

Acute scrotum in children

Acute scrotum , also referred to as acute scrotal syndrome (ASS), is an emergency condition in children characterized by sudden pain in the scrotum, usually accompanied by swelling and redness. The history is usually shorter than 12 hours. The most common cause of ASS is **torsion of the appendix of the testicle** (or epididymis), which occurs in more than half of children. The second most common cause is the dreaded **torsion of the testicle** (or torsion of the spermatic cord). In third place is **epididymitis** (or epididymo-orchitis). Other causes are rare.

In the case of neglect or ignorance of the issue, there may be a risk of irreversible loss of the testicle, or there is a risk of damage to the patient through unnecessary ATB treatment or even incorrectly indicated surgery under general anesthesia. A high-quality physical examination of the child and a targeted anamnesis are essential for correct diagnosis and treatment . In case of doubt about the correctness of the diagnosis, an urgent revision of the scrotum with an attempt to save the ischemic testicle should be indicated. In case of diagnostic doubts, it is necessary to supplement the Doppler ultrasound of the scrotum and examination of the spermatic cords with a high-resolution ultrasound.

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Etiology

The most common causes include:

- Torsion of spermatic cord / scrotum / testicle (26%),
- torsion of the appendix of the testicle or epididymis (45%),
- epididymitis or acute orchitis (or epididymo-orchitis) (10%),
- incarcerated inguinal hernia (8%).

Other causes (less common to rare) include trauma, hydrocele of the testicle or spermatic cord, varicocele , cancer , idiopathic edema of the scrotum, Henoch-Schönlein pupura , dermatitis, hematoma (bleeding into the adrenal glands in a newborn), appendicitis in an inguinal hernia , bleeding into lymphedema cyst , Fournier's gangrene .

Diagnostics

Anamnesis

We begin with an anamnesis, in which we are interested not only in the current state of the symptoms, but also in the time and circumstances of their occurrence, together with their subsequent development up to the present moment. We are interested **in the location and character of the pain** , when and how quickly it started, its propagation, whether it is associated with abdominal pain and pain in the groin, whether the pain was preceded by swelling, **or** whether it manifested itself only afterwards. We ask about **dysuric problems** (burning or cutting sensation, pruritus or dull pain when urinating), frequent urge to urinate (i.e. pollakisuria), **history of urinary tract infections , sexual history** (sexually transmitted diseases), data on possible **trauma** of the genitals, information from the prenatal ultrasound screening of congenital developmental defects , we will specifically ask about systemic diseases, specifically: hematomas , petechiae and B symptoms. We also ask about body temperature (measured) and nausea and vomiting .

Physical examination

We continue with a physical examination of the patient in a calm and quiet environment with good lighting, first in a standing position (aspect and examination of the cremasteric reflex) and then in a supine position with the lower limbs in the "Turkish sit".

1. First we notice **the position of the testes** . Are they visible just by looking? Noticeably elevated position of one of them?
2. We examine **the cremasteric reflex** by irritating the inner thighs with a not quite blunt object.
3. If the testicles are in the scrotum, we are interested in their **orientation** - vertical or horizontal (the so-called *bell-clapper*).
4. At first glance, is the scrotum **swollen , reddened or bruised** somewhere ?
5. We gradually palpate the testicles, epididymis and spermatic cord.
6. We stretch the tamer's skin between the fingers and look for *blue-dot signs* .
7. **We don't forget to pull the foreskin** carefully (only where it can be pulled freely) and visually inspect the mouth of the urethra .
8. We examine by palpation whether **the groin** is loose .
9. We will perform a **complete physical examination of the abdomen** (including Israeli palpation and tapotement).

Testicular torsion

The primary task of a pediatrician, pediatric surgeon or urologist is to safely rule out testicular torsion in the first place. If testicular torsion is suspected, it is appropriate to attempt manual detorsion while still in the outpatient clinic, which brings immediate pain relief and enough time to send the patient to surgery and organize it after admission to the hospital.

Distribution by localization

- extravaginal (the testicle covers also rotate around the vas deferens – *tunica vaginalis*),
- intravaginal (rotated only *the testes* inside the envelopes),
- torsion *of the mesorchy* (strangulation of the hanging *mesorchy*).

Clinical picture

With testicular torsion, there is a sudden, sharp pain in the testicle shooting into the groin, swelling and redness of the scrotum. General symptoms such as fever or malaise are not present (unlike epididymitis or orchitis). Laboratory-detected elevated inflammatory markers are not present either .

Torsion of the appendix of the testicle or epididymis

The appendix of the testis is a rudimentary structure of the Müllerian duct about 3 mm in size, while the appendix of the epididymis is a rudiment of the Wolffian duct. Both are *petiolate* and *pedunculate* , predisposing them to torsion. Torsion of the appendix in children has a peak incidence in boys aged 7-12 years and is the most common cause of acute scrotal syndrome in children. It can be and often is accompanied by reactive testicular hydrocele.

Clinical picture

The pain comes on suddenly, similar to testicular torsion. However, it tends to be milder and locally localized. The testicle itself is usually not sensitive to the touch. In the absence of major edema, a sensitive mass can be palpated on the upper (most often) or lower pole of the testicle with a thorough examination. If we stretch the skin of the scrotum between our fingers and move the testicle under it, we can see a migrating blue point, i.e. the so-called *blue-dot sign* . A cremaster reflex is often present and a reactive hydrocele can often be palpated.

Diagnosis

Again, the diagnosis is primarily clinical, and ultrasound with Doppler is added only in unclear cases when we cannot clearly rule out testicular torsion clinically. Testicular blood flow on Doppler imaging is normal or increased, an echogenic mass with central hypoechogenicity can be seen.

Treatment

At present, surgical treatment is not primarily recommended (this is an approach that is more common at the time abroad and the recommendations are international, while in our country the scrotum is often revised and, when a torculated appendix is found, its removal is performed). The pain caused by the tortuosity of the appendix is solved immediately by the operation, but the pain of the healing wound of the scrotum is added, a longer period of hospitalization is required, the child is burdened by general anesthesia, is exposed to the general risks of surgery (bleeding, infection, damage to the scrotal structures) and follow-up is necessary postoperative controls. In the vast majority of cases, rest for a week, local cooling and common analgesics are sufficient to heal and relieve symptoms. The condition improves in most patients. In case of failure of conservative treatment or recurrence, surgical revision is already indicated. For non-compliant patients (athletes, adolescents) it is advisable to consider hospitalization.

Acute epididymitis

Epididymitis is an acute inflammatory condition of the testicle, which is the most common cause of acute scrotal syndrome in adults.

Links

Related Articles

- Examination methods in urology

References

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