

# Solutions For The Empty Scrotum



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The pathophysiology of the empty scrotum can be due to different mechanisms, each of which can have different prognostic outcomes. A practical clinical classification of undescended testes (UT) initially subdivides into palpable and impalpable testes.

## How do you diagnose?

### Physical examination

UT diagnosis is often made during a regular pediatric patient visit. Aside from determining the size and shape of the testes, a principal aim of the examination is to find the lowest position in the scrotum to which the testes will descend without undue tension on the spermatic cord. Ideally, the child should be relaxed and the clinician should be patient and gentle.

UT is often located between the external inguinal ring and the scrotum. Almost 90% of the testes are felt in the inguinal region or can be massaged into the inguinal area by pressing, with one hand, near the anterosuperior iliac spine and massaging downward and medially toward the scrotum. Through the

scrotum, with the other hand, the examiner should attempt to grasp and descend the testes.

It is important to observe if, after release, the testes spontaneously stay in the scrotum. If the testes remain in the scrotum without tension on the spermatic cord, this represents a case of retractile testes. If after this maneuver the testes are not palpable, one should look for the possibility of ectopic testes. Truly impalpable testes are rare (< 10% to 20%).

If the testes are initially felt above the scrotum, the child should be re-examined at the age of three months. If it remains outside of the scrotum at this age, a diagnosis of UT can be made.

### Radiologic tests

Many radiologic techniques help identify the testes' position. These include:

- ultrasound (US),
- computed tomography (CT) and
- magnetic resonance imaging (MRI).

The most useful test is often US, given its availability and absence of radiation. As US is an operator-dependent test, results may vary depending on experience.

## Are there complications?

The incidence of complications varies depending on the type of the UT. If the type of UT is not appropriately diagnosed and managed within the first year or two of life, the incidence of some problems increases. Problems associated with UT include fertility, malignancy and testicular torsion.

Table 1

## Management of undescended testes

Non-surgical	Surgical
<ul style="list-style-type: none"> <li>• Observation (for retractile testes only)</li> <li>• Hormone therapy</li> </ul>	<ul style="list-style-type: none"> <li>• Standard orchidopexy (open surgery or laparoscopy)</li> <li>• Two-staged laparoscopic orchidopexy</li> </ul>

## What about management?

As a general rule, observation and repeated examination are the initial approach to the empty scrotum during the first six to 12 months of life. If the testes remain in an abnormal position, a more definitive approach is adopted and tailored to the type of UT.

Children with retractile testes should be examined at each regular pediatric visit until the testes are no longer retractile. Aside from the case of retractile testes, all other types of UT will need some type of intervention.

Intervention is usually surgical, but in some rare cases, hormonal treatment may be an option (Table 1).

### Medical treatment

As UT may be caused by deficiency of the hypothalamic-pituitary-gonadal axis, some have studied hormonal therapy options. In the last decade, human chorionic gonadotropin (HCG) and combined luteinizing hormone-releasing hormone (LHRH) or gonadotropin-releasing hormone have been used as therapy. The mechanism of action in both cases increases serum testosterone production by stimulation at different levels of the hypothalamic-pituitary-gonadal cascade.

Rate of successful hormonal therapy is low in cases of unilateral cryptorchidism, young children and testes near the external inguinal ring (which represent the majority of cases).

One randomized, double-blind study concluded neither hCG or LHRH were effective in promoting descent of truly undescended testes.<sup>1,2</sup>

In our experience, hormonal therapy is rarely successful and all children with UT (except for those with retractile testes) ultimately require surgical exploration.

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### Surgical treatment

Orchidopexy represents the gold standard treatment for UT. Advances in laparoscopic surgery have led to laparoscopy being used by most pediatric surgeons as both a diagnostic and therapeutic tool.

This minimally invasive approach plays a central role in the evaluation of cases or impalpable testes. Laparoscopy should now be considered the gold standard for the exploration and treatment of impalpable testes.



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