«APPROVING»
on the sitting of chair of obstetrics and
gynecology №1 of HSEEU “UMSA”
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gynecology №1
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METHODICAL POINTING
for the independent work of students for preparation to practical lesson

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<th>Educational subject</th>
<th>Gynecology</th>
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<td>Modul №</td>
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<tr>
<td>Subject of lesson</td>
<td>Benign tumors of women’s reproductive organs.</td>
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<tr>
<td>Course</td>
<td>IV</td>
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<td>faculty</td>
<td>Foreign students training faculty (medical)</td>
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Poltava – 2019
**Benign tumors of women’s reproductive organs.**

1. **Rationale:** Benign pelvic tumors are the result of aberrant development, physiological variation, or growth disorders. Therefore, knowledge of the development, growth, and physiology of the pelvic tissues forms an important background for understanding benign tumors. These common tumors cause significant morbidity for women and they are considered to be the most common indication for hysterectomy in the world; they are also associated with a substantial economic impact on health care. Uterine myomas cause several reproductive problems such as heavy or abnormal uterine bleeding, pelvic pressure, infertility, and several obstetrical complications including miscarriage and preterm labor. According to the U.S. National Institutes of Health (NIH), 20-25% of women of reproductive age have fibroids. By the age of 50, up to 80% of black women and up to 70% of white women have fibroids. Uterine fibroids are most common in women who are in their 40s and early 50s, although some women may develop fibroids at a younger age. At least 25% of women have uterine fibroids which can cause problems. Many women with fibroids never have a problem and never know they have a fibroid. Benign ovarian tumors most commonly occur in women of childbearing age. They occur in about 50 percent of women with irregular menstruation and in about 30 percent of women with regular menstruation. Benign cystic teratomas are quite common. They represent 70% of benign ovarian neoplasms in women up to age 40 years. Between age 40 and 50, they represent 40%; between age 50 and 60, they represent 20%. They comprise 15% of benign ovarian tumors in the seventh decade of life. They commonly consist primarily of ectoderm and mesoderm.

2. **Objectives:**
   - To analyze the risk factors with benign tumors of the female genital organs.
To explain the pathogenesis of the development of benign tumors of uterus and ovary, taking into account the anatomical and morphological and physiological features of the female genital organs.

To suggest theories of the occurrence of benign tumors of the uterus and ovaries.

To classify benign tumors of the uterus and ovaries, taking into account their histological structure, localization, clinical symptoms.

To interpret features of clinical picture in benign tumors of the uterus and ovaries, taking into account their histological structure and localization.

To make the analysis data of clinical, laboratory and instrumental methods of examination of patients with benign tumors of the female genital organs.

To make up the models of a typical clinical case of uterine fibroids and functional ovarian cysts.

3. The basic level of expertise, skills, abilities, required for learning the topic (interdisciplinary integration)

<table>
<thead>
<tr>
<th>The name of the previous disciplines</th>
<th>Acquired skills</th>
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<tbody>
<tr>
<td><strong>Histology</strong></td>
<td>Histological structure of the cervix, vulva and endometrium in normal and in pathological conditions.</td>
</tr>
<tr>
<td><strong>Normal Physiology</strong></td>
<td>Physiological changes occurring in the hypothalamic-pituitary-ovarian system of women and target organs of the sex hormones action at different ages.</td>
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<tr>
<td><strong>Microbiology, Immunology</strong></td>
<td>Specific and nonspecific protective factors of FRS, antiviral immunity.</td>
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<tr>
<td><strong>Pathological Physiology</strong></td>
<td>Hormonal changes in the body during the menstrual cycle and disorders of the microbiota of the female reproductive system.</td>
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<tr>
<td><strong>Operative Surgery</strong></td>
<td>The main types of surgery on the female genital.</td>
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4. **Tasks for independent work in preparation for the lesson and in class.**

4.1. The list of the basic terms, parameters, characteristics which the student should master at preparation for employment:

<table>
<thead>
<tr>
<th>The term</th>
<th>Definition</th>
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<tr>
<td><strong>Surface epithelial tumors –</strong></td>
<td>these tumors begin in the cells lining the surface of the ovary. It is the most common type of ovarian tumor.</td>
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<tr>
<td><strong>Stromal tumors –</strong></td>
<td><strong>Stromal tumors</strong> – these benign and malignant tumors begin in the part of the ovary that manufactures female reproductive hormones. It is very rare and when cancerous is considered a low-grade cancer.</td>
</tr>
<tr>
<td><strong>Germ cell tumors –</strong></td>
<td>these tumors begin in the cells that develop into eggs. The majority of germ cell tumors are benign, but sometimes can develop into cancer. These are most common in younger women and, if treated early, fertility can be preserved.</td>
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<tr>
<td><strong>A fibroid</strong></td>
<td>is a non-cancerous growth (tumor) made up of mostly fibrous tissue, like muscle. Fibroids grow in or around the uterus (womb). They are the most common type of growth in a woman's pelvic area</td>
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<tr>
<td><strong>Location of fibroid:</strong></td>
<td></td>
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<tr>
<td>fibroid submucosal</td>
<td>Inside (cavity) the uterus (under endometrium)</td>
</tr>
<tr>
<td>fibroid subserosal</td>
<td>outside the uterus (under perimetrium)</td>
</tr>
<tr>
<td>fibroid intramural</td>
<td>in the wall of the uterus (in myometrium)</td>
</tr>
<tr>
<td>fibroid -peduncles.</td>
<td>grow out from the uterus on stalks</td>
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</tbody>
</table>
Cystomata are tumor-like (non-blastomatous) formation of mainly retention nature from a natural cavity.

Cystoma is a true tumor (blastomatous), which grows due to proliferation of cells.

The pedicle of an ovarian cyst shows the relations of the ovarian vessels, the ovarian ligament and the fallopian tube, together with the anastomosing branch of the uterine artery.

### 4.2 Theoretical questions for the lesson:
1. Pathogenetical variants of development of uterine myoma.
2. Classification of uterine myoma.
3. The main clinical symptoms peculiar for uterine fibromyoma.
4. Examination methods to diagnose uterine myoma.
8. Classification of benign ovarian tumours.

### 4.3 Practical activities (tasks) to be performed on the lesson:
1. Collect general and specific gynecologic anamnesis.
2. Diagnose benign tumors of the uterus.
3. Make up a proper plan of examination to diagnose benign uterine tumours.
4. Prepare a set of instruments to perform diagnostic scrapping of the uterine wall.
5. Make a target biopsy of the uterine cervix.
6. Perform speculum examination, vaginal examination, make the initial diagnostics.
7. Make up an individual plan of treatment of benign uterine tumours.
8. Diagnose benign tumours of the adnexa.
9. Make up a proper plan of examination to diagnose benign ovarian tumours.
10. Perform speculum examination, vaginal examination, make the initial diagnostics.
11. Make up an individual plan of treatment.

4.4 Topic content

**Fibroid** is a commonest benign tumor of the uterus and also the commonest benign solid tumor in female. Histologically this tumor is composed of smooth muscle and fibrous connective tissue, so named as uterine leiomyoma, myoma or fibromyoma.

**Incidence** – at least 20 per cent of women at the age of 30 have got fibroid in their wombs. The incidence of symptomatic fibroid in hospital outpatient is about 3 per cent.

**Etiology** still remain unclear. The prevailing hypothesis is that, it arises from the neoplastic single smooth muscle cell of myometrium. The possible causes are: chromosomal abnormality (rearrangements, deletions), role of polypeptide growth factors, a positive family history is often present. The growth is predominantly oestrogen-dependent tumour. Increased risk factors include nuliparity, obesity, hyperoestrogenic state, black woman, reduced risk multiparity, smoking.
Classification:

A. By the node localization:
   1) **subserous** – growth in the direction of the perimetrium;
   2) **intramural (interstitial)** – growth into the thickness of the uterine wall;
   3) **submucous** – node growth into the uterine cavity;
   4) **atypical** – retrocervical, retroperitoneal, antecervical, subperitoneal, perecervical, intraligamentous.

B. By the node size *(small, medium, and large).*

C. By the node position (in the uterine fundus, body, isthmus, or neck). The uterine body is affected in 95% cases, the neck – in 5%.

D. By the growth form *(false – conditioned by blood supply disturbance and edema, and true – caused by the processes of smooth muscle cells proliferation).*

**Symptoms:**
- Asymptomatic (75%). They may be accidentally discovered by the physician during routine examination or at laparotomy or laparoscopy.
- Menstruation abnormalities. Menorrhagia is the classic symptom of symptomatic fibroid,
- Metrorrhagia or irregular bleeding.
- Dysmenorrhea
- Infertility
- Pain in the lower abdomen
- Abdominal swelling (lump)
- Pressure symptoms
- Abdominal enlargement
- Recurrent pregnancy loss (miscarriage, preterm labour)

**Diagnosis:**
1. Abdominal examination – if the uterus body is enlarged up to 12 weeks of pregnancy, the uterus body may be palpated through the abdomen. It feels firm, more towards hard, surface in nodular, mobility is restricted.
2. Percussion – the swelling is hard on percussion
3. Pelvic examination: the swelling of the uterine. The size of the uterus is evaluated in weeks, according to size corresponding the gestational term. The uterus is not felt separated from the swelling, the cervix moves with the movement of the tumour felt per abdomen, with the exeption subserous pedunculated fibroid. The doctor should evaluate the size, motility, nodularity.
4. Ultrasound and Colour Doppler: uterine contour is enlarged and distorted,
may be hypoechoic or hyperechoic. Transvaginal ultrasound can accurately assess the myoma location, dimensions and volume, is mostly done in case of fibroids less than 12 weeks of gestation.

5. Saline infusion sonography
6. Magnetic resonance imaging – not used routinely for the diagnosis
7. Laparoscopy – it may differentiate a pedunculated fibroid from ovarian tumour not revealed by clinical examination.
8. Hysteroscopy is of help to detect submucous fibroid in unexplained infertility and repeated pregnancy wastage.
9. Uterine curettage – in the presence of irregular bleeding, to detect any co-existing pathology and to study the endometrial pattern, curettage is helpful. It additionally helps to diagnose a submucous fibroid by feeling a bump.
Cervical fibroid. The symptoms are due to pressure effect on the surrounding structures. Anterior cervical – bladder symptoms, posterior cervical – rectal symptoms in the form of constipations, lateral cervical – vascular obstruction, that may lead to haemorrhoids and oedema legs, central cervical – predominantly bladder symptoms.

Treatment – myomectomy, hysterectomy

Differential diagnosis. The fibroids should be differentiated from pregnancy, full bladder, adenomyosis, myohyperplasia, ovarian tumour.

Complications of the fibroids:
- Persistans menorrhagia, metrorrhagia or continued vaginal bleeding that leads to severe anaemia
- Severe intraperitoneal haemorrhage due to rupture of veins over subserous fibroid
- Ischemia or necrosis of the fibroid nodes, leading to peritonitis
- Sarcoma (malignant changes in the uterus)
Management of fibroids

**Scheme. Fibroid management algorithm**

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Fibroids in reproductive age diagnosed during clinical investigation

Further invest. to reveal the pathology that promote fibroid growth and treatment

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confirmed by transabdominal or transvaginal USI

Investig. to reveal the pathology that promote fibroid growth and treatment

---

Symptomatic

Investig. annually or more often

---

Size > 12 weeks

Investig. more often if symptoms appear

---

Pathological hemorrhages

Conservative or operative treatment

---

Pain, constant discomfort

---

Medical management

---

Yes

Yes

---

No

---

Symptomatic

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Successful treatment

---

No

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Transvaginal Hysterosonography

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Transmucous fibroid

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Submucous fibroid

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Surgical treatment (mostly hysteroscopic resection)

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Surgical treatment

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Hysteromyoma may be treated in two ways: conservative (medication) and surgical.

**Medicamental hysteromyoma treatment.** If fibromyoma has been detected, the likelihood of clinical treatment by means of only conservative, even the most modern, methods is very little.

Non-hormonal preparations – mostly symptomatic therapy: hemostatics and spasmolytics, nonsteroid antiinflammatory drugs (in case of pain syndrome), and also measures directed at the treatment of pathological conditions, which might promote hysteromyoma growth (thyroid gland pathologies, inflammatory processes of the genitals), and at metabolism normalization (antioxidants, antiaggregants, polyvitamins, phytotherapy).

Hormonal therapy is the basis of medicamental hysteromyoma treatment – it is a correcting hormonal therapy directed at the reduction of both systemic and local dyshormonemia.

Oral contraceptives do not lead to myoma reduction, but may decrease menstrual blood loss with a considerable increase of hematocrit and other hemogram indices; they may be used for hemostasis.

Progestagens are applied in the complex of medicamental leiomyoma treatment, which is accompanied by hyperplastic processes of the endometrium with the purpose local hyperestrogenism reduction. The doctor uses the preparations, doses, and regimens, which provide the stromal suppression of the endometrium (dydrogesterone 20–30 mg from the 5th to the 25th day of the menstrual cycle, norethisterone 10 mg from the 5th to the 25th day of the menstrual cycle, linestrol 20 mg from the 5th to the 25th day of the menstrual cycle, etc.).

The treatment with gonadoliberin agonists effectively reduces the size of the nodes and uterus, but cannot be used longer than 6 months in connection with the development of medicamental menopause syndrome at durable use.

As for the conservative hysteromyoma treatment, it cannot be viewed as an alternative to surgical treatment. If there are indications to surgical treatment, it should be carried out.
Embolization of the uterine arteries is a promising method of surgical hysteromyoma treatment, it is a little-invasive method of recurrence-free treatment. Since there is no need in pre- and posttreatment, the method is considered independent. Embolization of the uterine arteries in most cases cures hysteromyoma in one day at minimal discomfort for the patient.

**The surgical treatment** may be conservative (in women of childbearing age preference is given to reconstructive surgery) and radical (there is indicated supravaginal uterectomy, the issue of salpingo-oophorectomy and cervicectomy is decided individually).

The surgical treatment brings up a number of questions. First of all one should decide: if the removal of the uterus, ovaries, uterine tubes and neck is complete or partial, what will be the approach of the operation – abdominal, vaginal, or endoscopic.

The extent of the operation depends on the woman’s age, her general condition, concomitant diseases, localization and size of the nodes, condition of the uterine neck and ovaries.

If the ovaries are unaffected in women under 50 years of age, they are not removed in the course of the operation. If there are no changes on the uterine neck (which is proved by colposcopy and cytological screening), it is not removed.

The issue of tubectomy is decided individually during the operation. If hysteromyoma is accompanied by an inflammatory process, the uterine tubes are to be removed. This also concerns myomatous node necrobiosis, purulent melting of the uterine nodes. In all other cases the uterine tubes are to be retained, because tubectomy violates the innervation and blood circulation of the ovaries, which leads to their failure.

**Indications to the operation:**

1. Excessive, protracted or acyclic menstruations, which lead to anemization of the patient.

2. The tumor size of 12 and more weeks, even if there are no complaints
3. The tumor size, which is accompanied by dysfunction of the adjacent organs (renal dysfunction, frequent urination, disturbed defecation act).

4. Rapid growth of the tumor (by 4–5 weeks and more than by 12 months). In such cases a malignant tumor is always suspected.

5. Subserous nodes on a pedicle. Such a node may lead to pedicle torsion, which requires urgent operative intervention.

6. Myomatous node necrosis (node trophopathy suspected).

7. Submucous hysteromyoma. Such myomas cause severe uterine bleedings. Irrespective of the myoma size, such patients require surgical treatment. Small nodes may be removed in the course of hysteroscopy.

8. Intraligamentous nodes, which cause painful sensations as a result of nerve plexuses squeezing and renal dysfunction at urinary tract compression.

9. Nodes, which grow from the vaginal part of the uterine neck.

10. Combination of myoma with other pathological states: ovary tumors, prolapse of uterus, hyperplastic conditions of the endometrium, which are insensitive to hormonal therapy.

11. Combination of myoma with sterility.

The main technique of **hysteromyoma development prophylaxis** is the prevention of the formation of conditions of hormonal homeostasis, which is characterized by local hyperestrogenism onset.

Among special techniques we should mention the following:

a) unwanted pregnancy prevention;

b) systematic fight against chronic stressful occurrences, which promote the correction of pathological and psychosomatic factors on the genitals;

c) early detection and timely correction of lutein insufficiency;

d) full-value therapy of systemic diseases of the uterine appendages;

e) wide use of oral contraceptives and gestagens as a supporting therapy in pathological states violating the hormonal homeostasis of the uterus.
Ovarian Tumors and Tumor-Like Neoplasms

Ovarian tumors rank second in the structure of female genitalia neoplasms, according to different authors, their incidence in recent years makes 6–10 % cases. The incidence of benign ovarian tumors is 70–80 %, and one third of them are tumor-like processes. A peculiarity of ovarian neoplasms is their high propensity for malignization, and the prophylactic and diagnostic work of gynecologists on timely detection of tumors of this localization remains subpar. The histological type of an ovarian tumor is one of prognostic factors of the disease course.

Histological Classification of Ovarian Tumors

I. Epithelial tumors.
   A. Serous, mucinous, endometrioid, mesonefroid, and mixed:
      a) benign: cystadenoma, adenofibroma, superficial papilloma;
      b) related: intermediate forms of cystic adenomas and adenofibromas;
      c) malignant: adenocarcinoma, cystadenocarcinoma, papillary carcinoma.
   B. Brenner’s tumor:
      a) benign;
      b) related;
      c) malignant.

II. Sex cord-stromal tumors.
   A. Granulosa theca cell tumors: granulosa cell tumors, tumors of the thecoma-fibroma group, generalized tumors.
   B. Androblastomas, Sertoli-Leydig cell tumors (differentiated, intermediate, low-differentiated).

III. Lipid cell tumors.

IV. Germinogenous tumors.
   A. Dysgerminoma.
   B. Teratoid tumors (homologous, heterologous).

V. Tumor-like neoplasms and pretumor processes: luteoma of pregnancy, hyperthecosis, follicular cysts, corpus luteum cyst, endometriosis, inflammatory cysts, paraovarian cyst.
So far, there exist diverse terms denoting ovarian neoplasms: cyst, cystoma, tumor, neoplasm, etc. WHO recommends using the following terms: in true tumors – ovarian tumor; in false tumors (retention, inflammatory) – ovarian tumor-like processes.

**Ovarian epithelial neoplasms** consist of one or a couple of types of epithelium in different combinations, mainly of the germinal epithelium. The incidence of epithelial neoplasms is the highest among ovarian tumors (60–70%).

*Serous benign ovarian tumors* have the highest incidence. Macroscopically serous cystadenoma is a round tumor with thin walls, uni- or bicameral, of dense elastic consistency, filled with serous fluid. There are differentiated two forms of serous cystadenoma – smooth-walled and papillary. On the internal surface of the papillary cystadenoma there are neoplasms reminding cauliflower. Such tumors undergo malignization in 25–50 % cases, which should be always taken into account when the treatment method is being chosen.

*Mucinous benign ovarian tumors* rank second according to their incidence among all ovarian tumors. In most cases these neoplasms are large, have a multicameral structure, are filled with jelly-like contents. Unlike serous tumors they secrete mucin – mucus in the form of granules. Malignization of mucinous tumors is observed in 5–17 % cases.

*Endometrioid ovarian tumors* develop from germinal cysts and inclusions localized in the ovaries, or from endometrial implants encased in the ovarian tissue. The tumor consists of epithelium and endometrial stroma. Benign endometrioid tumors are observed rather rarely.

*Related ovarian cystadenomas and adenofibromas* are a transitional blastomogenesis stage and are referred to the group of potentially low-grade tumors; there is no evident invasion of the adjacent stroma. Such a structure of tumors is diagnosed with the help of histological study, however, usually cystadenoma forms have papillary excrescences onto the internal or external surface of the sac.

The structure of *related mucinous tumors* is practically similar to that of benign neoplasms; the borderline structure of tumors is diagnosed with the help of histological study.
*Brenner’s tumor* is referred to the group of epithelial tumors, whose incidence is 0.6–2.6%. The tumor has a mixed structure – a fibroma with epithelial inclusions filled with mucus, mucin, and colloid.

**Sex cord-stromal tumors** are primarily hormone-active, because they consist of ovarian cellular elements, which produce female or male hormones.

*Granulosa cell tumors* consist of granulosa cells, which produce estrogens. Their incidence makes 2–3% in the structure of all ovarian tumors. About 30% granulosa cell tumors have no hormone activity, and in 10% cases their malignization is observed.

*Theca cell tumor (thecoma)* is an estrogen-producing ovarian tumor; malignant forms are observed in 4% cases. Incision of the tumor shows a characteristic appearance – the yellow or orange tissue with whitish streaks.

*Ovarian fibroma* is observed in 2–7% cases of all ovarian tumors. This stromal tumor consists of spindle-shaped cells producing a large amount of collagen. The tumor has no hormonal activity, therefore it is often called a non-functioning tumor. Its shape is round, the consistency is dense, woody, or rocky when calcified.

*Androblastoma* develops from Sertoli-Leydig cells, is referred to masculinising tumors. High-differentiated forms of the tumor are always benign, less homologous ones tend to be malignant.

**Lipid cell tumors** are observed very rarely, consist of cells reminding the structure of the adrenal cortex, and also lutein and Leydig cells. This group of tumors includes hypernephroma, luteoma, masculinoblastoma. In 50% cases they possess androgenic activity.

**Germinogenous tumors** arise from the primordial germ cells of the embryonic gonads and their derivatives.

*Dysgerminoma* is observed with the frequency of 1.5%, consists of cells morphologically similar to the primordial germ cells, usually of solid structure. The tumor is malignant; still, prognosis is rather favorable.

*Teratomas* are tumors arising as a result of differentiation of two or three germinal layers. There are singled out mature, immature, and monodermal teratomas.
Mature teratomas are more frequently observed in the cystic form (dermoid cyst), less frequently – solid form. Dermoid cyst (a more accurate name – mature cystic teratoma) consists of well-differentiated derivatives of all three germinal layers with ectodermal elements prevalence (hair, fat, teeth, etc.). Mature solid teratoma is an infrequent ovarian tumor, whose appearance depends on the structure of all its mature tissue constituents. Mature teratoma is always benign, its malignization is observed very rarely.

Immature teratomas (teratoblastomas) contain immature embryonic structures, are referred to malignant germinogenous tumors относятся. Macroscopy of the tumor may show bones, cartilages, teeth, adipose tissue. Microscopy shows embryonic tissues of different degrees of maturity.

Monodermal teratomas are referred to high-differentiated tumors. They include: ovarian stroma (consisting primarily of thyreoid tissue), carcinoid tumor (consisting of argentaffine cells), epidermoid cyst (lined with epidermis), etc.

**Tumor-like neoplasms and pretumor processes** are retentional neoplasms, which arise as a result of fluid accumulation in preformed cavities and enlarge due to fluid quantity increase and not due to cellular elements proliferation. Tumor-like neoplasms are of dyshormonal or inflammatory nature.

*Follicular cysts* are observed in 30 % tumor-like ovarian neoplasms, originate from ovarian follicles. These neoplasms are unicameral, thin-walled, with smooth surface, filled with transparent contents.

*Corpus luteum cysts* morphologically correspond to the yellow body structure, contain granular and theca lutein cells, their walls are thin, the contents are light or hemorrhagic. These cysts form as a result of an inflammatory process or disturbances of the blood or lymph flow in the yellow body, arise in women with biphase cycle.

*Luteoma of pregnancy* develops in pregnancy from lutein cells and depends on the degree of chorionic gonadotropin stimulation. Luteoma of pregnancy sometimes develops in the 3rd trimester, grows to rather large sizes (up to 10–15 cm), and is found during cesarean section (in such a case one should not remove the ovaries, but conduct resection for histological study). After pregnancy termination such neoplasms undergo involution without assistance.
Hyperthecosis is bilateral inflammatory excrescence caused by ovarian stroma proliferation. Hyperthecosis is connected with endocrine disorders, is dyshormonal ovariopathy.

Inflammatory cysts are a consequence of an inflammatory process of the uterine appendages and are tubo-ovarian tumor-like neoplasms. They resemble a tumor only in outward appearance.

Paraovarian cysts are tumor-like neoplasms, which arise in the epoophoron located in the mesosalpinx. Macroscopically, a paraovarian cyst is round, has a smooth surface, thin walls, and dense elastic consistency.

Clinical presentation. There are no specific signs of ovarian tumors, as well as tumor-like neoplasms. Even if neoplasms are large, patients may note no significant changes in their condition. However, nonspecific symptoms allow suspecting ovarian tumor development. Patients with ovarian tumors may complain of sensation of heaviness in the lower abdomen, dull pains in the lower abdomen and loin. Acute pain arises in tumor pedicle torsion, tumor sac rupture.

Sometimes ovarian tumors are accompanied by constipation, urinary discomfort. If the tumor is rather large, enlargement of abdomen is noted. The same symptom is observed in ascites, which usually develops in malignant ovarian tumor.

If the ovarian tumor is hormone-producing, clinical presentations may be connected with the specific action of the hormones produced by the tumor. In granular cell tumor and thecoma there are observed hyperestrogenism signs (hemorrhages, hyperplastic processes in the endometrium). If such a tumor arises at the juvenile age, there appear signs of precocious puberty; if in the period of menopause, menstrual bleedings may recommence. If a patient has a tumor producing androgenic hormones, she has signs of defeminization or androgenization (ischomenia, hirsutism).

In about 10% cases ovarian fibroma is characterized by peculiar clinical presentation called Meigs’ syndrome: ascites with hydrothorax and anemia.

Ovarian tumors may combine with other diseases, which develop as a result of ovarian dysfunction (uterine leiomyoma, menstrual dysfunction, endocrine sterility,
Diagnosis. Ovarian tumor is diagnosed on the basis of anamnestic data, findings of general, abdomen, and gynecological examination (bimanual vaginal and rectal). Additional investigation methods are usually applied (instrument, hardware-controlled, roentgenological, etc.).

One should pay attention to the history of premorbid conditions and risk factors (early and late menarche, early and late menopause, absence of sexual life and pregnancies, endocrine sterility, condition after ovariectomy or ovariectomy, etc.) and background diseases (ovarian cysts, polycystic ovaries, chronic inflammation of the uterine appendages, uterine tumors, hyperplastic processes in the endometrium, etc.) If there are a lot of risk factors, the patient requires especially thorough and advanced examination.

During general examination the doctor pays attention to the character hair distribution, especially excessive, the time of its appearance.

When the doctor examines the abdomen, he tries to find the signs of ascites; palpation helps to find tumors not only in the lower parts of the abdomen, but also in the epigastric region.

Gynecological examination is conducted when the urinary bladder and bowels are evacuated. This examination may help to find tumors in the region of the uterine appendages and small cavity. One should remember that bimanual examination shows ovarian tumor only if its sizes exceed the physiological parameters of the ovary. Examination helps to find the size of the tumor, its consistency, mobility, character of the surface, location relative to the pelvic organs. Quite frequently, when minimum-size tumors are found, patients are observed during a long time – from a couple of months to a couple of years. It is permissible only due to thorough examination of young women with the help of additional methods (under 25 years of age).

One should also pay attention to the condition of the rectouterine space and posterior vaginal wall, where indurations may be palpated frequently testifying to a malignant process.
When one finds neoplasms reminding ovarian tumors in the region of small pelvis, the most expedient additional method of investigation is transabdominal and transvaginal echography (ultrasound investigation – US). This very technique is to be used to examine women with overweight, or if there is a commissural process in the small pelvis, because adequate bimanual gynecological examination of such patients is impossible.

There are differentiated four echographic types of pelvic tumors: liquid, liquid-solid, solid-liquid, and solid. Ovarian tumors in most cases are referred to the liquid-solid type, which allows giving a diagnosis with a high degree of credibility. In most cases US makes it possible to find the character of the tumor.

Echographic picture of smooth-walled tumors (serous cystadenoma, ovarian cysts) is characterized by the presence of space-occupying lesions of different size (one should keep in mind that cysts do not grow larger than 5–8 cm), round form; the sac thickness is 0.1–0.2 cm. the internal surface of the sac is smooth, the contents of the tumor are homogeneous and anechogenic.

Papillary serous cystadenoma is defined as a uni- or multicameral neoplasm, with internal septa, the contents are liquid, often with fine-dispersed mixture. On the internal surface of the sac one detects papillary projections in the form of parietal structures of different size, of increased echogenicity.

Characteristic signs of mucinous cystadenoma are multiple thick septa, unremovable fine-dispersed meal in the cavity of the tumor of high and medium echogenicity.

In the echogram, tumors of the genital cord stroma usually have the appearance of unilateral neoplasms with predominantly echo-producing internal structure and echo-poor inclusions. These tumors may also have cystoid structure.

Visualization of large tumors with rough surface, irregular shape, especially in case of their bilateral location, makes one suspect a malignant process.

If it impossible to give a diagnosis after bimanual vaginal examination and US, one should resort to endoscopic methods of investigation (laparoscopy), which in most cases may not only a diagnostic, but also a therapeutic manipulation (endoscopic removal of an ovarian tumor).
A reliable method of diagnostics is computed roentgenological tomography, which is not directly connected with roentgen radiation. Computed tomograms allow finding even small tumors (from 1 cm in diameter).

The method of diagnostic aspiration of ovarian tumors using the guidance of US is not recommended because of the risk of violation of sac integrity and dissemination of possible malignant process.

If it is impossible to use high-performance methods of diagnostics (US, laparoscopy) in patients with ovarian tumor suspected, laparotomy is to be applied.

**Treatment.** The therapeutic approach depends on the patient’s age, character of the tumor, risk of malignization.

In most cases ovarian tumor diagnosis is an indication to surgical intervention. If there is a small mobile tumor, endoscopic operation is possible in young women. Otherwise laparotomy is carried out.

When one decides the question of surgical intervention volume, excessive radicalism is inexpedient. If the patient has a tumor-like ovarian neoplasm, it may be removed within the limits of unaffected tissue (resection). When one finds serous ovarian tumors, especially with papillary excrescences, in young women it is expedient to remove one ovary, in patients older than 45 years – both. If the doctor suspects a hormone-producing ovarian tumor, the same measures are undertaken.

In young women with small ovarian cysts (follicular, corpus luteum) observation during 3–6 months is possible with constant ultrasound control in different phases of the menstrual cycle, implementation of anti-inflammatory or hormonal treatment. When the therapy is ineffective and tumor-like neoplasm regress is observed, surgical treatment is indicated, mainly endoscopic operations. Paroophoritic cysts are better diagnosed in the course of surgical intervention, because diagnostics before operation is in most cases complicated. Operation in these cases is brought to the enucleation of the cyst from the intraligamentous space with dissection of the broad ligament leaf; the ovary and uterine tube are preserved.
7. Materials for self-control:

TESTS

1. What ovarian tumour belongs to estrogenproductive tumour and might cause development of hyperplastic process in uterine?
   A. thecoma
   B. fibroma
   C. androblastoma
   D. pseudomyxoma
   E. pseudomucinous cystoma

2. Ovarian tumour on thin pedicle, thin-walled, fullfiled with fatty content, has hair:
   A. fibroma
   B. androblastoma
   C. pseudomyxoma
   D. dermoid cyst
   E. pseudomucinous cystoma

3. What treatment should be prescribed for patient with dermoid cyst?
   A. point puncture with content suction
   B. substitutive hormonal therapy
   C. cystectomy
   D. antibacterial therapy
   E. zoladex

4. Node consistency of uterine fibromyoma depends from:
   A. correlation of parenchyma and stroma
   B. vessels' amount
   C. presence of endometrioid tissues
   D. fatty tissue amount
   E. node size

5. What sign is not typical for proliferative myoma?
   A. plenty of plasmatic cells
   B. plenty of lymphoid cells
   C. atypical growth
   D. fast growth
   E. increased mitotic activity

6. Subserouse fibromyoma node is localizes in:
   A. under peritoneum
   B. under uterine mucous layer
   C. in myometrium
   D. behind cervix
   E. between broad ligament layers

7. Submucous myoma node is localized:
   A. under peritoneum
   B. in myometrium
   C. under uterine mucous layer
D. behind cervix  
E. between broad ligament layers
8. Intramural myoma node is localized:
   A. in myometrium  
   B. under peritoneum  
   C. under uterine mucous layer  
   D. behind cervix  
   E. between broad ligament layers
9. Interstitial myoma node is localized
   A. under peritoneum  
   B. in myometrium  
   C. under uterine mucous layer  
   D. behind cervix  
   E. between broad ligament layers
10. Intraligamentary myoma node is localized:
    A. between broad ligament layers  
    B. under peritoneum  
    C. under uterine mucous layer  
    D. in myometrium  
    E. behind cervix

SITUATIONAL TASKS

1. A 40-year-old woman complains of colic pains in the lower part of abdomen and abundant bloody discharges from genital tract. Last 2 years she had menses for 15-16 days, abundant, with clots, painful. Had 2 medical abortions. In bimanual investigation: from the canal of the cervix uteri - a fibromatous node, 3 cm in diameter, on the thin stem. Discharges are bloody, moderate. Choose the correct tactics.

2. A 32 y.o. woman consulted a gynecologist about having abundant long menses within 3 months. Bimanual investigation: the body of the uterus is enlarged according to about 12 weeks of pregnancy, distorted, tuberous, of dense consistence. Appendages are not palpated. Histological test of the uterus body mucosa: adenocystous hyperplasia of endometrium. Optimal medical tactics:

3. A woman complains of having slight dark bloody discharges and mild pains in the lower part of abdomen for several days. Last menses were 7 weeks ago. The pregnancy test is positive. Bimanual investigation: the body of the uterus indicates for about 5-6 weeks of pregnancy, it is soft, painless. In the left appendage there is a retort-like formation, 7x5 cm large, mobile, painless. What examination is necessary for detection of fetus localization?

4. A 29 year old patient underwent surgical treatment because of the benign serous epithelial tumour of an ovary. The postoperative period has elapsed without complications. What is it necessary to prescribe for the rehabilitational period:
5. A 27 y.o. woman complains of having the disorders of menstrual function for 3 months, irregular pains in abdomen. On bimanual examination: in the dextral appendage range of uterus there is an elastic spherical formation, painless, 7 cm in diameter. USI: in the right ovary - a fluid formation, 4 cm in diameter, unicameral, smooth. What method of treatment is the most preferable?

**List of recommended literature**

**Main**


**Addition**


**On-line resources**

UMSA Academy website http://www.umsa.edu.ua/
Website of the Department of Obstetrics and Gynecology № 1 http://www.umsa.edu.ua/kafhome/kaf_akushgenikology_1/kaf_akushginecology.html
Videos UMSA library website https://biblumsa.blogspot.com/

Methodical guidelines have been drawn up by CMedS As. Professor Krutikova E. I. name surname 

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head of the department professor A.M. Gromova