

# Adnexitis

**Adnexitis** is inflammation of the fallopian tubes and ovaries. It is the most common form of gynaecological inflammation, accounting for up to 80% of them. Usually both sides are affected at the same time. It mainly affects women between the ages of 20 and 30.

## Pathways of infection

### 1. Ascendant:

- Intracanalicular - through hollow organs (vagina, uterus), facilitated by menstruation, childbirth, abortion, intrauterine procedure;
- Lymphogenic or haematogenous - from the throat and uterus by lymph or blood to the fallopian tube or ovaries.

### 2. Descending:

- by direct contagion - appendicitis, etc.;
- haematogenously from distant foci.

## Acute salpingitis

### Clinical picture

- Sudden onset, severe pain in the lower abdomen;
- bloated abdomen;
- signs of peritoneal irritation;
- alteration of general condition;
- fever, nausea, vomiting;
- often purulent discharge from the vagina;
- enlarged uterus, palpation painful;
- adnexa gradually swollen and tender to touch;
- extremely painful to move the uterus by grasping the cervix;
- increased sedimentation and CRP.

### Pathogenesis of acute inflammation

#### Endosalpingitis

Endosalpingitis arises from the ascending spread of inflammation from the uterus to the lining of the fallopian tube. Microbes damage the epithelium with toxins, serous exudation with leukocytes occurs, the exudate turns into purulent (purulent) inflammation. The mucosa is oozing, congested, the wall of the fallopian tube is swollen, the effusion flows into the abdominal cavity to the pelvic peritoneum. Endosalpingitis may heal spontaneously, but adhesions, blind trunks and even complete obturation of the tube occur.

#### Salpingitis

Salpingitis is more common than endosalpingitis, it occurs when inflammation spreads deeper into the wall of the tube. In the wall, small abscesses form, algae stick together, effusion accumulates in the fallopian tube.

#### Sactosalpinx

The sactosalpinx is formed by closing the abdominal orifice of the fallopian tube. The fimbriae, which are drawn inside the ampulla during inflammation, are glued together. This form then heals by scarring with obliteration of the tube lumen and closure of the abdominal ampulla. If the infection is lymphogenous, the muscle is primarily affected, the mucosa not so much, so the tube may then remain patent.

#### Pyosalpinx

If purulent effusion accumulates in the closed tube, pyosalpinx is formed.

#### Hydrosalpinx

Hydrosalpinx is the name given to a fallopian tube whose lumen is obliterated and filled with serous fluid. It may be a condition after pyosalpinx, when with the retreat of inflammation the pus is absorbed, the contents of the tube are then turbid. Hydrosalpinx can also arise otherwise - if there is inflammation in the vicinity (for example, appendicitis). Reactively, the fimbriae close and glandular secretion accumulates in the tube. The tube enlarges, the walls become thinner, the mucosal lining disappears under pressure. If the uterine orifice is not adequately lined, the contents of the hydrosalpinx may sometimes empty into the uterus, this condition is called **hydrops tubae profluens**.

#### Perisalpingitis a perioophoritis

It is a reaction of the surrounding area (peritoneum) to inflammation of the fallopian tube and ovary. In the case of perisalpingitis, the peritoneum on the tube is affected. The oozing exudate causes peritonitis circumscripta. On the surface of the ovary, it is perioophoritis. The inflamed and adjacent organs tend to adhere and an **acute inflammatory adnexal tumor** develops.

## Chronic salpingitis

Chronic inflammation often follows the acute stage, especially when it is undertreated or absent. It may also be a consequence of scarring changes after the acute inflammation has healed. Persistent difficulties are caused by scarring of the adnexa or their adhesions with other organs. Chronic inflammation may last for months to years and is a common cause of infertility.

### Clinical picture

- Uncharacteristic pain in the lumbar spine;
- pain during sexual intercourse;
- constipation, flatulence;
- dysmenorrhoea;
- irregular menstrual bleeding.

### Pathogenesis of chronic salpingitis

#### Sactosalpinx

The tube is thickened, the abdominal orifice closed. Usually the tube is drawn to the uterine edge as a rigid bumpy resistance, thus forming a **chronic inflammatory tumor** (it is less painful, better circumscribed).

#### Occlusio tubae

It is found in 10% of women after one, 25% after two and 50% after three or more attacks of acute inflammation. In incomplete obliteration, sites for extrauterine pregnancy are created.

#### Chronic adhesions

Chronic adhesions can cause adhesions of the uterus with the intestines, with the omentum, often resulting in fixed retroversion and retroflexion.

## Pathogenesis of oophoritis

Inflammation of the ovary is usually associated with inflammation of the tube. A separate oophoritis arises from the penetration of microbes by lymphatics from the cervix or uterus.

#### Abacterial oophoritis

It can arise as a complication of parotitis.

#### Perioophoritis

In ascending infection, sticky fibrinous plaques form on the surface of the ovary. Fibrinous plaques on the ovary prevent ovulation and are one of the causes of cystic degeneration of the ovary.

#### Pyovarium

If the infection reaches the ovary by lymph or hematogenously, small abscesses form, which gradually merge into a bulky pyovarium. It usually adheres to its surroundings and is immobile.

#### Tuboovarian abscess

In large adhesions, the ovarian abscess may extend into the tube to form a tubo-ovarian abscess. If the ovarian abscess fuses with the hydrosalpinx, a **tuboovarian cyst** is formed.

## Clinical course of adnexitis

### 1. Acute inflammation:

- prodromal stage - nausea, increased temperature to fever;
- pain in the lower abdomen (up to colicky);
- with irritation of the peritoneum - constipation, urge to urinate;
- if the inflammation begins at menstruation - bleeding is greater and prolonged;
- laboratory findings - leukocytosis, left shift, FW rising, CRP rising;
- Examination - palpation is painful, especially uterine movements, palpable swelling next to uterus, painful Douglas space on palpation over posterior vaginal wall.

### 2. Subacute inflammation:

- relieved soreness - dull character, subfebrile, everything is milder (pain on palpation, FW, leukocytosis);
- at this stage we often find hydrosalpinx or chronic inflammatory adnexal tumor.

### 3. **Chronic inflammation:**

- atypical symptoms - pain in the sacrum and lower abdomen (especially after exertion or cold), painful menses;
- often dyspareunia;
- general reaction is absent (temperature, increased FW).

## **Diagnosis and differential diagnosis**

1. With right-sided localization, we must think about appendicitis, pyelonephritis, Crohn's disease.
2. Bilateral localization - tubal abortion, hydrosalpinx torsion, adnexal torsion, cyst torsion. Sometimes there is great subjective discomfort, but palpation findings do not correspond to this. This is pelipathia (pelvic pain). Pelipathy includes a wide range of symptoms - dysuria, dyspareunia, obstipation, etc. The main diagnostic method of adnexitis is ultrasonography, followed by laparoscopy or laparotomy.

## **Prevention and treatment**

### 1. **Prevention**

- It is important to treat childhood fluorosis and other diseases, instill proper hygiene habits, explain the importance of hygiene especially during menstruation, warn against colds, promiscuity.

### 2. **Treatment of acute inflammation**

- Early diagnosis is essential, treatment should be intensive and comprehensive;
- hospitalization, broad-spectrum ATB (must destroy anaerobes), ice on the abdomen, liquid diet;
- check KO, CRP, palpation;
- throat swabs before starting ATB treatment (in 2/3 of cases we detect the causative organism);
- in the young, we often combine ATB with corticosteroids (prevent tube occlusion);

### 3. **Treatment of subacute and chronic stages**

- Support of infiltrate resorption - e.g. by short-wave diathermy;
- spa treatment - peat wraps, baths, peat vaginal tampons;
- Surgery.

## **Links**

### **Related articles**

- Fallopian tube
- Non-cancerous diseases of the vagina
- Malignant tumours of the uterine body

### **Literature used**

- ROB, Lukáš – MARTAN, Alois – CITTERBART, Karel. *Gynekologie*. 2. edition. Praha : Galén, 2008. 390 pp. ISBN 978-80-7262-501-7.
- Kvadruplety vypracovaných otázek podle studijních materiálů J. Beneše, L. Mikšíka, elearningu a knihy gynekologie a porodnictví / Martius 2005 /.