Testicular Tumours in prepubertal boys

**EPIDEMIOLOGY:**
Testicular tumours account for approximately 1-2% of all paediatric solid tumours. **Prepubertal boys have a lower incidence and a different histologic distribution compared to the adolescent and adult patients** (teratomas and yolk sac tumours are more common and germ cell tumours are less common). Up to 60-75% of testicular tumours are benign.

**CLINICAL PRESENTATION**
Painless scrotal mass in more than 90% of the patients, detected by the caregiver, physician or the patient himself. Hydrocele can be found in 15-50%. In boys with early onset of puberty as well as high testosterone and low gonadotropin levels, a Leydig cell tumour should be excluded.

In patients presenting with a scrotal mass, paratesticular tumours should also be taken into account.

**DIAGNOSTIC EVALUATION AND MANAGEMENT:**

If a testicular tumour is suspected, surgery with the option of intra-operative frozen section should be performed.

Organ-preserving surgery should be performed, whenever possible.

Orchietomy (inguinal approach) could be considered only if normal testicular parenchyma is no longer detectable in the preoperatively high-resolution ultrasound and/or the AFP is > 100 ng/mL in a > 12-month-old boy: highly suspicious of a yolk sac tumour.

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**Hydrocele**

**EPIDEMIOLOGY, AETIOLOGY AND PATHOPHYSIOLOGY:**
Hydrocele is defined as a collection of fluid between the parietal and visceral layers of the tunica vaginalis. Incomplete obliteration of the processus vaginalis peritonei results in formation of communicating hydrocele. Non-communicating hydroceles, based on an imbalance between the secretion and re-absorption of this fluid, are found secondary to minor trauma, testicular torsion, epididymitis, varicocele operation or may appear as a recurrence after primary repair of a communicating or non-communicating hydrocele.

**DIAGNOSTIC EVALUATION:**
It may be diagnosed by history-taking and physical investigation. If there are any doubts about the character of an intrascrotal mass, scrotal US should be performed and has nearly 100% sensitivity in detecting intrascrotal lesions.

**MANAGEMENT:**

In the paediatric age group, an operation would generally involve ligation of the patent processus vaginalis via inguinal incision.

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**Acute Scrotum**

**EPIDEMIOLOGY, AETIOLOGY AND PATHOPHYSIOLOGY:**
Acute scrotum is a paediatric urological emergency, most commonly caused by torsion of the testis or appendix testis, or epididymitis/epididymo-orchitis. Trauma can also be a cause of acute scrotum due to posttraumatic haematomas, testicular contusion, rupture, dislocation or torsion. Torsion of the testis occurs most often in the neonatal period and around puberty, whereas torsion of the appendix testis occurs over a wider age range. **Most cases of perinatal torsion are extravaginal, in contrast to the usual intravaginal torsion which occurs during puberty.**

**DIAGNOSTIC EVALUATION:**
Patients usually present with scrotal pain, except in neonatal torsion. The sudden onset of invalidating pain in combination with vomiting is typical for torsion of the testis or appendix testis.

Diagnosis of testicular torsion is based on presentation and physical exam. Doppler US is an effective imaging tool to evaluate acute scrotum and comparable to scintigraphy and dynamic contrast-enhanced subtraction MRI.

**MANAGEMENT:**
Manual detorsion of the testis is done without anaesthesia, and should be attempted in all patients if possible, because it is associated with improved surgical salvage rates.