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Suppurative diseases of extensive cellular spaces and glandular organs

- Cellular space (Spatium cellulosum) – is the space between various anatomical formations, which contains of cellular tissue with various quantity of adipose tissue.

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Subpectoral phlegmon

- is an acute purulent - phlegmonous inflammation of connective tissue, which is situated between pectoralis major and pectoralis minor.
- The development of a phlegmon of chest may be:
  - - as a result of the diffusion of inflammatory process from axillary zone (hydradenitis, furuncle);
  - - as a result of the diffusion of inflammatory process from the radial side of a forearm;
  - - after the injuring of chest;
  - - as a result of the suppuration of places of fractures of ribs, osteomyelitis of ribs;
  - - as a result of the diffusion of a pus from pleural cavity (at prolonged drainage of pleural cavity and mediastinum).

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Clinical manifestations

- 1. General symptoms of intoxication with high temperature, fever, the impairments of respiratory, cardiac activity and consciousness;
- 2. Local symptoms: brachialgia, abduction of hand and the sensitivity in subclavial zone at the palpation, in which an edema is possible to see.
  - The strong pain at passive movement in shoulder joint is characteristic sign.
  - The thrombophlebitis of v. cephalica can develop.
  - The diffusion of purulent process on a thoracal wall is possible at the progressing of process, the degree of local symptoms is enlarged in these cases.

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Treatment

- in serous stage is conservative. Operative treatment - is a dissection of phlegmon, an removal of necrotic tissues and pus, a drainage of phlegmon.
- Dissection of a skin is carry out by two incisions: under clavicle and on lower internal edge of major pectoral muscle.
- The drainage can be carried out by two methods:
  - 1. Dermal wound (skin incision) is sutured and the lumen is drained by biforate tube drain with the use of irrigating (= flowing) treatment. It is a method of the closed and aspiration drainage.
  - 2. Dermal wounds (skin incision) do not sutured. Loose tamponade of lumen by napkins, with antiseptic solutions or unguentum, is carry out. It is the open method.

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Mediastinitis

- is an inflammation of cellulose of a mediastinum.
- Mediastinitis is divided (with the count of anatomical constitution) on front and back mediastinitis, each of this form can be upper, medium and lower.
- mediastinitis is developed as a result of diffusion of an infection in cellulose of mediastinum at corrosive burns of esophagus; damages of esophagus, trachea and bronchuses; after the operations on the organs of mediastinum, on lung; after endoscopic operations.

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Clinical manifestations

- quick development of general and local symptoms.
- Disease is developed as an acute and sudden disease from the increase of temperature (up to 39-40 degree), fever of hectic character with chill and profuse perspiration.
- Shortness of breath, tachycardia and the decrease of arterial pressure are observed early.
- The symptoms of serious intoxication are developed.

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local symptoms

- are different
- There are: dysphagia, dyspnea, persistent cough, change of voice and hoarseness, cardiac arrhythmia, hiccup, paresis of gastrointestinal tract.
- Hypodermic emphysema on a neck is developed after the perforation of hollow organs.

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front mediastinitis

- - A throbbing pain behind sternum, which is increased at tapping on it and at inclination of head,
- - An edema in ranges of sternum and the tumescence in jugular zone,
- - The signs of a compression of superior vena cava.

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back mediastinitis

- - The throbbing pain in chest, which is irradiated in interscapular range and increased at the pressure on thoracal vertebrae, at a swallowing and breath,
- - An edema above clavicle and the appearance of crepitation,
- - A muscular rigidity and signs of a compression of v. azygos and v. hemiazygos (the dilatation of intercostal veins, an appearance of an exudate in pleural cavity and pericardium).

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Complications of a mediastinitis

- pneumothorax,
- pyopneumothorax,
- purulent pericarditis,
- peritonitis,
- abscess of lung or brain.

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Treatment

- is conservative and operative

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Conservative treatment

- Antibacterial therapy,
- - Correction of electrolytic balance,
- - Correction of proteins and vitamins,
- - Symptomatic therapy.

Operative treatment

- is a dissection of phlegmon, an removal of pus and drainage of phlegmon. The basic types of mediastinotomy are following:
  - - Cervical,
  - - Transsternal,
  - - Transdiaphragmatic,
  - - Out of pleural cavity,
  - - Transpleural.
- It is necessary to use the aspiration drainage.
- It is necessary to carry out mediastinotomy and gastrostomy (for a feeding of the patient), if the mediastinitis is developed after the perforation of esophagus.

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Paranephritis

- is an inflammation of pararenal cellulose tissue
- Microbe agent at paranephritis in most cases (up to 70 %) – is staphylococcus, less often streptococcus, gonococcus.
- is a complication of purulent inflammatory process in kidney (pyonephrosis, purulent pyelonephritis), at which the infection immediately extends on paranephral cellulose tissue.

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Clinical manifestation

- Disease begins with a fever, high temperature and a pain in lumbar and subcostal ranges.
- Character of a pain can remind an attack of renal colic.
- General asthenia is developed. Losses of appetite, meteorism and constipation are observed.
- The temperature becomes hectic or subfebrile in 3-4 days.
- The state of patients are serious, intoxication is increased. The pain in lumbar region is increased at deep breathing.
- The dense tuberous formation, which is reminded a tumour, is found out at the palpation in range of kidneys.

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Signs

- The kidney is displaced down and may palpated at the upper paranephritis.
- Frequently the inflammation is diffused on subphrenic cellulose and the exudate in pleural cavity is formed.
- The muscle contraction in a hip joint (psoas-symptome) is developed at back and inferior paranephritis.
- The palpation of range of kidneys in this case is painful, Pasternaskyi's sign is positive.

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Additional diagnostic methods

- X-ray examination,
- ultrasonic diagnostics
- computer tomography.

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treatment

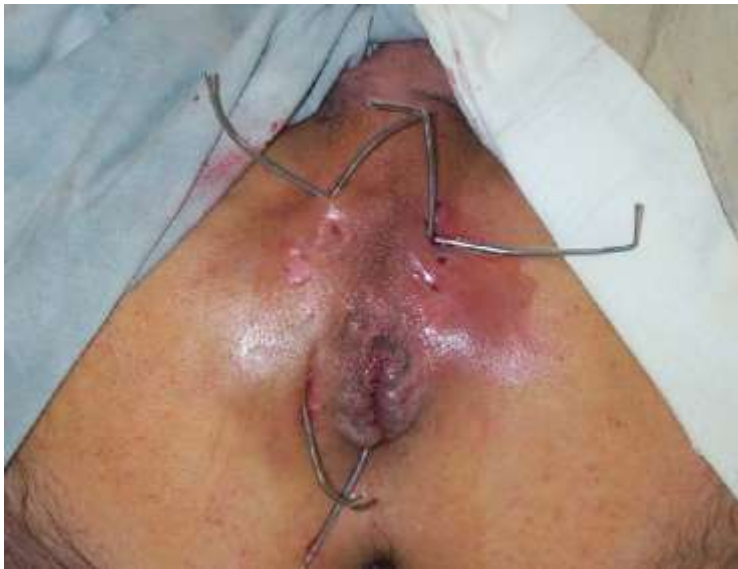
- Operative treatment is carried out at the formation of an abscess.
- There are dissection and drainage of a purulent cavity.
- The incisions, which are outside the abdominal cavity, lumbotomy are used for the dissection of abscess, when the source of purulent process is uncertain.
- There are back-lateral and back-medial incisions.
- Nephroectomy carry out at purulent necrosis of kidney

Paraproctitis

- Paraproctitis is an inflammation of perirectal cellulose (cellulose around rectum and anal zone).
- This is one of the most often proctologic diseases. Disease is developed at men more often

acute

Chronic with fistulae



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Ethiology

- The microbial agent – is mixed microflora (more often).
- These are various combinations of staphylococcus, streptococcus, enterococcus

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Pathogenesis

- The basic pathogenetic mechanism – is the infiltration of an infection into pararectal cellulose tissue.
- The infiltration of infection may be following:
  - - Through anal fissures,
  - - Through inflamed hemorrhoid,
  - - Through damages of a mucosa of rectum,
  - - Through the zone of anal pruritus,
  - - From the organs near rectum, in which inflammatory process are developed.

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Classifications

By the localization:

- - Subcutaneous – perianal abscess,
- - Submucosal,
- - Ischiorectal – the abscess, which is localized in ischiorectal cellulose tissue,
- - Pelvirectal – the abscess, which is localized in pelvirectal cellulose tissue,
- - Retrorectal – the abscess, which is localized in retrorectal cellulose tissue.

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Clinical manifestation

- - General weakness,
- - Headache,
- - Fever,
- - Chills,
- - Increasing pulling pains in rectum, perineum or pelvis.
- - constipation,
- - tenesmus (false urge to defecate),
- - dysuria.

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outcomes

- Inflammatory process diffuses on the adjacent tissues and may be the break-through of pus in rectum, on a skin and then a state of the patient is improved.
- Three outcomes of disease may be after the dissection of the abscess. There are:
  - 1. The formation of a fistula of rectum (the development of chronic paraproctitis).
  - 2. The development of relapsing paraproctitis with periodic exacerbations.
  - 3. Convalescence.

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Treatment

- Anti-inflammatory, conservative treatment (antibiotics, microclysters with solution of colloid silver) is carry out in early stage of an acute paraproctitis, when the symptoms of purulent necrosis of tissues are absent;
- a sparing diet with the exception of products, which are stimulated the mucous of gastrointestinal tract, is appointed.

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Operative treatment

- is performed after the formation of the abscess (the dissection and a drainage of purulent cavity).
- It is necessary to know the features of the performance of surgical treatment in these cases:

  - Operation is carried out only after a cleansing enema,
  - Operation is carry out under narcosis in all cases,
  - Reception of fluid since 1 postoperative day,
  - Feeding of the patient begin only with 3-4 day.

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Parotitis

- is a purulent inflammation of parotid gland.
- The purulent parotitis is developed at diffusion of microbes from oral cavity in parotid gland through parotid duct.
- Two basic factors of development are defined:
- - the impairment of a process of the excrete of spittle (at anhydrous patients, at infectious diseases)
- - the decrease of protective forces of an organism.

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Morphological changes

- - An edema of a tissue,
- - A hyperemia of a tissue,
- - A infiltration of adenouse tissue,
- - A swelling of epithelium of ducts,

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Clinical manifestation

- 1. Appearance of sense of dryness in a mouth,
- 2. A tumescence in range of gland, which is enlarged and diffused on all parts of the face,
- 3. Pains in range of gland, which are increased at nutrition,
- 4. Impairment of mastication,
- 5. Impairment of general state of the patient,
- 6. The increase of temperature up to 39-40 degrees,
- 7. The skin above the gland become red and thinning,
- 8. Strong pain, dense infiltrate and fields of fluctuation - at the palpation,
- 9. The edema and a hyperemia of a mucosa and the excrete of pus from an ostium of parotid duct - in oral cavity.

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complications

- 1. A bleeding from arrosive vessels, which are placement in a tissue of a gland, or from carotid artery (it is dangerous for the patient's life),
- 2. The development of a phlegmon of peripharyngeal space,
- 3. The development of penetrating phlegmons of neck and mediastinitis.
- 4. The formation of fistulas.

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Treatment

- Treatment depends on a stage of disease. Conservative treatment is ordered at acute serous parotitis. There are used:
- 1. Antibiotics (intramuscular and in a duct of a gland),
- 2. Physiotherapeutic procedures,
- 3. Proteolytic enzymes,
- 4. Novocainic blockage.

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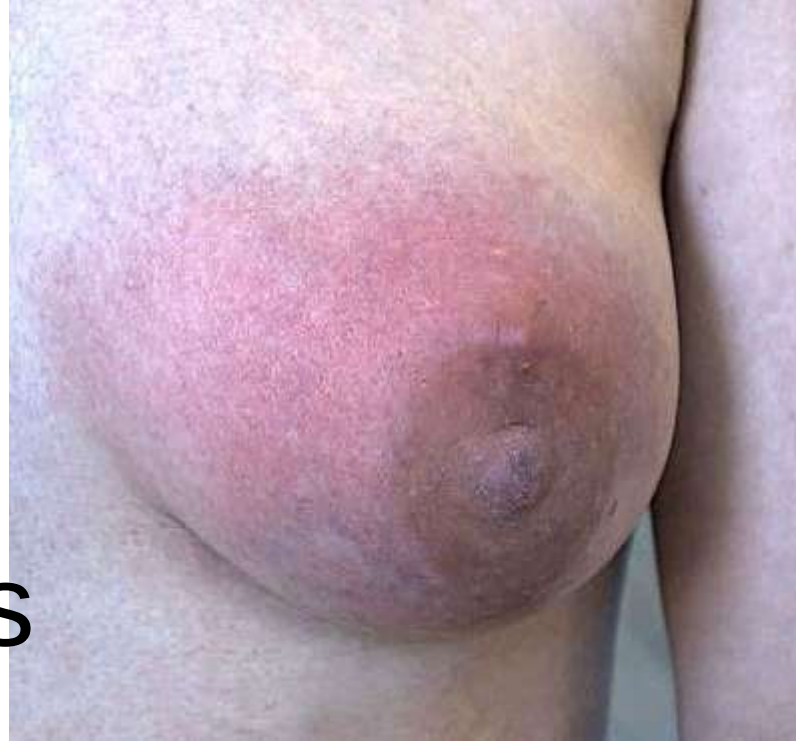
Operative treatment

- is carried out at the development of purulent process.
- Operation – is the opening of abscess and the drainage of purulent cavity.
- It is necessary to remember, that performance of operation is dangerous by damage of branches of nerve facial. This fact is necessary for taking into account at a choice of a place, a direction and lengths of an incision.

Prophylaxis of the development of parotitis

- 1. Care of the oral cavity,
- 2. Stimulation of salivation,
- 3. Normalization of volume of a fluid in an organism of the patient.



Mastitis

- Is an inflammation of the parenchyma and interstitial tissues of the breast.
- Acute mastitis is generally encountered in breastfeeding women, during the first two weeks after childbirth (lactating mastitis)

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Classification of mastitis

- serous form.
- Infiltrative form.
- Suppurative-destructive form:
  - a) breast abscess;
  - b) phlegmonous mastitis;
  - c) gangrenous mastitis

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Ethyology

- The microbial agent - is more often a staphylococcus (82 %). There can be various combinations of microbial agents.
- The intrahospital (hospital) infection has important value. The mastitis, in these cases, can develop in maternity home or in the first days after the discharge from a hospital.

The basic pathogenetic mechanism

- is the infiltration (diffusion) of the infection through the nipple cracks. Factors, which are promoted the development of mastitis, are following:
- 1. Presence of the nipple crack,
- 2. Absence of hygienic actions and a care of the mamma,
- 3. Accumulation of milk,
- 4. Decrease of immune reactivity of an organism of the woman in the first weeks after labor.

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lactostasis

- Disease begins from lactostasis (acute accumulation of milk).
- Lactostasis is developed before inflammatory process.
- The augmentation and a strain of a mamma and the sense of gravity are observed.
- Changes of inflammatory character and the symptoms of intoxication are absent.
- Milk is excreted easily, the decantation is painless and brings the satisfactory state of health.
- Temperature of a body is 37.2 - 37.5 degrees.
- The regular decantation of milk normalizes a state.

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Pathophisiology and symptom

- If pyogenic microorganisms enter the breast with congestion, then after 2-3 days the breast becomes inflamed which sets the stage for the serous phase of mastitis.
- The condition is of sudden onset with a rise in body temperature, sweating, weakness, and severe pain in the breast.
- The breast is found to be enlarged, tender on palpation, and the area of infiltration is not distinct.
- Milking is painful and does not bring any relief.
- Blood leucocytosis is up to $10\text{-}12x10^{9}$.
- The transition of early forms of mastitis into purulent phase is characterized by an increase in intenity of both local and general symptom of inflammation. Body temperature is constantly high or gectic.

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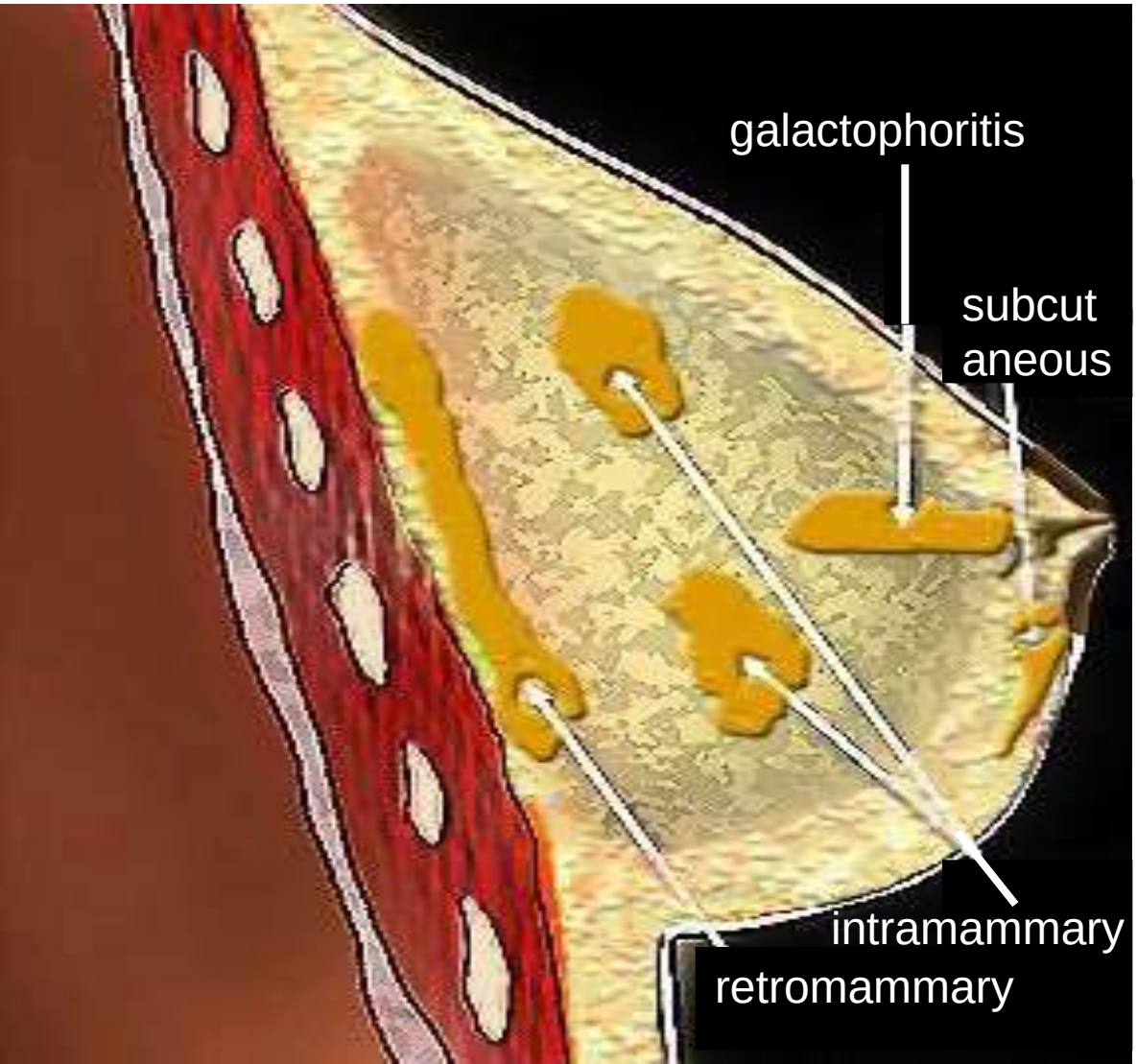
Localization of abscesses



- Classification of abscesses by the localization :
- 1. Abscess of subcutaneous fat;
- 2. Subareolar abscess;
- 3. Intramammary abscess;
- 4. Retromammary abscess.
- 5. Galactophoritis

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Treatment

- Treatment of the initial stages of mastitis is conservative, and of the purulent forms — surgical.
- As soon as signs of breast congestion are noticed, the breasts should be supported in a raised position with either an immobilization bandage or brassiere that do not squeeze or press on the breasts but rather support them.
- Using a breast pump the breasts are evacuated of the milk; breast-feeding should be continued, fluid intake is li-mited, oxytoxin and nospani are given.
- Antibiotics are used in the case of serous and infiltrative mas-titis
- The breasts must be milked constantly to prevent congestion.
- In severe cases of mastitis it is recommended to suppress lactation by Parlodel or Agalates administered

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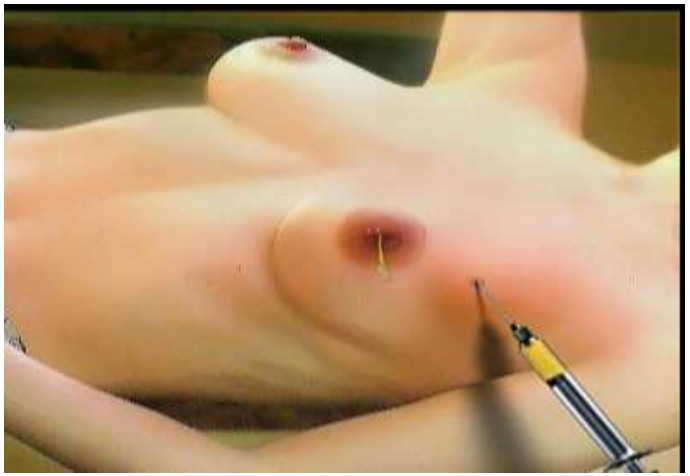
Diagnosis of destructive forms

Diagnostic puncture or ultrasound investigation for diagnostic of destructive forms is used



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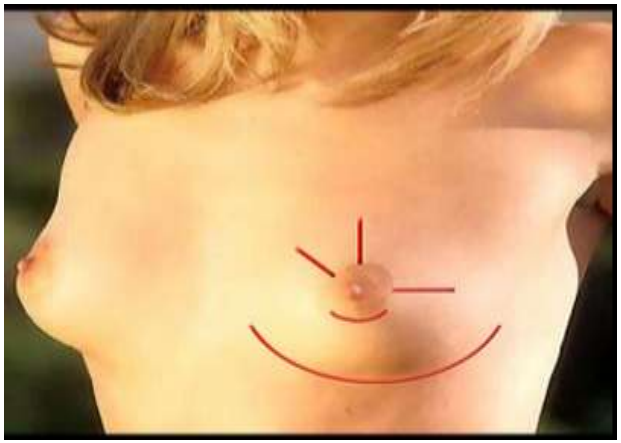
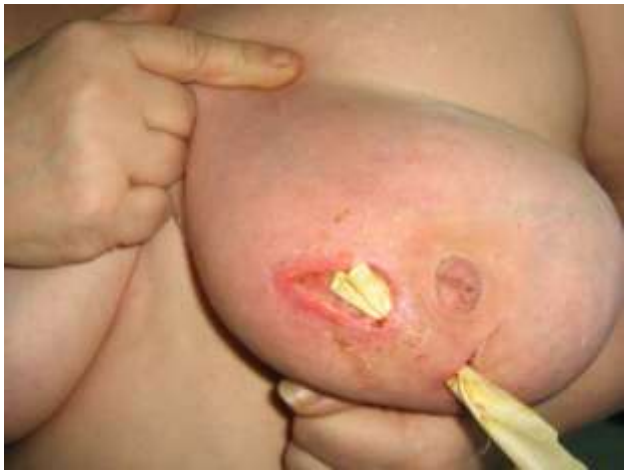
incisions

- Features of the performance of the operation – is the use of various incision (depends on localization of an abscess). It may be:
- - Radial incision, which do not achieve up to areol on 1 cm.,
- - Incision on inferior transition fold,
- - Paraareolar incision.





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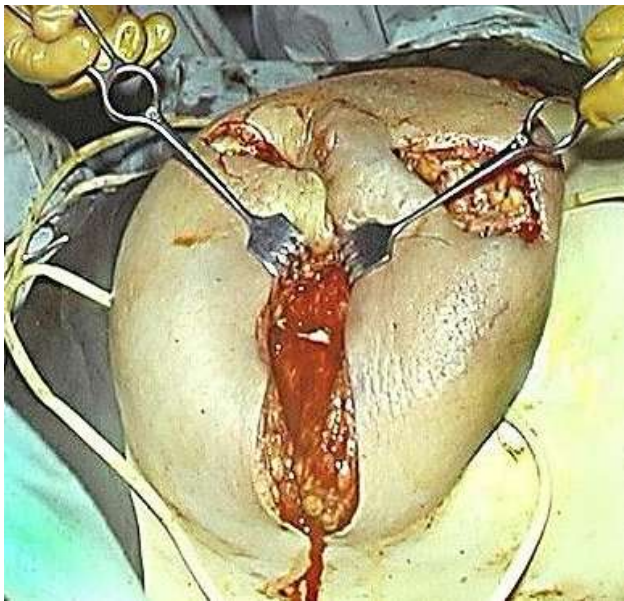
Purulent mastitis

- is an indication for surgery, which is done under general anesthesia; it is only in the case of superficially located small abscesses that surgery can be done under local anesthesia
- Wide deep incisions are made on the breast; all the pus and necrotic tissues are evacuated
- Intramammary lesions are opened through radial incisions.
- After the pus has been evacuated, the cavity is examined using a finger, opening at the same time the various lacunae, hydrogen peroxide solution is used to wash or irrigate the cavity
- Then under adequate lighting the cavity is examined visually with the wound edges held open by retractors, while pressing on the breast.
- If it is found that some pus is entering the wound from a deeper area, then that opening is widened up to join the main cavity.
- All necrotic tissue lying loose in the abscess cavity is excised and removed. With several abscesses on the same breast, they are opened with separate incisions.



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Retromammal abscesses

- Retromammal and deeply-seated intramammal abscesses are drained through semilunar incisions made through the lower infra-mammary fold.
- In this way the breast is separated from the pectoralis major muscle. Intramammal abscesses are drained from their back, the cavity is drained and the resulting wound is sutured leaving the drainage site with the tubes.
- This method of incision and drainage prevents damage to the intralobular milk ducts while providing a good drainage of pus and necrotic tissues and at the same time giving a good cosmetic result.

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chronic mastitis

- In localized forms of acute mastitis and especially in cases of chronic mastitis, the focus of infection can be excised within healthy tissue and firm sutures applied with a small drain inserted for the instillation of antibiotics.
- Treatment of the wound after incision and drainage is done taking into consideration the stage of the wound process. The use of secondary sutures cuts the healing time and improves the cosmetic results of the operation.