

Testicular tumors

Testicular tumors are the most common malignancy in men between the ages of 15 and 35. Therefore, they most often occur in the 3rd to 4th decade. The incidence of testicular tumors is 3-6 / 100,000, however, their incidence has been increasing in Europe in recent years. The white population is most affected in Europe and North America.

Risk factors

Risk factors include cryptorchidism , Klinefelter's syndrome , puberty or testicular injuries. At the same time, infertility and unilateral orchiectomy are risk factors because they cause increased gonadotropin production in feedback. Nicotinism and a positive family history (especially brother and father) also play a role.

Histological classification

Tumors can be divided into germinal tumors (90%), which can be further divided into seminomas and non-seminomas. Then there are tumors from the stroma of the gonads and other tumors.

Germinal tumor:

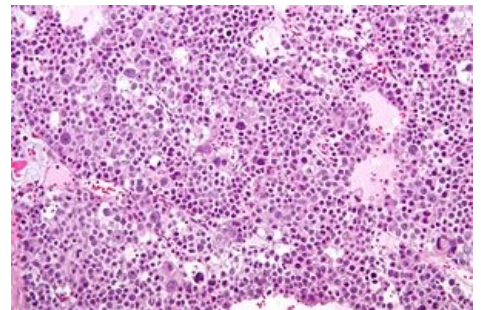
- TIN (tubular intraepithelial neoplasia)
- Seminoma
- Spermatocytic seminoma
- Embryonal Carcinoma
- Tumor from the yolk sac
- Choriocarcinoma
- Teratoma
- Mixed tumors

Stromal Tumors:

- Leydig Cell tumor
- Sertoli cell tumor
- Granulosa cell tumor
- Thecoma
- Tumors containing both stromal and germinal components

Other tumors:

- Tumors from rete testis
- Tumors from non-specific stromal cells



Spermatocytic_seminoma_intermed_mag

Diagnostics

Physical Examination

The most common symptom of a testicular tumor is a unilateral, painless enlargement of the testicle, which the patient can feel himself. Regular "self-examinations" are therefore very important. The tumor is hard, its surface is uneven, bumpy. Only in 20% the first symptom is pain due to bleeding into the tumor, its necrosis or torsion of the tumor- altered testis. essential.

We can also detect the generalization of the disease. Furthermore, it is necessary to focus on supraclavicular (superclavicular nodes), possible resistance to the abdomen (nodal packets in the retroperitoneum) and gynecomastia .

Imaging methods

Ultrasonographic examination of the testis , which confirms the diagnosis, comes first . After postoperative treatment, we perform staging examinations such as X- rays of the heart and lungs, CT of the lungs, abdomen and retroperitoneum. CT examination of the brain and skeletal scintigraphy is indicated only in case of a positive neurological finding or bone pain.

Biochemical examination

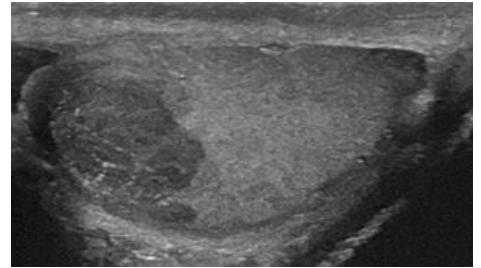
After confirming the diagnosis by physical examination and USG of the scrotum, we take blood to determine the presence and levels of tumor markers , which are important both for diagnosis (however, palpation of the scrotum and USG examination always play a crucial role!) And especially for monitoring treatment success.

Mandatory markers include:

- **AFP** (alpha fetoprotein) – Yolk sac tumor
- **beta-HCG** – choriocarcinoma,
- **LDH** (lactate dehydrogenase) – a non-specific marker depending on the volume of tumor tissue.

Optional markers include:

- Placental alkaline phosphatase (PLAP),
- carcinoembryonic antigen (CEA),
- neuron specific enolase (NSE).



Seminoma - USG

TNM classification

We use a slightly different TNM classification for testicular tumors . Not the clinical classification (T) is used, but the pathological classification (pT) based on the surgical finding. In addition, category S is added according to preoperative levels of tumor markers.

T - primary tumor

- Tis - Intratubular tumor (in situ)
- T1 - Tumor limited to testes and epididymis, without vascular or lymphatic invasion
- T2 - Tumor limited to testes and epididymis with vascular or lymphatic invasion or invasion of the tunica vaginalis
- T3 - The tumor invades the seminal cord
- T4 - Tumor invades into the scrotum

Regional lymph nodes

- N1 - Regional lymph nodes ≤ 2 cm
- N2 - Regional lymph nodes 2-5 cm
- N3 - Regional lymph nodes > 5 cm

⚠ The regional nodes for the testicles are the retroperitoneal , paraaortic, paracaval and interaortocaval nodes.

Distant metastases

- M1a - Non-regional lymph nodes or lung metastases
- M1b - Metastases in other organs

Therapy

For all types of tumors, we perform an immediate radical orchiectomy - removal of the testis and the stump of the seminal vesicle. We view a testicular tumor as an acute scrotum . The surgical approach is the inguinal section approach , ie. through the inguinal canal.

Template:CAVEImmediate surgical revision from the inguinal incision is indicated for all patients. Transcutaneous biopsy is strictly contraindicated.

(Note: Essential for the exam.)

Other treatments also vary for different types of tumors. Adjuvant radiotherapy (20 Gy) is the standard postoperative treatment for seminomas . Seminomas are extremely radiosensitive tumors. We typically irradiate an array of hockey-shaped gradient nodes. Another possible method is adjuvant chemotherapy. One course of carboplatin has the same results as radiotherapy. Retroperitoneal lymphadenectomy has a number of side effects and is not recommended. In non- seminoma tumors , the method of postoperative therapy is adjuvant chemotherapy with a BEP regimen (bleomycin + etoposide + cisplatin). Metastatic stage therapy is also based on chemotherapeutic treatment, again with the BEP regimen.

Follow up after treatment

Post-treatment monitoring includes regular physical examinations, determination of tumor marker levels, X-ray examination of the heart and lungs, or CT of the abdomen, small pelvis and chest. The frequency of check-ups depends on the histological type, stage of the disease, risk factors and other disease parameters.

Life after treatment

Every patient after a radical orchiectomy is offered a testicular prosthesis, which, however, is not covered by health insurance and has a purely aesthetic function. At the same time, the patient has the option of cryopreservation of sperm. However, collection is necessary before the start of chemotherapy or radiotherapy.

Links

Related articles

- Germinal tumors
- Testicle

References

- PEŠL, Michael. *Testicular tumors* [lecture for subject Urology, specialization General medicine, Urologická klinika VFN a 1. LF UK v Praze 1. lékařská fakulta Univerzity Karlovy]. Praha. 22.12. 2017.
- JAROSLAV CSC, MUDr. doc.Novák. Nádory varlat. *Urologie pro praxi* [online]. 2001, y. 1, p. 63-64, Available from <<https://www.urologiepropraxi.cz/pdfs/uro/2001/02/06.pdf>>.