GUIDELINES
Individual work of students

<table>
<thead>
<tr>
<th>Educational discipline</th>
<th>Surgical stomatology</th>
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<tr>
<td><strong>Module № 2</strong></td>
<td>Inflammatory diseases in maxillofacial region.</td>
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<tr>
<td><strong>Content module № 4</strong></td>
<td>Nonodontogenous inflammatory diseases in maxillofacial region</td>
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<tr>
<td><strong>Course</strong></td>
<td>3</td>
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<td><strong>Faculty</strong></td>
<td>Stomatological</td>
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Poltava 2018
1. Actuality of the topic.
Among inflammatory processes of maxillo-facial localization the special group make disease, which caused by specific activators. So, actinomycosis - infectious specific disease, which results from penetration in organism actinomycete. The disease can amaze all bodies and tissues, but more often (80-85% of cases) - maxillo-facial site. Therefore, the knowledge etiology, pathogenesis, clinic and diagnostics of the named disease is necessary for the students.

2. The objectives of the studies.
To know etiology, pathogenesis, pathological anatomy, classification, features of a clinical course, methods of diagnostics actinomycosis of maxillo-facial region.
To be able to make the diagnosis actinomycosis of maxillo-facial region, to carry out differential diagnostics.

3. Basic knowledge, skills, skills necessary for study topics (interdisciplinary integration).

<table>
<thead>
<tr>
<th>Name of previous courses</th>
<th>These skills</th>
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<tbody>
<tr>
<td>Microbiology</td>
<td>Agents which produce above named diseases, their property. Methods microbiological research.</td>
</tr>
<tr>
<td>Pathological anatomy</td>
<td>An etiology, pathogeny actinomycosis. The mechanism of formation of a specific granuloma, secondary granuloma.</td>
</tr>
<tr>
<td>Pathophysiology</td>
<td>A pathogenesis of above named diseases.</td>
</tr>
<tr>
<td>Pharmacology</td>
<td>Preparations which are applied for treatment of actinomycosis, their pharmakokinetics and pharmacodynamics.</td>
</tr>
<tr>
<td>Internal illnesses</td>
<td>The formula of blood in norm and at inflammatory diseases.</td>
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</table>

4. Tasks for independent work in preparation for the classes.
4.1. A list of key terms, parameters, characteristics that must learn the student in preparation for the lesson:

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>Actinomycosis</td>
<td>is a rare infectious bacterial disease caused by Actinomyces species.</td>
</tr>
<tr>
<td>Aktynolizat</td>
<td>vaccine for the treatment of actinomycosis</td>
</tr>
<tr>
<td>Ksantom cells</td>
<td>cells containing fat inclusions</td>
</tr>
</tbody>
</table>

4.2. Theoretical questions to lesson:
1. Etiology of actinomycosis.
2. Pathogenesis of actinomycosis.
3. Pathological anatomy actinomycosis.
4. Classification actinomycosis.
5. Clinical picture actinomycosis.
6. Diagnostics actinomycosis.
7. Differential diagnostics.
8. Name general principles of treatment actinomycosis.
9. Describe a technique of surgical intervention at actinomycosis.
10. Name physiotherapy methods of treatment actinomycosis.
11. General principles of preventive maintenance actinomycosis.

4.3. Practical works (tasks) are performed in class:
- To take possession of technics of realization observation of the patient with actinomycosis;
- To make the plan of examination of the patient;
- To carry out differential diagnostics actinomycosis.
- To acquire technique of carrying out observation of patient with actinomycosis.
- To make the plan of examine of the patient with actinomycosis.
- To carry out differential diagnostics of actinomycosis.
- To make the plan of local treatment of patients with actinomycosis.

COLUMNS OF LOGIC STRUCTURE OF THEME
  Ways of penetration actinomycete
  - odontogenic
  - stomatogenic
  - contact
  - rhinogenic
  - otogenic
  - hematogenic
  - lymphogenic

CLINICAL FORMS ACTINOMYCOSIS

<table>
<thead>
<tr>
<th>cutaneus</th>
<th>subcutaneus</th>
<th>mucous</th>
<th>submucous</th>
<th>actinomycosis of jaws</th>
<th>generalized form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subcutaneous intermuscular (profundus)</td>
<td>actinomycosis lymphatic nodes</td>
<td>actinomycosis periosteum of jaws</td>
<td>Odontogenic actinomycotic granuloma</td>
<td>actinomycosis organs oral cavity</td>
<td></td>
</tr>
</tbody>
</table>

By course
  - complicated
  - uncomplicated

5. Theme contents:
Actinomycosis - infections disease, which results from penetration in organism actinomycete.
Etiology: the culture actinomycete can be aerobic and anaerobic. In development actinomycosis the significant role is played by the mixed infection - streptococcus, staphylococcus, diplococcus, and also anaerobic microbes - bacteroids, anaerobic streptococcus, staphylococcus etc. Anaerobic the infection helps penetration actinomycete in a tissues of maxillo-facial region and further diffusion them by cellular to spaces.

Pathogenesis. Actinomycosis results autoinfection. In a cavity of a mouth actinomycetes are in dental deposit, carious cavities, pathological gingival pockets, tonsils.

In norm the constant presence actinomycete in a cavity of a mouth does not causative infectious process, as between immunological the mechanisms organism and antigenes actinomycete exist natural balance (innate immunity).

The conducting mechanism of development actinomycosis is infringements immunity of system: reduction or infringement immunobiological responsiveness organism, factors of not specific protection in reply to penetration ray fungi. Among the general factors, which break immunity it is possible to name primary or secondary immunodeficiency of disease and state. The large meaning have local pathogenetic of the causal - odontogenic or stomatogenic, less often - tonsilogenic and rhinogenic inflammatory of disease, and also damages of tissues, which break normal symbiosis actinimycetes and another microflora.

Site of entry of penetration actinomycosis of an infection at a defeat of tissues and organs maxillo-facial region can be carious teeth, pathological gingival pockets damaged and inflamed mucous environment of a cavity of a mouth, pharynx, nose, ductus salivary gland. Incubative the period lasts from several days about 2-3 weeks, but can be and more long - about several months.

Pathological anatomy. In reply to penetration in tissues ray fungi is formed specific granuloma. Around settlement ray fungi - druse actinomycete accumulate polynuclears and lymphocytes. On periphery of this zone is formed granulation a tissue, which consists from round, plasmatic, epithelioids of ceels and fibroblast. Also occasionally there are huge multinuclear ceels. The characteristic presence xanthome cells (contained drops of fat). Further in the central sections actinomycosis granuloms occurs necrobiosis of ceels and their disintegration. Thus macrophages grasp slices mycelium and with them migrate in next with granuloma of a tissues. There is formed secondary granuloma. Further similar changes are observed in secondary granulomas - it turns out tertiary granuloma etc. On periphery specific granulomas granulation the tissues ripens and turns into fibrous.

The important meaning has connection of a secondary purulent infection. Strengthening necrotic of processes, local diffusion of process quite often connected with connection purulent microflora.

The skin form actinomycosis meets rather seldom. From disease results diffusion odontogenic of an infection or damage of skin covers. The patients complain of an insignificant pain and condensation on a small site of a skin, indicate on gradual condensation and increases of the locus (locuses).

Actinomycosis of a skin is taking without increase of temperature rise. At survey reveal to inflammatory infiltration of a skin, is defined one or several locus.
The skin becomes thin, changes its colour from bright red up to brown-dark blue. In one cases on skin of the face and necks prevail pustule, filled serous or purulent liquid, in others – tuberculums, which contain granulations of growth, meets combinations pustules and tuberculums.

**Subcutaneous** the form actinomycosis differs long, but tranquil course. During disintegration specific granuloma the process can accompany by an insignificant pain in the locus of a defeat and increase of temperature rise up to subfebrile.

At survey in subcutaneous cellule is defined rounded infiltrate, at first dense and painless. During disintegration specific granuloma the skin united with abutting by tissues, becomes bright red or red, at the centre of the locus there is a site of a softening.

**Submucosal** the form actinomycosis meets rather seldom. This defeat arises more often at infringement of integrity of a mucous environment of a cavity of a mouth. Such form arises without increase of temperature. Painful of sensation in the locus of a lesions insignificant.

Actinomycosis of a mucous environment meets seldom. The injuring factors can be alien bodies. More often the mucous environment of the bottom lip and cheeks, sublingual of region, bottom and lateral surfaces of language is amazed. The process is characterized slow, quiet, current, usually is not accompanied by increase of temperature. A pain in the locus of a defeat - slightly.

Odontogenic actinomycosis granuloma can be in a skin, subcutaneous cellulae, subcutaneous of a tissues, periosteum of jaws. Can be observed band, which is directed to granuloma. A mucous environment above a defeat frequently become thin, forming sinus tract.

**Subcutaneous-intermuscular** the form meets seldom. The process develops in subcutaneusoi, intermuscular, interfascial cellulae, is distributed to a skin, muscle, jaw and others bones of the face. At survey it is found out cyanotic of a skin cover above infiltrate, in separate sites infiltrate there are locus’s of a softening.

The break become thin of a site of a skin results in discharge of viscous pus - figurative liquid, which quite often contains fine, whitish of seeds - druses actinomycete.

Acute beginning of disease or its aggravation is accompanied by temperature rise up to 38-39°C, pain. It is marked wooden density peripheral of section infiltrate, locus of a softening at the centre with sinus tract. A skin above the involve locus matted together, cyanotic. In the further process develops on two directions: occurs gradual resorption and restriction infiltrate or diffusion of process on the next sites.

An actinomycosis lymphatic node is shown as actinomycosis lymphangitis, lymphadenitis abscess, adenophlegmons or chronic hyperplastic lymphadenitis.

Actinomycosis periosteum of jaws is taking as exudative or productive inflammation. X-ray the friable periosteal thickening of non-uniform structure is defined.
Actinomycosis of jaws. The pathological process at a primary defeat jaws more often is located on lower, less often on upper. Primary actinomycosis can be as destructive and productively - destructive of process.

Primary destructive actinomycosis of jaws can be shown as intraosseous of defect or intraosseous gumma.

Actinomycosis of organs of a cavity of a mouth (language, tonsils, salivary glands) meets rather seldom and represents significant difficulties for diagnostics.

Actinomycosis of language depends on localization of process and can proceed as diffusive inflammatory of process, which reminds abscess or phlegmon.

Actinomycosis tonsils is shown welding tonsils with palatine archs.

Actinomycosis salivary glands can be primary and secondary. The primary locus of development can be lymphatic nodes, which are placed between lobules salivary gland.

Actinomycosis maxillary sinus is reminds sinusitis.

The diagnosis actinomycosis represents significant difficulties. It should be supported with microbiological research discharge, realization of methods immunodiagnostic, X-ray, and in sometimes - pathomorphological by research. The reusable diagnostic researches are on occasions necessary repeated, frequently.

The differential diagnosis will carry out with inflammatory by processes: abscess, phlegmon, periostitis, osteomyelitis of jaws, tuberculosis, syphilis, tumours and tumor-like by diseases.

The therapy actinimycosis of maxillo-facial region should be complex and include surgical and conservative methods.

At surgical treatment volume and the character of operative intervention depends on the form actinimycosis and localization of its locus.

For specific immunotherapy use actinolysat and actinomycete polyvalent a vaccine (APV) by a method Suteev G.O., Asnin D.I. Prescribed specially picked up immunomodulators, general health-improving, stimulating means, sometimes - biologically active substances.

For removal intoxication, will carry out desinyoxication therapy. In a complex of treatment include multi-vitamins with microelements, enterosorbert.

The treatment of the patients actinimycosis should be combined with purpose antihistaminic of means, pirasolon derivative, and also symptomatic of therapy.

In a complex of treatment of the patients actinimycosis recommend to use physical methods of treatment (UHV, medical ionization, phonophoresis of medical means, radiation of the helium-neon laser, on independed – paraffin therapy).

After complex treatment actinimycosis of maxillo-facial region and neck the recovery comes after one - two rates of treatment. At generalized to the form of actinomycosis tissues of the face and jaws will carry out 3-4 and more course of specific treatment.

The forecast at actinimycosis maxollo-facial region in most cases favorable.

Preventive maintenance. Sanitize a cavity of a mouth also delete odontogenic, stomatogenic the pathological locus’ s. Main in preventive
maintenance actinimycosis there is an increase general anti-infection of protection organism.

6. Materials for self control:

A. Assignments for self control (tables, charts, drawings, graphs)

<table>
<thead>
<tr>
<th>Main tasks</th>
<th>Recommendations</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>To acquire procedure of examine of the patient.</td>
<td>To carry out in such sequence: 1. Interrogation of the patient (the complaint, an anamnesis of disease). 2. Survey of the patient, a palpation, a percussion, probe. 3. Additional methods of diagnostics.</td>
<td>To pay attention to the common state of the patient, presence of pathological changes of a skin of the face and a mucosa.</td>
</tr>
<tr>
<td>To carry out observation of the patient.</td>
<td>During examine to reveal signs of actinomycosis.</td>
<td>To pay attention to correctness of filling of a card of the out-patient patient.</td>
</tr>
</tbody>
</table>

B. Self-control tests:

PROBLEM №1.
What cells are characteristic for actinomycosis of process?
A. Cells Chargreivs.
B. Shvanovsky of a cells.
C. Cells Yavorskoi.
D. Xantoms of a cells.
E. Cells Pirogovs- Langchans.

PROBLEM № 2.
Subcutaneous form actinomycosis is divided on:
A. Abscess, gummatous and mixed.
B. Pustular, grumous, mixed.
C. Purulent, necrotic, is purulent - necrotic.
D. Infiltrative, abscess, mixed.

PROBLEM №3.
Skin form actinomycosis to be divided on:
A. abscess, gummatous and mixed.
B. Pustular, grumous, mixed.
C. Purulent, necrotic, is purulent - necrotic.
D. Infiltrative, abscess, mixed.

PROBLEM №4.
Actinomycosis lymphatic nodes proceeds:
A. Rapidly, with increase of temperature of a body expressed intoxication of organism
B. Slowly, has long character.
C. Acute, subacute and chronically.

PROBLEM №5.
Subcutaneus-intramuscular the form actinomycosis is characterized:
A. by presence gumatous of formations in cellulae.
B. by formation infiltrates, which can be suppurate.
C. by presence gumatous of formations, infiltrates, abscess, keloid of cicatrix.

PROBLEM №6.
By a method Suteev G.O. actinolysate enter:
A. Intracutaneously.
B. Subcutaneously.
C. Intramuscularly.
D. Intracutaneously and intramuscularly.

PROBLEM №7.
By a method Asnin D.I. actinolysate enter:
A. Intracutaneously.
B. Subcutaneously.
C. Intramuscularly.
D. Intracutaneously and intramuscularly.

PROBLEM №8.
How many times per one week enters actinolysat at treatment actinomycosis?
A. 1 time per one week.
B. 2 times per one week.
C. 2 times per one week (in day).
D. Each day.

PROBLEM №9.
Actinomyceth polyvalent a vaccine to be inject to the patient:
A. 1 time per one week.
B. 2 times per one week.
C. 2 times per one week.
D. Each day.

C. Tasks for self-control:
1. The patient has addressed with the complaints to dense formation on a skin auriculo-masticatory region, which is gradually increased and is condensed. An insignificant pain in the region of the locus. Objectively: on a skin of auriculo -
masticatory region formation, wooden of density, skin above it cyanotic of colour. At palpation - insignificant morbidity.

1. To make a preliminary diagnosis.
2. What additional methods of examination necessary for an establishment of the final diagnosis?
3. With what diseases it is necessary to carry out differential diagnostics?

2. To the patient 51 years, suffer on subcutaneous the form actinomycosis cheek and submandibullaris of regions at the left.

Questions:
1. Name the basic clinical signs not complicated actinomycosis.
2. Name laboratory methods of diagnostics directed on revealing actinomycosis.
3. What clinical signs complicated actinomycosis of maxillo-facial region?
4. With what diseases it is necessary to carry out differential diagnostics of the given disease?
5. What you know the circuits of treatment actinomycosis with the help actinolysat?


Basic:
2. Hupp JR, Williams TP, Vallerand WP: The 5 minute clinical consult for dental professionals PDA, Baltimore, 2002, Williams & Wilkins

Additional:

Methodical recommendations is prepared by docent Rezvina Ye.Yu.
STANDARDS OF ANSWERS.

Tests:
1-D; 2 - A; 3 - C; 4 - C; 5 – C.

Standards of answers to a problem:
1. Subcutaneous-intermuscullary form of actinomycosis.
2. Making skin-allergic test with actinolyzate.
3. Abscess auriculo-masseterica region, tuberculosis.