

Original Research Article

Management of undescended testes in adolescents and young adults

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ABSTRACT

Background: The undescended testes (UDT) are at risk of torsion, trauma and pathologic changes leading to subfertility and malignant transformation. Surgery for UDT should be performed before the age of 2 years.

Methods: This was a 5-year retrospective study conducted on patients who presented with features of UDT in Port Harcourt. Ethical approval for the study was sought and gotten from the hospital ethical committee. Data was obtained from ward admission registers, theatre, and discharge records. The information gotten included history, examination findings and treatment received. Patients who had ectopic testes, retractile testes and incomplete records were excluded from the study. The information was collected and analysed. Categorical data was presented in the form of frequencies and percentages using tables. Continuous variables were presented in means and standard deviation. Results were presented in tables and charts.

Results: The 15-19-year age group had the highest frequency. The median age was 19 years. Most subjects had at least secondary school education (71.43%). The right testes alone were undescended in 11 cases while the left alone was undescended in 7 cases. Three patients presented with undescended testes. Most (15) patients had their testes located in the inguinal canal. Poverty was the most common reason for late presentation. Orchidopexy was most commonly carried out via an inguinal approach.

Conclusions: Late presentation of patients with UDT is common. Inguinal orchidopexy was the most common surgery performed. Health education on the need for scrotal examination after birth can aid earlier presentation.

Keywords: Undescended testes, Retractable testes, Orchidopexy

INTRODUCTION

Undescended testis (UDT) is defined as failure of a testis to descend into the scrotum. Cryptorchidism or undescended testis (a testis that is not in the scrotum) is a common genitourinary disease in male neonates.¹ Normal testicular descent to the scrotum usually occurs between 25 and 35 weeks of gestation.² Undescended testis is diagnosed at birth at a rate of 1–4% in term infants and up to 45% in preterm infants.³ The incidence of is about 1% at the age of 1 year.⁴ Most cases of undescended testes descend spontaneously by 3 to 6 months.³ Risk factors for undescended testes include prematurity, low birth weight, maternal smoking, analgesic use, and estrogen exposure during pregnancy.⁵

The undescended testes are at risk of torsion, trauma and pathologic changes leading to subfertility and malignant transformation.⁴ So it is important for treatment to be carried out and at the right time.⁶

Hormonal therapy for treatment of UDT is generally not recommended and had a low success rate, there is also a risk of ascent of the testes after stopping the medications.^{6,7} There is also a possible long-term adverse effect on spermatogenesis.⁸ Hormonal therapy also causes penile growth, painful erection, and behavioral changes.⁹ For the above reasons surgical intervention is the recommended form of treatment for UDT. Surgical therapy for UDT should be carried out before 2 years to prevent these

pathological changes from occurring.⁴ So it is unusual to see UDT in adolescents and young adults.

Studies on UDT have been conducted in Nigeria at Zaria, Benin, Aba and Lagos.^{4,10-13} A study on genitourinary abnormalities has been carried out in Port Harcourt, a case report on undescended testes was published by Onwuchekwa et al, in Port Harcourt.^{14,15} We are unaware of any study conducted on UDT in Port Harcourt, Nigeria. We intend to carry out a study on the presentation and management of undescended testes in adolescents and young adults.



Figure 1: A left undescended testis in an adolescent.



Figure 2: An adolescent with left undescended testis.

METHODS

This was a retrospective study on patients with UDT in Port Harcourt, Nigeria. Twenty-one patients above 15 years who presented with features suggestive of UDT from January 2017 and December 2021 to University of Port Harcourt Teaching Hospital UPTH were included in the study.

Data was obtained from ward admission registers, theatre, and discharge records. The information gotten included history, examination findings, investigations and treatment received. Patients who had ectopic testes and retractile testes were excluded from the study. All patients with incomplete records were also excluded from the study.

Data collated include age at presentation, level of education, location of the testes, reason for delay in presentation, surgical approach, surgery performed, and post-operative complications. All patients had subarachnoid block and open orchidopexy using a subdartos fixation using Nylon 3 0 to fix the testis at three points (superior pole, inferior pole and mid pole).

All patients with UDT were counselled about the need for surgery. They had preoperative full blood count, genotype, electrolyte urea and creatinine and abdominal and scrotal ultrasound scan before surgery. For patients above 18years a seminal fluid analysis was done to assess fertility level. The information was collated and entered using Microsoft Excel 2016 version and transferred into the statistical package for social sciences (SPSS) for windows (version 20) (IBM SPSS Inc. Chicago, IL) for analysis. Categorical data was presented in the form of frequencies and percentages using tables. Continuous variables were presented in means and standard deviation. Results were presented in tables and charts.

RESULTS

Thirty-two patients with problems of testicular descent were identified. Four patient had ectopic testes, one had retractile testes and these were excluded from the study. Three had incomplete records and were also excluded from the study.

Table 1 shows the age group of patients who presented with UDT, the 15-19-year age group had the highest frequency. Only one patient presented above 30 years of age with UDT.

Age range was 15 to 32 years and median age was 19 years.

Table 1: Age group of patients who presented with UDT.

Age distribution	Frequency (n)	Percentage (%)
15-19	11	52.38
20-24	5	23.81
25-29	4	19.05
Above 30	1	4.76
Total	21	100

Table 2 shows the level of education of subjects. Fifteen subjects had at least secondary school education.

Table 2: Level of education of subjects.

Level of education	Frequency	Percentage
Primary	0	0
Secondary	15	71.43
Tertiary	6	28.57
Total	21	100

Table 3 shows the side with the UDT. Eleven subjects had right sided UDT and seven had left sided UDT. Three subjects presented with bilateral UDT.

Table 3: Side with the UDT.

Side of UDT	Frequency	Percentage
Right alone	11	45.83
Left alone	7	29.17
Bilateral	3	25
Total	24	100

Table 4 shows the location of testes. Most subjects presented with the testes in the inguinal canal. In one patient the testis was absent.

Table 4: Location of testes.

Location of testes	Frequency	Percentage
Intra-abdominal	2	
Canalicular	15	62.5
Superficial inguinal ring	6	
Absent	1	
Total	24	100

Table 5 shows the reasons for late presentation. Poverty was the most common reason for late presentation followed by shame.

Table 5: Reasons for late presentation.

Reason	Frequency	Percentage
Advice from health professional	4	19.04
Ignorance	3	14.29
Poverty	8	38.10
Shame	5	23.81
Fear	1	4.76
Total	21	100

Table 6 shows the surgical approach, the trans inguinal approach was the most common approach.

Table 6: The surgical approach.

Surgical approach	Frequency	Percentage
Trans inguinal	20	83.33
Trans scrotal	4	16.67
Total	24	100

Table 7 shows the surgical operation performed, open orchidopexy was the most common operation performed in one stage. No patient had orchidectomy or laparoscopic orchidopexy.

Table 8 shows complications after surgery. The most common complication was scrotal haematoma.

Table 7: The surgical operation performed.

Operation performed	Frequency	Percentage
Open orchidopexy	23	100
Orchidectomy	0	0
Laparoscopic orchidectomy	0	0
Total	23	100

Table 8: Complications after surgery.

Complication	Frequency	Percentage
Scrotal hematoma	6	75
Reduced testicular size	2	25
Total	8	100

Table 9 shows associated anomaly. Umbilical hernia was the most common associated anomaly.

Table 9: Associated anomaly.

Anomaly	Frequency	Percentage
Hypospadias	1	33.33
Umbilical hernia	2	66.67
Total	3	100

DISCUSSION

Cryptorchidism or undescended testis which is the arrest of testicular descent at any level along the line of normal descent while Ectopic testes is defined as a testis which is located away from the normal pathway of testicular descent and outside the ipsilateral hemiscrotum.¹⁶ A retractile testis is one that can be manipulated into scrotum where it remains without tension.⁷ The retractile testes is believed to be due to an overactive cremasteric muscle. UDT will lead to pathological changes in the testes. Pathological changes seem to be worse for UDT compared to ectopic and retractile testes. So, it is important for these patients to be well classified and treated before 2 years of age.⁶

In Nigeria and many other developing countries patients with undescended testes present late.¹⁰⁻¹³ The mean age of presentation also seems to be higher in Northern Nigeria compared to Southern Nigeria.¹³ So, this study showing a median age of 18 years as seen in Table 1 was not in agreement with earlier studies conducted at Aba.¹³ Awareness is believed to be the reason for early presentation. Port Harcourt is an Oil city in Southern Nigeria which has a good level of education.¹⁷ About 28% of respondents in this study had a tertiary level of education as shown in Table 2 and still presented late. Hence, awareness alone may not be a reason for late presentation.

This study revealed that UDT was more on the right side than the left side as shown in Table 3. A 5-year retrospective study conducted at Panzi general hospital,

Congo also noticed similar findings.¹⁸ A 6-month cross-sectional study which took place in 32 public and private general education establishments in the city of Conakry also noticed that UDT was more on the right.¹⁹ The reason for the increase of UDT in the right is because of the later descent of the right testes, so any arrest or delay in descent in the testes will lead to UDT.

The most common site of the testes was in the inguinal canal. Fifteen (62.5%) testes were located in the inguinal canal as shown in Table 4. The results were at variance with the study conducted at Aba and Lagos which revealed that most UDT were located at the superficial inguinal ring.^{4,13} The age difference between patients in our study and that at Lagos and Aba could account for the difference in site of the testes.

Orchidopexy at the right time is important before pathological changes develop in the testes, to maintain fertility and prevent malignant changes. Eight patients presented late because of poverty and this was the most common reason for late presentation as shown in Table 5. This is not surprising as Nigeria overtook India to become the world poverty capital with the highest number of populations living in extreme poverty.^{20,21} Another reason for late presentation was because of shame and embarrassment. Previous studies in Port Harcourt Nigeria reveal that adolescents and young adults present late when they have testicular problems even in cancer.²²

Each patient had open orchidopexy to fix the testes, but 4 surgeries were conducted through a transscrotal incision only as shown in Table 6. The 4 out of the 6 cases who had the testes located at superficial inguinal ring had this approach to treatment. Other authors have also noted the use of the transscrotal approach.^{23,24} Ramzan et al conducted a 4-year randomized controlled trial at a tertiary hospital and discovered that there was no significant difference in the formation of scrotal hematoma, wound infection and secondary ascent of testis between the inguinal approach and scrotal approach.²⁴ The gold standard treatment for non-palpable UDT is laparoscopic surgery.²⁵ Laparoscopic orchidopexy is associated with better testicular position and comparable success rate compared to open orchidopexy even for palpable UDT in children.²⁵ No patient in this study had laparoscopic surgery because it is not readily available in our hospital.

The most common complication after surgery was scrotal hematoma as seen in 6 patients in Table 8. Several other studies also noted this finding.^{4,24,25} The use of scrotal support in the immediate post-operative period can prevent this complication.²⁶ Scrotal haematoma can lead to surgical site infection because blood is a good culture medium for bacterial growth. Two patients noticed a reduction in testicular size compared to the contralateral testes during follow up. After orchidopexy because of the haematoma and swelling the hemiscrotum usually appears slightly larger or normal in size, with regression of the haematoma the true size becomes apparent. Also,

disruption of blood supply during orchidopexy can lead to reduction in testicular size.²⁷

Limitations

Small sample size, however UDT in adolescents and young adults are rare.

CONCLUSION

Late presentation of patients with UDT is common. UDT is commoner on the right and the testes was located more in the inguinal canal. Inguinal orchidopexy was the most common surgery performed and a scrotal haematoma was the most common complication.

Recommendations

Education of parents, traditional birth attendants, midwives, nurses and doctors of the need for a meticulous scrotal examination after birth and if the testes is not in the scrotum the child should be referred to an appropriate hospital. A properly functioning National Health Insurance Scheme will aid treatment of UDT.

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