

REVIEW ARTICLE

Cruciality of Detecting Cryptorchidism During Toddler Phase

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How to cite this article:

Arora T., Joshi P.B., Dudhamal T.S. Cruciality of Detecting Cryptorchidism During Toddler Phase. Ind J Anct Med Yoga. 2025; 18(1): 17-22.

ABSTRACT

Undescended testis (cryptorchidism) refers to the arrest in descent of the testis in some part along its pathway to the scrotum. The reported paternity rates in adults are about two thirds for unilateral undescended testis and less than one third for bilateral disease. This paper review summarizes a case of undescended testis, its surgical procedure and complications. This analysis primarily discusses the ideas surrounding cryptorchidism that require modification, as well as providing information on its global impact over the past few decades. This highlights the prime focus towards the early detection and correction of undescended testis in society.

KEYWORDS

• Cruciality • Cryptorchidism • Sterility • Undescended testis

INTRODUCTION

Undescended testis (cryptorchidism) refers to the arrest in descent of the testis in some part along its pathway to the scrotum.¹ The incidence rate is 25% in premature infants, 5-6% in full term infants and 2% in later childhood.^{2,3} Congenital Cryptorchidism is one of the most common urogenital abnormalities

in male new born, with a prevalence of 1.6%-9.0% at birth and 0.9% and 1.8% at 3 months of age.⁴ Right testis alone involved commonly in 50% cases. The condition of an undescended testis can result in various issues like sterility, malignancy and also additional associated complications such as acute epididymis-orchitis, testicular torsion etc. Malignant

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➤ Received: 06-02-2025 ➤ Revised: 25-02-2025 ➤ Accepted: 06-03-2025



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transformation in undescended testis is 20 times more common than normally descended testis.⁵

Patient particular

A 28-year-old male patient married, resident of Jamnagar, non-diabetic, normotensive presented with complaints of absence of left side testis since childhood along with pain in left side inguinal region during walking in the last three years. He didn't have any significant family history.

On Examination

Inspection-No any swelling was found.

Surrounding skin was normal no any inflammatory signs were present.

Palpation- Right sided testis was palpable and no swelling was seen whereas in left sided testis was not palpable and swelling was absent.

Laboratory Investigations-All hematological investigations such as Hb, CBC BT, CT, Hepatic profile, RBS, Lipid profile, Renal profile was found within normal limits.

Semen Analysis-Reports revealed azoospermia. Semen analysis report is shown in *Figure 1*.

<u>SEMINAL FLUID EXAMINATION</u>			
Parameter	Result	Unit	Reference Interval
<u>PHYSICAL EXAMINATION :-></u>			
Quantity	3.5	ml	
Colour	Whitish		
Odour	Odourless		
Viscosity	Viscus		
Reaction	Alkaline		
<u>MICROSCOPIC EXAMINATION :-></u>			
Total Sperm Count	00 (AZOOSPERMIA)	MIL./ml.	60 - 300
Pus Cells	4-5	/h.p.f.	
R.B.C.	Absent	/h.p.f.	
Epithelial cells	Absent	/h.p.f.	
Trichomonas	Absent	/h.p.f.	

Figure 1: Ultrasonography It revealed empty left scrotum with small sized undescended testis. Reports are attached in *Figure 2*.

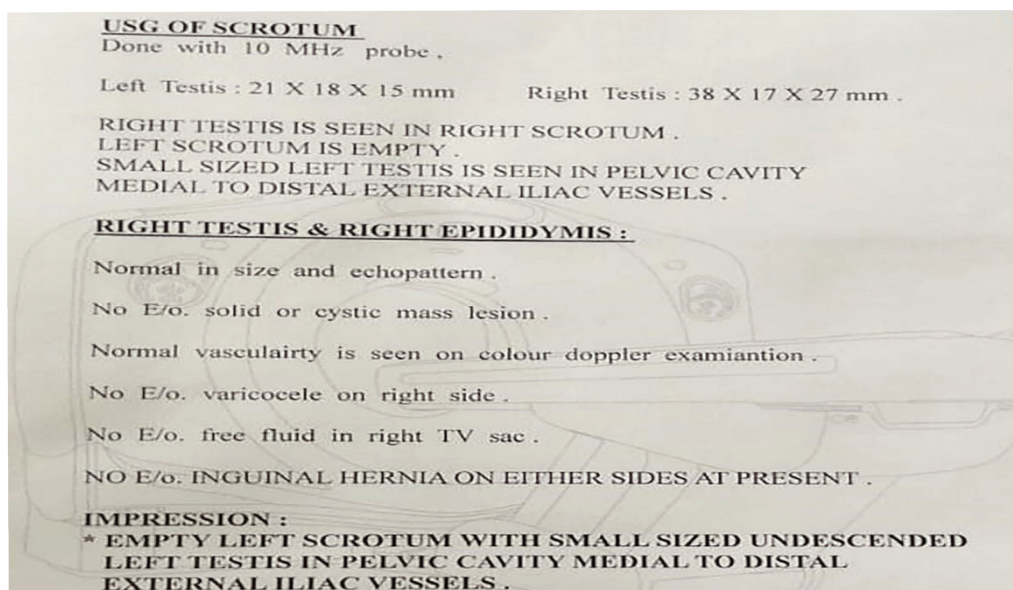


Figure 2

Intervention

The patient was convinced for surgery as there are risk factors in future. So, the case was planned to perform. Excised testis sample (Figure 3) was sent for histopathology to rule

out malignant changes in the tissue and report showed no any signs of malignancy. (Figure 4). No any aphrodisiacs drug was prescribed in follow-up period.



Figure 3

HISTOPATHOLOGY	
CASE SUMMARY	
CASE NO	:MLH9334/23
SPECIMEN	:Specimen of testis for HPE.
DIAGNOSIS	: Testicular tissue with atrophy and germ cell aplasia. - No evidence of Intratubular germ cell neoplasia / malignancy seen.
Clinical Notes	: Pain in left sided inguinal region. - To rule out morphological changes - Carcinomatous changes.. - Atrophic changes.
Gross Examination	:Received in 10% buffered neutral formalin labelled with Pt's name (Rupesh Chudasma) Consist of testis. - Testis measures : 2.5x x 2.5 x 1.8 cm. - Spermatic cord measures : 4.0 cm. - Epididymis measures : 3.0 x 1.2 x 1.0 cm. Selected bits taken for study. Slide/Block No. MLH9334/23 : A (Spermatic cord), B, C (Testis), D (Epididymis).
Microscopy	:Section shows testicular tissue with 10-20% hyalinized sclerosed seminiferous tubules. Rest of the tubules show thickening of basement membrane and are smaller in size, lined by Sertoli cells only. - Interstitial cells of ledig are unremarkable. - No evidence of Intratubular germ cell neoplasm or malignancy.

Figure 4

Need for early detection

Malignancy and **Infertility** are the primary interdictions associated with undescended testis. This can have a negative impact on both the affected individual and their family, making it a serious issue within the society. According to pediatrician urology, it is estimated that it affects 1 to 4 percent of full term up to 30% in preterm neonates.⁶

The relative risk of testicular cancer in orchidopexy before reaching 13 years of age was 2.23 whereas it was 5.40 for the patient older than 13 year of age which is more than double.⁷ This study also demonstrates that delay in detecting the undescended testis, proceeds to the orchidectomy instead of orchidopexy. Such situation proved difficult for both the medical team as well as the affected patients.

90% of patients with untreated bilateral cryptorchidism develop azoospermia as reported 0.4 to 0.5% incidence in the general population.⁸ The incidence of azoospermia drops to 32% from 46% after bilateral orchidopexy. The incidence of unilateral cryptorchidism is 13% regardless of the fact as to whether the condition is corrected. About 10% of infertile men from the general population have a history of cryptorchidism and orchidopexy.⁹

By detecting issues on an early stage, it can decrease the likelihood of conflicts arising between partners after marriage. However, if left undiagnosed, the population may experience higher levels of anxiety, depression and suicidal tendencies due to the societal norms such as for not having children's, these types of norms will lead to harm their mental and physical well-being. As a result of these complications, the patients experience various physical health problems that disrupt their daily life and also diminish their overall well-being.

In order to avoid these types of complications, it is crucial to detect them early in the toddler stage for future generations. In order to address this issue, necessary measures should be implemented by parents, the medical sector, educational system and the governing body.

Responsibilities of parents and health care providers for early detection:

- Following the birth of their child, parents are responsible for taking them to regular check-ups with a pediatrician.
- A pediatrician has the responsibility to educate individuals who are illiterate or living in villages through various methods. In order for them to comprehend the significance of early detection of testis, regular camps and workshops should be held in villages and small cities. During pediatric check-ups, it is important to not only review vaccination records, but also regularly examine both the testicles. This should be marked off on the card accordingly.
- During the pre-school years, children are required to undergo regular medical examinations at school and also educate them about their reproductive organs and also their abnormalities. Additionally, parents should also provide monthly training on their child's reproductive health.
- The governing body should implement various initiatives to educate the illiterate population, raise awareness and provide knowledge about reproductive health. They should organize small pediatrician camps in villages where people are encouraged to ask questions about their child's reproductive health. Additionally, the Family Welfare planning Unit should also establish helplines for telephonic consultations on these matters.
- In order to spread awareness among the public, small performances such as plays and street acts, advertisements are frequently utilized.
- Conducting surveys is necessary to gather undetected cases of testicular issues and this should be done in order to provide prompt management instead of waiting until later in life. Surveys also allow us to identify the lack of knowledge and awareness in this particular field, enabling us to implement awareness programs for that specific area.

Seminal Fluid Examination			
Test	Result	Unit	Biological Ref. Interval
Collected At	Laboratory		
Specimen Collection Time	7:05 PM		
Abstinence	3	Days	2 - 7
Physical and Chemical Examination			
Volume	2.0	ml	>= 1.4 ml
Colour	Whitish		Opalescent Grayish White
pH	7.5		7.2 or >
Viscosity	Normal		Normal
Liquefaction Time	30	Minutes	0 - 45
Fructose Sullivan's Method	Positive		Positive
Microscopic Examination (Manual Microscopy)			
Total Sperms Count	00 No sperm is seen even after centrifugation.	million/mL	>16
Total Motile Sperm	-	%	>= 40
Actively Motile	-	%	>30
Sluggishly Motile	-	%	
Non Motile	-	%	
Abnormal Heads	-	%	
Abnormal Midpieces	-	%	
Abnormal Principle Pieces	-	%	
Immature Forms	Nil	/hpf	
Red Cell	Nil	/hpf	
Pus Cell	4 - 6	/hpf	
Trichomonads	Nil		

Figure 5

Through utilizing these methods, individuals can lessen the complexities and enhance their overall state of being.

Based on all of this information, it can be determined that the detection of undescended testis during the toddler phase is crucial for preventing potential complications such as infertility and malignancy. As shown by the data, early detection and treatment can greatly reduce the likelihood of these serious health issues. It is important for parents and healthcare professionals to be aware of the signs and symptoms of undescended testis in order to ensure prompt detection and prevent long-term consequences for the child's health. The main purpose for this publication is to raise awareness about the condition and prevent it from becoming malignant, while it can lead to malignancy in later stages but it does not increase sperm count after surgery (Figure 5).

With proper awareness and early intervention, one can prevent these complications and promote healthy development in young boys. As young individuals are the future of a nation, it is important to have a healthy population in order to create a strong and thriving society and country.

Conflicting Interest: Nil

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