6.1 Physical assessment

6.1.2 Examination for undescended testes

Aim
To assess testicular descent.

Background
The testes develop at 7 to 8 weeks gestation within the fetus and remain close to the future inguinal region in the abdomen until between 25 - 35 weeks, when they gradually descend into the scrotum. Descent is mediated by hormonal, physical, and environmental factors.

A testis is undescended if it is not located in the scrotum, and cannot be brought into the scrotal sac during examination. The term cryptorchidism, of Greek origin, derives from the words kryptos, meaning hidden, and orchis, meaning testis, and is commonly used interchangeably with the term undescended testis.

An undescended testis may have several presenting variations:
- be palpable elsewhere in the normal descending pathway, thus being either incompletely descended, or retractile;
- be palpable outside the descending pathway (ectopic); or
- non palpable

It may be congenital or acquired, which occurs usually during early or late childhood, is often associated with hernia, and occurs where the testis gradually ascends to an extra-scrotal position.

Congenital cryptorchidism

Incidence
A cryptorchid testis is the most common genital malformation in boys, and repair is the most common surgical intervention in paediatric urology. The incidence of unilateral cryptorchid testis is 3 to 5% in newborns, with over 70% of these spontaneously descending between 3 and 9 months of age due to the influence of hormonal changes, to an incidence of approximately 1% by 12 months of age.

Risk factors
The most common risk factors are prematurity and birth weight below 2.5 kg, other factors including placental insufficiency, small for gestational age, twins, genetic predisposition, and there is increasing evidence of environmental influences such as chemical exposure, smoking, and diabetes during pregnancy.

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Significance

Of long term significance are three main associated risks:

- A 5-10 times higher incidence of testicular cancer in cryptorchid clients (evidence is emerging to demonstrate that timing of surgical intervention impacts on this rate – early surgery may reduce the risk of testicular cancer)⁴
- 33% reduction in normal semen analysis (66% in bilaterally cryptorchid clients). Paternity rates remain nearly normal for unilateral but markedly reduced for bilateral cryptorchid clients. Impact of early treatment on fertility and paternity rates has not yet been adequately determined.
- Increased risk of testis torsion, and indirect inguinal hernia.⁵

Diagnosis

Initial diagnosis is best prior to 6 months with the following considerations:

- Clinical examination is the most reliable, accurate and least invasive method of diagnosis during this period, while the cremasteric reflex is weak, and any overlying fat layer is minimal.
- It is not reliable for family to check for the testis while the child is in the bath.
- Imaging studies may be considered for non palpable testes although sensitivity is relatively low.⁴
- Laparoscopy is the preferred option to locate and assess a non palpable testis or prove its absence.
- Hormonal and chromosomal studies are indicated where bilateral cryptorchidism exists.⁵

It is preferable to wait for spontaneous descent during the first 3-4 months. If this does not occur, then prompt referral for surgical review is advised.³

Treatment

- Surgical repair should occur between 6 and 12 months.
- For palpable testis, this currently involves standard inguinal exploration and orchidopexy, on an outpatient basis, with a success rate of 99% and minimal morbidity.
- For intraabdominal testes the procedure and outcome is more complex - an intraabdominal testis is brought down into the scrotum in one or more stages if possible. If an atrophic intraabdominal nubbin is found, removal of this is recommended due to the risk of malignancy.
- Hormonal therapy using hCG or luteinizing hormone-releasing hormone may be recommended before or after surgery in individual cases.
- Routine testicular biopsy is not currently indicated.⁵

Acquired cryptorchidism

An acquired undescended testis is thought to be due to failure of the spermatic cord to elongate as the child grows. The testis may appear to have been present in a stable scrotal position at birth and then reascends in early or middle childhood. The testis may be located in the high-scrotal area initially, but then eventually become inguinal.
The reascended testis is not able to be manipulated back into a stable scrotal position, immediately retracting out of the scrotum after manipulation, often with associated pain – this is a distinguishing feature from retractile testes, which may stay within the scrotum for some time when manipulated into place. Retractile testes are more prone to ascent. The prevalence of acquired undescended testes is approximately 7% up to 2 years of age, and varying between 1 and 2 % in middle to late childhood. 76% descend spontaneously in early or mid-puberty. A truly ascended testis that cannot be manipulated into the scrotum requires prompt surgical review and intervention. Specialist review and monitoring is required for a retractile ascending testis that can easily be manipulated into the scrotum, but that retracts out of the scrotum. There is an increased risk of infertility due to the effects of temperature on the testis and associated decrease in germ cell numbers.

Related conditions

**Congenital hydrocele**

Congenital hydrocele is a collection of fluid in the scrotum between layers of the tunica vaginalis. It may be isolated or may communicate with the abdominal cavity through a potential hernia space. It presents as a painless, enlarged scrotum, which may resolve spontaneously but may require repair if it persists beyond 18 to 24 months of age.

**Testicular torsion**

Testicular torsion is a rotation of the testis with resultant strangulation of its blood supply. An anomaly in testicular development present in 12% of males can lead to incomplete fixation of the testis predisposing it to twisting on its cord spontaneously or after trauma, hence the predisposition in cryptorchid clients.

It is most common in infancy and between 12 and 18 years of age, and is most commonly found in the left testis.

Symptoms include acute scrotal pain and swelling, nausea and vomiting, followed by scrotal oedema. Physical examination reveals a tender testis which may be elevated and horizontal. The other testis may also be horizontal because the anatomic defect is usually bilateral. The cremasteric reflex is usually absent on the affected side. The swelling and tenderness may lead to difficulty in distinguishing torsion from epididymitis. Acute scrotal pain is a surgical emergency. Testicular salvage drops rapidly from 80 to 100% at 6 to 8 hours to near zero at 12 hours post onset.

Treatment for acute scrotal pain involves urgent surgical review, surgical exploration of the scrotum, and detorsion at surgery. Manual detorsion is not recommended in children. Time is of the essence. Imaging the scrotum when the child has acute scrotal pain is not useful, and may delay surgical assessment and intervention.

Sometimes, torsion can spontaneously resolve and then recur, which may appear to suggest a less acute onset. Usually however, the onset and resolution of pain is very rapid with each episode.
Universal screening for congenital or acquired undescended testes should occur at each universal child health contact up to 3 to 3.5 years of age.

Targeted screening for congenital or acquired undescended testes should be performed at any other child health contact where there is parental/professional concern, up to 3 to 3.5 years of age.

**Key points**

- To be performed only by staff with appropriate training and competence.
- Screening for testicular descent is not part of school entry health assessment screening. In case of acute presentation, any unaccompanied child will require parental consent prior to examination.
- Parents may be given the Department of Health Testes pamphlet where appropriate.
- Community Health staff should follow the organisation’s overarching infection prevention and management policies and perform hand hygiene in accordance with WA Health guidelines at all appropriate stages of the procedure.

**Equipment**

Nil

**Procedure**

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<tr>
<th>Steps</th>
<th>Additional information</th>
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<td>1. Explain the procedure to the parent/carer and the child where relevant. Allow sufficient time for discussion of parent concerns. Obtain verbal consent to proceed.</td>
<td>Frog-leg position with foot soles together may help to locate a retractile testis. A squatting position also helps the cremaster muscle to relax and allows the testes to drop into the scrotum without help.</td>
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<td>2. Lie the infant on his back with legs flexed towards the abdomen. Toddlers and older children can be examined lying, standing or squatting.</td>
<td>The normal scrotum should have a loose wrinkled appearance. A small flat scrotum may indicate absence of testis. Enlargement of the scrotum may be due to a hydrocele, inguinal hernia or enlarged testes.</td>
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<td>3. Perform visual inspection of the scrotum, and check size, location, consistency and mobility of testes, as well as spermatic cord tension.</td>
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4. Palpate the scrotum on each side to assess the position of each testis using the following process:\(^8\)

- Palpation should start well above the scrotum, at the superior anterior iliac crest
- Apply firm downward pressure while moving the hand obliquely towards the symphysis.
- While maintaining this downward pressure towards the sacrum, use the opposite hand to palpate the scrotum.\(^5\)
- Maintain the position of the testis in the scrotum for a minute, so that the cremaster muscle becomes fatigued
- Release the testis - if it remains in place for a short time but then retracts, it is considered retractile
- If there is any question, a follow-up examination is indicated.\(^9\)

The examiner must have warm hands and a gentle touch.

In early/middle childhood retraction of the testes up into the groin is very common due to the strong cremaster muscle reflex when the child is anxious, cold or wet.

A normally descended testis should be located well down in the scrotum.

If a testis is felt in the groin it may be able to be coaxed back into the scrotum with a gentle milking pressure of thumbs.

A retractile testis may stay in the scrotum for a short time once down, only disappearing when the cremasteric reflex is activated.

A cryptorchid testis will return to its undescended position after being released.

An experienced examiner should evaluate patients with retractile testes on a yearly basis.

6. Monitor other related abnormalities such as hydrocele and predisposition to testicular torsion.

In untreated cases of intra-abdominal testes, testicular torsion may occur, manifesting as an acute abdomen.

**Referral pathway**

Infants and children should be referred to a medical practitioner for further assessment and review in the following instances:

- Infants with absent or incompletely descended testes after 3-4 months of age
- Any child where previously descended testes become either high-scrotal, retractile, or non palpable
- Scrotal hydrocele in a child, which has enlarged, or remains unresolved by 6 to 9 months of age. While surgical review is important, if a simple hydrocele is diagnosed, then intervention may not be required unless the hydrocele persists beyond 18 months to 2 years of age
- An urgent surgical referral should be initiated for any child presenting with acute scrotal pain, with or without swelling or abdominal pain, or where a testis is not palpable. This is best done by immediate presentation to the emergency department of the nearest hospital, for referral to paediatric surgical services.
Community Health Manual
Procedure
Birth to school entry, School aged children

Related policies, procedures and guidelines

Section 1.11 Infection control
3.8.6 Guide to complete a physical assessment of an infant and child

Parent questions and physical assessments within PHR

Staff should also refer to any service specific policies where applicable.

Useful resources

Policy Owner | Portfolio
---|---
Director - Statewide Policy Unit. | Birth to school entry

References


