.

- Distinguish the primary and secondary forms of TB of this localization. From the primary forms of TB before there was the primary TB complex of oral cavity. Today these forms of TB do not meet practically, as, since 1962, the all new-born is conduct an inoculation by the living vaccine of BCG, what on the essence is the primary infecting the weak and apatogenous culture of MBT. Therefore this clinical form of tuberculosis today has no more, than historical value and can meet as a casuistry.
- The **primary TB complex of mucous membrane** of cavity of mouth (primary affect, tubercular chancre) is a clinical form of primary tuberculosis, which arises up as a result of inoculation of MBT in the mucous membrane of cavity of mouth of the before not infected man. The inoculation of MBT in a mucous membrane takes place through her damages (cracks, wounds etc.).
- Characterized by forming in the cavity of mouth of triad of primary complex : primary affect (place of introduction of MBT), lymphangitis and regional lymphadenitis.

- **Pathogeny**. More frequent all MBT gets to the mucous membrane in area of amygdales or through gum. From the place of introduction of MBT spreads lymphogenic ways to the regional lymphatic knots. In 3-4 weeks in an oral cavity, in the place of inoculation of MBT a primary hearth appears as an area of induration of tissues is specific inflammation. Morphological basis makes him tubercular tubercles with necrosis, lymphoid-macrophages infiltration of tissues and appearance of epithelioid giant polinuclear celles of Pirogov-Langhans". In 8-10 days a primary hearth in the mucous membrane of cavity of mouth can collapse and an ulcer appears in his place, by sizes a to 1,5 cm in a diameter, a bottom is covered by granulations with a grey raid, edges lacerated, rounded, consistency.

- Regional lymphatic nodes arrive at the lymphogenic ways of MBT. It is set, if a place of primary penetration of MBT is amygdale, then lymphonoduss which are localized mainly near the corner of bottom jaw are struck by tuberculosis. If a primary hearth is localized in gums, then mainly lymphatic knots are struck, located more medial from the corner of bottom jaw. Specific tubercular inflammation which is characterized also by appearance of specific granulomes is formed in the staggered lymphonoduss, tubercles with formation of areas or total necrosis of staggered lymphatic nodes.
- In according with development of tuberculosis arises changes in lymphatic knots. At first they have small sizes, near a pea, densely elastic, unconnected with adjoining tissues. With growth of exudative-necrotic changes, lymphatic knots increase in sizes, a sickliness appears, inflammation passes to adjoiningtissue

- . A skin above the staggered lymphatic knots is not at first changed. Then, when lymphatic knots arrive at the sizes of cherry and larger, necrosis in them is transformed in a pus. Lymphatic knots acquire soft consistency, a skin above them becomes cyanotic, mobility of them diminishes. Necrosis of lymphatic nodes stipulates forming of cold abscess, the pus of which melts adjoining tissuess and through a fistula breaks through outside, forming ulcers with подрытыми edges and festering-necrotizing bottom.
- Clinical displays of disease, except described higher, at first characterized by the poorly expressed symptoms of intoxication, as a subfebril temperature which disturbs a patient small. As far as fascination of lymphatic knots and their festering transformation, the phenomena of intoxication grow, a temperature becomes more permanent and can rise to febril.
- Leukocytosis, increase of SER appear in blood.

- It is diagnosed on the basis of data of anamnesis (presence of TB or contact with TB patient), clinic of disease, microbiological research on MBT of соскоба of ulcers of mucous membrane, excretions from a fistula, histological research of biopsy of mucous membrane and lymphatic knot, tuberculin test of Mantoux (conversion of tuberculin tests for children), x-ray inspection.
- **The tuberculosis of the cavity mouth of secondary genesis** ARE more frequent develop as complication for patients, suffering a chronic TB with expectorate MBT. At expectorate of MBT in a sputum get in an oral cavity. From sputum MBT are inoculates in the mucous membrane of cavity of mouth (sputogenic way of infection), causing specific changes in her to different localization.

- **Miliary-ulcerous tuberculosis of mucous membranes of cavity of mouth.** On the mucous membrane of mouth he develops the second time as a result of the repeated introduction of MBT from the open hearths of infection, mostly from lungs at the heavy making progress flow of disease and exhaustion of immunological reactivity. On a mucous membrane in the places of introduction of MBT appear plural grey-yellow tubercular knots which do not disturb a patient. At progress of TB, knots fusions and the small appear small sickly ulcerating which increase gradually, arriving at sizes a 1,5×2,0 cm in a diameter and become sickly. Ulcers are shallow, with uneven, undermined edges. A bottom is covered by an yellow-grey rash, in the granulation covering and on the edges of ulcer fresh tubercles are located quite often. Surrounding tissues are oedematic. Regional lymphatic knots in the beginning can be not felt, but then thty are enlarges, at palpates elastically dense and sickly.

- **Tuberculosis of mucous membrane of lips and cheeks** practically is not isolated, meeting mostly in combination with the tubercular defeat of overhead respiratory tracts or other organs. Mostly this form of TB is exposed in a phase by destructions (ulcerous). In the beginning ulcers have character of cracks, being situated on the lines of folds on the outward and internal surface of lips or in the corner of mouth. Tuberculosis of mucous membrane of lips and cheeks can be limited, little sickly, ulcers have juicy granulations, saving mainly productive character of inflammation with inclination for cicatrization. There are a sickly edema of both lips and pouring out of miliary knots at the expressed exudative inflammation .

- Tuberculosis of gums, soft and hard palate meet rarely and only as complication of other forms of TB. Tissues of gum in the place of TB of defeat is bloodshot, oedematous, becomes loose, sickly and sanguifluous. The characteristic ulcerating, covered by granulations can appear in future. Tuberculosis of hard and soft palate can show up from superficial, limited as fissuresimilar ulcers with insignificant infiltration, especially on a soft palate, to vast uneven papillomatosic infiltration with characteristic uneven ulcers. At the beginning of disease on a mucous membrane greyish - yellow papular knots appear with the area of the limited perifocal hyperemia without violation of safety of epithelium. There are hyperemia of soft palate and tubercular pouring out of increase at progressing TB, knots meet and in them place soon appear sickly ulcers.

- **Tuberculosis of language** - defeats can be localized in the district of proglossis, lateral departments, back, along a midline and on his foundation. Limited mainly knot, and sometimes and ulcerous defeats, especially hiding in the folds of mucous membrane of language, can flow without simptoms and revealed only at the detailed research. In the initial stages of disease patients grumble about feeling of foreign body in to the mouth; in future with appearance of ulcers there are pains at eating, mastication, swallowing and even conversation. By basic clinical displays tuberculosis of language there are infiltration - ulcerous changes. At first appears knot pouring out with infiltration a compression which as far as progress of process disintegrates with formation of ulcer. Ulcer of small size and is small sickly, the bottom of ulcer is covered by granulations. Development of TB on a background characterized hiper reactivity by the expressed exsudate reaction tissues with pouring out of tubercles which ulcerate quickly. TB a process strikes a tag, sides, root of language, rarer - his topside more frequent.

- . Tuberculosis of root of language more frequent is distribution of ulcerous process from a larynx or amygdales. The root of language is bloodshot, an edema is determined on separate areas or embraces all root of language. On a mucous membrane plural greyish-yellow is determined papular pouring out, which in future ulcerate as separately sparse ulcers or, forming vast shallow erosions.
- **Tuberculosis sub maxillar and parotic salivary glands** meets very rarely mainly as complication. Distinguish 2 forms of TB of this localization: exudative-caseous and prodactive-sclerotic. A clinic is characterized by slow, small or by a painless tumular increase and compression of glands, with following formation of hearths of softening influence and fistulas with the selection of caseous.. Accompanied by sickly to sensation dryness in to the mouth and at swallowing. Diagnostics is possible only on the basis of backterioscopy on MBT of stroke of pathological material or histological research of biopsy of the staggered tissues or at the exposure of TB of lungs.

- **Tuberculosis of amygdales** mostly arise up in connection with the use of the infected MBT milk or another infected foods. For adults a tubercular defeat of amygdales usually is complication of active pulmonary process. For the children of TB of this localization presently does not meet practically. Clinically TB of amygdales can long time. not to show up. Basic symptoms of TB of amygdales are pain at swallowing, hoarseness, disphony, loss of voice, cough, sometimes hemoptysis. At TB of amygdales regional lymphatic knots are struck such, as neck, submaxillar et al.
- Flow, end and prognosis at tuberculosis of cavity of mouth, as well as at another localization of TB depend on the state of organism, his general and local immunological defence, which has a decision value in development of clinical displays of TB, his flow and end. Modern antitubercular drugs and antibiotics in considerably degree approached tuberculosis to the guided infections and appeared a very effective mean at treatment of tuberculosis including TB of cavity of mouth. In this connection prognosis in most cases diseases of TB today is favourable.

- **Differential diagnostics of TB of cavity of mouth.**
- In spite of the fact that tuberculosis of cavity of mouth, amygdales and gullet relatively rare diseases, in modern terms tuberculosis must be plugged in the list of diseases during realization of differential diagnostics of pathology of mucous cavity of mouth. A differential diagnosis is conducted in regard to the ordinary acute and chronic diseases of mouth - stomatitis, amfodontosis, traumatic damages and other.
- **At catarrhal stomatitis a mucous membrane** is bloodshot and has the easily worn away raid on the edges of gums and teeth. A disease passes comparatively quickly at corresponding therapy. At a thrush on the mucous membrane of mouth roundish whitish name - plates, delimited, surrounded by a reddish slightly overpeering border, are sparse.

- **A dairymaid (молочница)**, observed sometimes at seriously sick a lung TB, can sometimes cause diagnostic difficulties. A dairymaid is characterized by appearance on the mucous membrane of mouth of shallow white loose name - plates. After a removal the bloodshot takes off all clothes their cottonwool tampon, slightly bleeding, without violation of epithelioid cover mucous membrane.
- **Traumatic damages** are usually conditioned by the corresponding irritations of mucous membrane of mouth (sharp edge of tooth, prick by parts of food). The traumatic ulcerating is accompanied quite often by a hemorrhage, by the considerable inflammatory phenomena and comparatively easily it can be differentiated from tuberculosis.
  Amfodontosis is characterized by inflammation of gum, baring of roots of teeth with formation of gingival pockets with extrusion (выбухающими) granulations or with seropurulent separated, by the presence of odontolith, atrophy of lune and odontoseisis.

- **Chronic myxadenitis of sky**, especially at presence of prosthetic appliance, tubercular tubercular infiltration can simulate. However firmness of defeat, considerable improvement, and sometimes and liquidation of process after the removal of prosthetic appliance, the largenesses of knots and presence of deferent channels of mucous glands allow to recognize veritable nature of disease.
- **Ulcerance-chaffy stomatitis** of N. P. Simanovsky-Vensan" of characterized by an outbreak with formation of the limited necrosises of chaffy character, quickly passing to the crateriform ulcers, surrounded by an inflammatory rim, with a strong unpleasant smell, salivation.
- **Red flat lichen (lichen ruber planus**), localized usually on the mucous membrane of cheeks, comparatively easily diagnosed on the presence of conical, silvery, полигональных name - plates, giving a shagreen kind to the mucous membrane. All mucous membrane is covered by the network of whitish uneven strips with sparse white or bluish - white points.

- **Erythema the exudative moldbaked (erythema exsudativum multiforme**) is characterized, especially on sky, pink - red, sharply outlined, with the scalloped edges by hyperemia, studded by separate white - yellow bubbles by a size with pin head, after dissection of which there are shallow reddish - bluish spots of wrong form.
- **Syphilitic gummatous ulcers** are mainly situated in language and in the bone frame of cavity of mouth. Ulcers deep, dense, delimited, covered by color copper - coloured. Differential diagnostics is conducted, as well as at the syphilitic processes of gullet and larynx.
- **Cancer ulcers** are more dense, than tubercular, and accompanied by dense, sometimes sickly infiltration of regional lymphatic knots. At suspicion on a tumour (cancer, sarcoma and other, it is recommended necessarily to produce a biopsy.

- **2. TUBERCULOSIS BONES OF THE MAXILLUFACIAL LOCALISATION**
- **Tuberculosis of bones** - the frequent defeat of bones develops at the primary infecting, when MBT distribution by blood ways are arrive at bones, settle in mieloid tissues and in a spongy matter bones which have plenty of blood vessels and slow blood stream with the open contact of bone-cerebral tissues with blood of sine capillaries. Defeats of bones possibly at distribution of MBT on motion a tooth, arriving at bone tissues of small hole of tooth. Tooth-gingival pockets can be formed thus, as a result of development of specific changes in gums, destruction of them and baring of neck of tooth. Bone tissues of small hole of tooth, TB tubercles appear in which, is then involved. An osteoporosis develops in an early period of defeat of bone only, specific changes arise up later as far as progress of TB.
- In forming of tuberculosis of bone distinguish 3 phases:

- **a 1 phase** is forming of tubercular hearth in normal bone tissues. Clinically is primary tubercular остит. Clinical displays are not present, a function is stored. At a х-лучевом inspection expose the limited area of osteoporosis - only sign of pathological process which develops in a bone. In this period ТБ does not diagnose
- **2 phase** of progress of tubercular process : strengthening of inflammation, distribution of him on adjoining soft tissues, appearance of pain, contracture of muscles, formation of abscesses, fistulas on a background the symptoms of intoxication.
- **3 phase** of becoming and stabilizing of tuberculosis silent or passing to the chronic flow with the periodic intensifying and remissions.
- In a clinic it is necessary to distinguish 2 types of symptoms : general and local.
- General, related to intoxication: increase of temperature, perspire, loss a weight, fatigueability, parahypnosis, appetite.

- Local: pain in area of jaw (slight swelling), the dense was swollen, discoloration of skin, appearance of "migrating abscess" is a change of consistency, painlessness, forming of fistula with the selection of pus as the caseous masses, dicking and fall of teeth.
- From the bones of person a malar is more frequent struck by tuberculosis. Thus there is turning of overhead and bottom sky red, overhead or bottom century, an edema appears. Then in place of hearth near an abscess which breaks through and appears fistula appears external with half an eye. At a favourable flow a scar which deforms an eyelid is formed. X-ray pictur at tuberculosis of malar one or a few shallow hearths which contain shallow sequestra quite often are revealed.
- Tuberculosis of jaws is observed more frequent at the defeat of lungs. Non is characterized by formation of single hearth of resorption of bone, quite often with the expressed periosteal reaction.

- Tuberculosis of bottom jaw is characterized by a drift and pains which grow gradually.
- Distinguish two forms of tuberculosis of bottom jaw :
- central primary is localized in area of corner of bottom jaw, because of what a process can spread to the joint. Credible penetration of infection from a middle ear, temporal bone, soft tissues;
- alveolar - develops at penetration of MBT through the channel of the damaged tooth.
- In the place of defeat a jaw is thickened, an abscess, fistulas, appears then. Patients can not open a mouth to chew, especially when an abscess appears at the level of temporal bone.
- Tuberculosis of jaws can develop at the primary infecting and as a result of distribution of process from the mucous membrane of cavity of mouth. In this connection distinguish two clinical forms:
- tuberculosis of jaw for children and teenagers with a primary tubercular complex;
- tuberculosis of jaw for adults with an active specific process in lungs.

- **First form.** As a result of distribution of infection from a primary tubercular complex in a jaw bone a single hearth develops usually. If a supramaxilla is struck, then a process is localized on a front surface her, in the area of bottom edge of eye socket, on a side - temporal sprout or on an alveolar sprout.
- On a bottom jaw TB is localized usually in the area of branch of jaw or alveolar sprout.
- **Clinic.** Flow of tuberculosis of jaw for children and teenagers in most cases of high quality, languid. As a rule, a disease flows without the substantial pain feeling, but with clear chronic лимфаденитом. Submaxilar lymphatic knots, and skin and located in a neck triangle lymphatic knots increase later, become dense, metastases remind at malignant tumours. The knots staggered by tuberculosis are accustomed to drinking with each other and form not mobile packages. Caseous disintegration of central departments which become softened is possible in subsequent. Next to the staggered area of bone there is infiltration of adjoining soft fabrics which stand soldered with the staggered bone. If a process is localized in the area of corner of jaw, infiltrates masseter and there is a lockjaw.

- Infiltration gradually grows soft, a skin blushes in his area, then acquires a cyanotic tint. In place of softening influence of infiltration of soft fabrics, under a синюшной skin, a "cold abscess" which can be unsealed by a few fistulas appears. If it does not take place, then an abscess must be unsealed.
- Languid granulations come forward from fistulas, and the pale green pus of watery consistency is distinguished with the admixtures of caseous lumps. At sounding of fistulas it is succeeded to find out a bone defect or cavity the walls of which are covered by granulations, and the very dense, склерозированные pieces of bone - sequestra are inwardly located. Fistulas are closed sometimes, scarring, but then alongside there are new. Scars which remain are pulled in, atrophy, distort a person and neck.
- **Diagnostics.** On the sciagrams of jaws in an initial period of disease find out the rounded disintegration of bone, not having clear borders. Sometimes a small sequestrum is visible in such cavity. In the future, when a process calms down, round a tubercular hearth the area of compression - sclerosis of bone fabric is visible.

- **Differential diagnosis**. On occasion softening influence of infiltration can be taken for a actinimicotic hearth. For clarification it is necessary to conduct serum and pathhistology researches.
- An increase of lymphonoduss can be and at a chronic festering odontogenic gnathitis. For clarification of diagnosis it is necessary to take into account data of anamnesis, presence or absence of gangrenous tooth in the area of defeat, character of sciagraphy data.
- The cancer of jaw in combination with appearance of megascopic dense lymphatic knots differs in more expressed destruction of bone, disintegration of подчелюстных fabrics, cachexy.
- An odontogenic hypodermic granulosum in a great deal reminds ТБ hearth: infiltration above which a skin acquires a leaden color appears in hypodermic fabrics of cheek. Afterwards infiltration purulence and an abscess is unsealed, forming a fistula with a wretched selection. However a одонтогенная hypodermic granulosum is always related to chronic periodontit or with chronic osneomielitis. Connection of granulosum with an inflammatory process in periodont of tooth is determined by the presence of тяжа from a tooth to the granulosum.

- **The second form of tuberculosis** of jaw is observed for patients with an active TB and arises up in connection with the defeat of bone tissue a tubercular infection which can spread from the staggered fabrics of oral cavity through the channel of gangrenous teeth or gingival pocket.
- **Clinic.** As a result of disintegration of tubercular infiltration and tubercles on the mucous membrane of gums superficial, sharply sickly ulcers appear with подрытыми edges. The rather yellow bottom of ulcer has a grainy kind, covered by shallow pink granulations. An ulcer gradually increases due to disintegration of nearby tubercles on a mucous membrane. The necks of teeth take off all clothes here; a process gradually passes to the layer of bone and периодонт of teeth; teeth get shattered and fall out, and in them place there are bone язвенно-некротические defects of small holes, which do not heal. Them substituted for by granulations which contain tubercular tubercles.

- At the defeat of bone a tubercular infection through the channels of gangrenous teeth or through the bottom of gingival pocket a specific disease at first it is difficult to diagnose, because the color of gums here long remains unchanging. Only after destruction of considerable areas of spongy and cortical matter a mucous membrane begins to blush, swells up, and then one or a few fistulas from which a liquid pus is distinguished with including of caseous lumps appear on her. Round teeth which are located in the area of tubercular defeat, yet the symptoms of tubercular periodont (pain not sharply expressed and gradually increasing, the shakiness of teeth makes progress) develop to the origin of fistulas. Ossification periostitis which shows up the bulge of periost of alveolar sprout develops sometimes. At development of tuberculosis of jaw and joining secondary, banal with the languid flow of osteomielitic process, sequestra become separated from, fistulas appear. On a supramaxilla there can be connection between the cavity of mouth and genyantrum or cavity of nose. On a bottom jaw described odontogenic-canalicular tubercular process of alveolar sprout and from the body of jaw can pass to the corner, and afterwards on her branch, causing a spontaneous (pathological) break. Regional lymphatic knots increase, accustomed to drinking in packages, made more compact

- **Diagnostics.** Roentgenologic at ТБ defeat of alveolar sprout find the hearth of destruction of bone fabric in the area of a few teeth. Often this hearth has the rounded contours laciniate and sometimes half-round deepening around. Next to it there can be shallow sequestra. If a process is active and makes progress, round the limited hearth of destruction the stripe of osteoporosis is visible. At apex tubercular periodont roentgenologic does not expose specific features. Changes look like the typical picture of granulating periodont. In a dynamics on the series of pictures progress of hearth of destruction is visible. At marginal tubercular periodont. by means of series of sciagrams the fadeaway of compact bone matter on the edge of small hole, resolving of bone trabeculas is revealed in the area of inter alveolus partitions, osteoporosis of adjoining departments of bone.
- For clarification of diagnosis conduct 3th multiple microscopic research of strokes of pus, maintenances of ulcers and bone cavities in the presence of МВТ, with subsequent культуральным research; microscopic research of biopsy of adjoining soft or bone tissues.

- Tuberculosis of maxillufacial localization it is diagnosed on the basis of results backterioscopy and cultural research of pathological material on MBT (etiology diagnostics), histological research of biopsy of the staggered fabrics, tuberculin test, that it is especially important for children and teenager, and also application of x-ray methods of research of easy and staggered tissues, when resorption of bone and single intraosteal hearths is determined. They have clear borders and sometimes contain shallow sequestra. At the remoteness of disease a intraosteal hearth is separated by the area of sclerosis from a healthy bone.
- Differential diagnosis. A defeat tuberculosis of bone of jaws it is necessary to differentiate from the same processes, caused by suppurative microorganisms, and also malignant new formations, that is set by bacteriological and by histology research of pathological material and biopsy tissues.

- Treatments the patients of ТВ of maxillufacial area pass in the specialized permanent establishment. Common treatment is complemented by local: by a hygienical care and sanation of cavity of mouth. Operative interventions conduct strictly on testimonies: at the clinical effect of treatment and limitation of local process in the cavity of mouth, in bone tissues. Expose intraosteal hearths, scrape granulation from them, delete sequestra, excise fistulas and take in ulcers or refresh their edges for cicatrization of tissues a secondary pull under a tampon from an iodoform gauze. Teeth with the staggered tuberculosis delete periodont. After recovery conduct a prosthodontics.
- A prognosis at the general antitubercular treatment conducted in good time is favourable.
- **Prophylaxis.** Application of modern methods of treatment of ТБ is basic in the prophylaxis of tubercular complications of maxillufacial localization. Sanation of oral cavity is needed side by side with this.

- A tactic of doctor-stomatologyst is in the holiatry of patients tuberculosis (reminder). At taking the history for patients, appealings for a stomatological help, it is necessary to pay attention, and also presence of risk factors which assist development of ТБ in the presence of diseases of organs breathing (tuberculosis, chronic bronchitis, fever of lungs, pleurisy) : it is HIV/AIDS, alcoholism, drug addiction, diabetes mellitus, ulcer illness of stomach, . At suspicion in the presence of tuberculosis to beginning of treatment to point patients at a fluorography and on an inspection in an antiphthisic dispensary. Any obscure defeat of mucous cavity of mouth, if it has the character knotted, ulcerous or papulo-necritic, can be conditioned by tuberculosis.
  1. For a patient there can be a cough with a sputum during 3 weeks and anymore, as tuberculosis of cavity of mouth, amygdales and gullet more frequent arises up at the expressed ТВ. There can also be a loss of mass of body and other symptoms of tubercular intoxication.

- 2. At the sharp and subsharp forms of tubercular defeat, especially ulcerous, patients grumble about a sialosis, pains at a reception and mastication of food, passing sometimes to the odynophagia. At the defeat of language, even in an infiltration form, patients especially grumble about pains not only at eating but also at conversation. Analogical symptoms are observed and at tuberculosis of soft palate.
  3. Hoarseness and change of voice, up to a whisper.
  4. Pain at swallowing, that is the sign of defeat of epiglottis. Pain can be intensive. 5. A presence is in the cavity of mouth of knot defeats, ulcerating, edema of gums. 6. At an inspection can be found out ulcerating of vocal cords or other areas of overhead respiratory tracts.
  7. Research of sputum allows to educe the presence of MBT.

- 8. On the survey sciagram of organs of thorax at tuberculosis expose specific changes in lungs. 9. Tuberculosis of cavity of mouth can have the appearance of malignant displays, traumatic or aphte ulcers, actinomicotic, syphilitic ulcers of and other. 10. Differential diagnostics by means of histological research of biopsy material, conducted with the purpose of authentication of TB of granulosums, containing the epithelioid and giant cells of Pirogov –Langhans". It is recommended to get biopsy material from the deeper layers of ulcer in language, as a biopsy of surface layers can not educe specific changes from cellular hiperplasy.
  11. At the primary tuberculosis of oral cavity is a rare find he must be plugged in differential diagnostics of damages of mucous membrane.
  12. Examination of cavity of mouth for patients by the active form of tuberculosis and providing to them a stomatological help is necessary to conduct not before, than in 2-4 months from the beginning of specific chemotherapy (in default by patient with excretion MBT) and to direction of doctor-phthisiologist (after the removal of symptoms of intoxication and at the normal temperature of body).

- 13. In connection with mionectic resistence of organism for patients by the active form of TB, which affects increase of accumulation of soft dental raid and weight of inflammation in tissues of paradontium, stomatological treatment must be begun with the good hygiene of cavity of mouth, her sanation, antiinflammatory therapy of paradont, perodont, caries and prophylactic antibacterial measures.
  14. Patients pass treatment tuberculosis of maxillufacial area only in specialized antitubercular medical establishment.
  15. Common treatment must be complemented by local measures: by hygienical maintenance and sanation of cavity of mouth, by the rest room of ulcers.
  16. Operative interventions are conducted on testimonies, namely at the clinical effect of antitubercular treatment and limitation of local process in the cavity of mouth and in bone tissues.
  17. Teeth with the staggered tuberculosis it is necessarily deleted periodont. 18. At clinical recovery after the basic course of treatment and local medical measures of patient tuberculosis must remain under a supervision during 2 years.

Thank you very much