



ORIGINAL RESEARCH PAPER

General Surgery

CLINICAL STUDY OF UNDESCENDED TESTES IN TERTIARY CARE CENTER, JNIMS, IMPHAL, MANIPUR

KEY WORDS: cryptorchidism , undescended testes , orchidopexy , orchidectomy

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ABSTRACT
BACKGROUND : Cryptorchidism or undescended testes is one of the most common disorders encountered in newborn males, especially in those born prematurely. This can lead to infertility, higher risk of testicular trauma, testicular malignancy, torsion testis, and strangulation of associated inguinal hernia. Hence a study was conducted to evaluate the presentation, complications, and the management of undescended testis. The aim is to determine the location of testes and associated complications with undescended testes. **METHOD :** All cases of undescended testes presented to the department of surgery and operated by a single surgeon, JNIMS, Imphal during 2018 December- 2020 February were included in this study. Their clinical presentation, surgical management and post operative complications were recorded and analysed. **RESULTS :** 20 consecutive cases of undescended testes were included in the study. Age group was 12 months to 9 years. There were 17 patients (85%) unilateral and 3 patients (15%) bilateral undescended testes .19patients(95%) on clinical examinations testes were palpable and for 1 patient (5%) testes was not palpable.1 patient (5%) associated with congenital inguinal hernia on contra lateral side. 18 orchidopexy (90%) done, 1 orchidectomy (5%) and 1 left inguinal exploration (5%)done. During 6 months follow up period no significant complications occurred. **CONCLUSION:** Undescended testes is one of the most common disorders of paediatric age. Early diagnosis and treatment is of paramount importance to optimize testicular function, potentially reduce and/or facilitate diagnosis of testicular malignancy, provide cosmetic benefits, and prevent clinical hernia or torsion.

Introduction

Cryptorchidism is one of the most common disorders encountered in paediatric age group and has been studied extensively. The most common congenital anomaly, occurring in 4% to 5% of full-term and 9% to 30% of preterm male neonates¹. Approximately 70% to 77% of cryptorchid testis will spontaneously descend, usually by 3 months of age². By one year of age, the incidence of cryptorchidism declines to about 0.8 to 1.2% and remains constant throughout the adulthood³. Ectopic: aberrant course of descent, usually after leaving inguinal canal: femoral, pubopenile, perineal or crossed scrotal^[10].

Retractile: testis can be manipulated into scrotum where it remains without tension. Gliding: testis can be manipulated into upper scrotum but retracts when released^[11]

Aims:

1. To determine the location of undescended testes
2. To determine the appropriate procedure
3. To determine associated congenital anomalies

Patients and Methods in clinical study

- It is a prospective observational study . All cases of undescended testes presented to the department of surgery and operated by a single surgeon, JNIMS, Imphal during 2018 December- 2020 February were included in this study.
- Informed consent was taken

- Patients are admitted to ward detailed history taking and complete clinical examination
- Boys were examined in supine , standing position and if possible cross leg position
- The abduction of the thighs contributes to inhibition of the cremaster reflex or testicular elevation elicited by scratching the inner thigh
- Examination included documentation of
- Testicular palpability
- Position
- Mobility
- Size
- Possible associated findings
- Hernia
- Hydrocele
- Hypospadiasis

All the palpable undescended testes underwent open orchidopexy Non palpable undescended testes underwent MRI whole abdomen followed by inguinal exploration If testes were found and viable Stephen fowler's single stage orchidopexy done If the testes tissue found atrophied orchidectomy was done . Patients were followed up on two weeks ,six weeks, three months and six months Patients were examined for testicular shape and size also for wound infection as per CDC guidelines⁶

Results :

A total of 20 patients studied during the time period Youngest – 10 months , eldest – 12 years

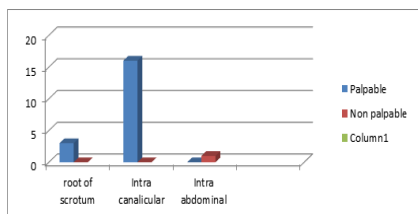


Figure I : Palpable and Non Palpable

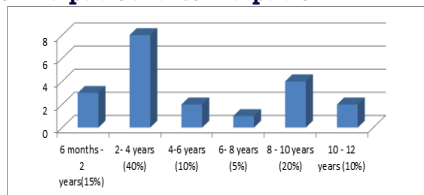


Figure II : Age of Presentation

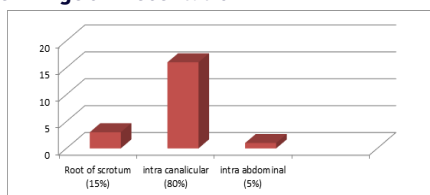


Figure III : Location of Undescended testes

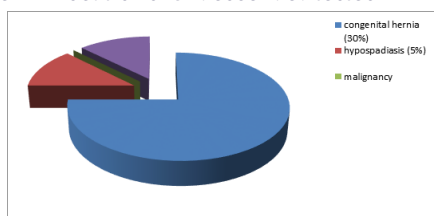


Figure IV: Complication of undescended testes (UDT)

Table I : Types of Surgery

Type of surgery	No. Of testicular unit	Percentage
Standard single stage orchidopexy	18	90%
Stephan fowler single stage orchidoprxy	0	
Stephan fowler two stage orchidopexy	0	
Orchidectomy	1	5%
Inguinal exploration	1	5%

Discussion

- Undescended testes or cryptorchidism is one of the most common clinical entity in male children . One-third of boys with true cryptorchidism have bilaterally cryptorchid testes, whereas two-thirds are unilateral¹⁻³
- The main reasons advocated for treatment of cryptorchidism are

Sub fertility/ infertility : Spermatogenic function has long been observed to be diminished in the setting of a UDT, which can result in subfertility or infertility. There is a small difference in the temperature between the abdomen and the scrotum (2-3°C), but this warmer environment impairs normal spermatogenesis. These undescended testes have had an arrest in development of the germinal epithelium, with a reduction in the total number of germ cells starting in the first year of life. Fibrotic changes in the stromal connective tissue have also been noted⁷¹. 50-90% of patients with bilaterally untreated cryptorchid testes have infertility⁸¹

Increased testicular malignancy rate

Cryptorchidism is one of the few clearly established risk factors for testicular malignancy. The pathogenesis may be

attributed to undifferentiated gonocytes which remain in the cryptorchid testis postnatally. These can later develop into carcinoma in situ (CIS), and eventually, a germ cell tumor (GCT)⁸¹

Increased risk of developing inguinal hernia , Testicular torsion ,Injury against pubic bone ,Psychological stigma of empty scrotum.

The most common age group for undescended testis was 3-7 years as per Iacob RE et al⁴¹ . At birth, the prevalence of cryptorchidism is around 3%; but the prevalence declines to about 1% by 3 months (corrected for gestational age), and remains around 1% at 1 year⁵¹ . A retrospective study of 1,235 boys with cryptorchidism revealed that all patients with eventual spontaneous descent initially presented before 6 months (corrected for gestational age). Of those boys initially presenting beyond six months of age, none had spontaneous testicular descent⁶¹. Therefore, testicles that do not descend by 6 months are unlikely to do so spontaneously. Gonads should be carefully examined for size, turgor, any palpable paratesticular anomalies, and the presence of hernia or hydrocele^{113,14,18,161}. Accurate assessment of the position of the UDT and its volume compared with the contralateral, healthy testis gives the surgeon a basic knowledge in cryptorchid boys. Different imaging technique have been evaluated for the assessment of UDT^{118,171} . US with a high resolution transducer (> 7.5 MHz) offers the greatest accuracy in assessment of 100% of palpable and of 84% of non-palpable UDT (with a sensitivity of 76% and a specificity of 100%^{118,191} . Nowadays, the surgical therapy for the palpable UDT is orchiopexy with creation of a subdartos pouch²⁰¹

Timing off ochidopexy :

In the 1950s, orchiopexy was recommended in boys aged 10–15 years²²¹, in the 1970s in 5–6-year-old boys²²² . Currently orchiopexy is recommended between 6 and 12–18 months^{26,26,271}

This should be done for the following reasons:

- to prevent the impairment of spermatogenesis,
- to prevent, or at least decrease, the risk of TGCN,
- to facilitate future examination of the testicle (palpation, US),
- to correct the inguinal hernia frequently accompanying UDT,
- to minimize the risk of torsion of the testes

Hormonal treatment :

The hormonal treatment of UDT is based on the hypothesis of deficiency of the hypothalamic- pituitary- testicular axis at the end of gestation or shortly after birth, and hence the lack of the 'mini-puberty'

The dose of hormonal therapy is usually as follows^{228,281}.

- GnRH – 3 × 400 µg/day (i.e. 3 × daily one puff of 200 µg into each nostril) over 4 weeks as nasal spray,
- hCG – 50 IU/kg body weight in intramuscular injection twice a week for 3–5 weeks (total dosage of 6,000–9,000 IU).

Complications of treatment

Orchiopexy has a rather low (about 1%) risk of complications [81–83]. They can be classified as follows:

Intraoperative (rare):

- ilioinguinal nerve injury,
- damage to the vas deferens.

Postoperative early:

- hematoma formation,
- wound infection.

Postoperative late:

- testicular atrophy,
- testicular retraction (ascent, acquired UDT),
- postoperative torsion (either iatrogenic or spontaneous).
The most serious of these complications is testicular atrophy resulting in loss of a testis. Ascent of the testis after orchiopexy (recurrent or acquired UDT) is a well-known complication

Conclusion :

Cryptorchidism or undescended testes (UDT) is one of the most common clinical entity in surgery . Diagnosis is often clinical. It is suggested to await spontaneous descent of the testis during the first 6 months of life. Hormonal therapy, either in an adjuvant or neo-adjuvant setting, is not standard treatment for cryptorchidism. Patients have to be evaluated on an individual basis. Surgical intervention (orchiopexy) is the primary approach in boys with UDT [1–4]. It should be performed at the latest by 12–18 months of age or upon diagnosis in older boys. Early diagnosis and treatment is essential to avoid complication.

Declaration :

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Ethical approval : study approved by institutional ethical committee

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