

The Presentation Of Cryptorchidism At Consolata Hospital Nyeri

Authors: Ilkul J.H, M.B.Ch.B, MMed; Wahinya W. M, M.B.Ch.B; Mwenda AS, M.B.Ch.B. *Affiliation:* Department of Surgery, Consolata Hospital Nyeri, Kenya. *Correspondence:* Aruyaru Stanley Mwenda. Email: arumwesta@gmail.com

Abstract

Introduction: Cryptorchidism is the commonest birth anomaly in boys but data on the entity is scarce in Kenya. Neither population nor facility based study documenting the condition is available.

Objective: To determine the age of presentation, presenting complaints and findings among patients with cryptorchidism in Consolata hospital Nyeri, Kenya.

Methods: We carried out an eight-year retrospective study by analysing all the cases of cryptorchidism operated on in our theatre using the available patients' records.

Results: A total of 54 patients with 71 undescended testes were analysed. The median age of presentation was 9.0 years (ranging

from 0.58 to 80 years). Of the cases analysed, 31.48% were bilateral, 33.33% right sided and 29.63% left sided. The main presenting complaint was empty scrotum in 82.98% of the cases. Intra-operatively, 8.5% of the testes were at the deep inguinal ring, 8.5% at superficial inguinal ring and 5.6% at mid-inguinal regional. The location of the testes in 56.3% of the cases was not indicated. Orchidopexy was performed in 88.7% of the cases.

Conclusion: Cryptorchidism is common and across all age groups with most of patients presenting to hospital late. Early diagnosis and orchidopexy is recommended.

Introduction

Cryptorchidism or undescended testes is the commonest birth anomaly in boys (1-2). This condition, whose mechanism of development is not well understood, occurs at a prevalence of 0.8-8% (2-5). Unilateral cases tend to be up to four times as common as the bilateral ones (1).

The timing of presentation carries prognostic and management implications (1,2,6) with late presentation being associated with poor spermatogenesis, testicular atrophy and increased risk of malignant transformation (1, 2, 6-8). All these are in tandem with the altered physiology in the undescended testis (5). As such early surgery plays a critical role in re-establishing a normal sperm count (1,2,5) and reducing, though not eliminating, the risk of testicular cancer (1,2,9). Data from Africa indicate that these boys are operated on later than is recommended (10-12).

In their comprehensive review of cryptorchidism in Africa, Braga and colleagues (10) decry the scarcity of African reports on the condition. They quote a few West African population and institutional studies and a Tanzanian institution based study. Still, there remains paucity of data highlighting the post-operative outcomes and/or complications associated with this condition. Studies analysing the distribution of this condition across the lifespan

are non-existent. No study exists in Kenya to give the prevalence of this condition.

This study determines the pattern of presentation and management of cryptorchidism at the Consolata hospital in Nyeri, Kenya.

Methods

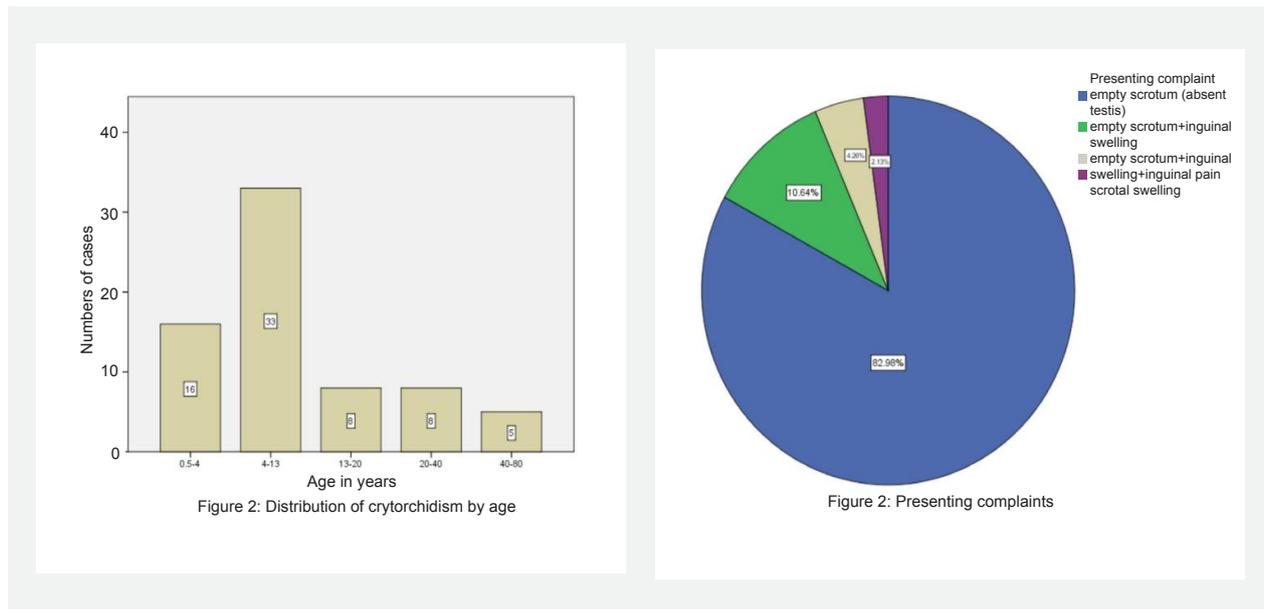
We carried out an eight-year retrospective cross-sectional study in Consolata Hospital Nyeri- a catholic level 4 hospital in Kenya. The hospital's surgical department which offers both in-patient and out-patient surgical services is run by a team lead by a resident general surgeon. It also has a visiting urologist and three visiting general surgeons.

The hospital has an elective theatre operating on two days of the week. All cases operated on are entered into an operations record book capturing the patient's name, number, age, gender, diagnosis, type of operation and the date of the operation.

We extracted data from this operations book for the period extending from 1st October 2003 to 30th September 2011. The decision for the eight year period for the study was informed by a previous institution based study in Tanzania (11). All cases with a diagnosis of cryptorchidism were extracted. The patients' age, in-patient number, laterality and intra-operative findings were entered into preformed forms. Using the in-patient numbers,

The Presentation Of Cryptorchidism At Consolata Hospital Nyeri

Ilkul J.H,Wahinya W. M, Mwenda AS



files were retrieved from the hospital records office and details about presenting complaint and examination findings added.

Each form was counter checked by a second researcher for verification before entering data into statistical software. Data were analysed using SPSS for windows version 17.0 (Chicago, IL, USA). Descriptive statistics and frequency analyses were used where applicable.

Approval to carry out the study was granted by the institutions ethics and research committee.

For the purpose of this study, we used the term 'paediatric' to refer to patients aged thirteen years and below. The choice of this age group was informed by Mlay and Sayi (11).

Results

There were 4574 operations carried out during the period of study. Of these 1038 (22.69%) were paediatric cases, 645 (62.14%) of them being boys.

A total of 54 patients (38 being 13 years and below) with 71 undescended testes were analysed. Of these, 17 cases were missing. Data on the presenting complaint, physical examination and intra-operative findings of these 17 patients were not included in our final analyses. Fifty three (53) of the cases had their ages recorded.

The median age of presentation was 9.0 years (SD 16.09, range 0.58-80 years) (Figure 1).

We analysed 38 cases of cryptorchidism among 654 total male paediatric surgical cases giving the proportion of 58/1000. Operations for cryptorchidism accounted for 1.6% of all operations, translating to 3.66% among the paediatric cases.

Of the cases analysed, 17 (31.48%) were bilateral, 18 (33.33%) right sided and 16(29.63%) left sided. Data concerning laterality was missing in 3 (5.56%) of the cases.

Figure 2 shows the main presenting complaints.

Table 1 portrays the main intraoperative findings.

In terms of intervention, orchidopexy was performed in 88.7 % (n=63) of the cases while 7 % (n=5) and 4.2 % (n=3) had orchidectomy and orchidopexy with testicular biopsy, respectively. The latter two interventions were performed on patients above 30 years of age.

Discussion

Fifty four patients with 71 undescended testes were analysed in this study. This is a facility based study and the sample reflects on the hospital catchment area as well as the private nature of the hospital. In Kenya, public hospitals tend to have higher numbers of patients due to financial considerations. We hypothesise that such a study in a level 4 public hospital in Kenya would yield

Table 1: Intra-Op findings

Finding	Frequency	Percentage
Location of testis not indicated	40	56.3
Testis at superficial inguinal ring	6	8.5
Testis at the deep inguinal ring	6	8.5
Testis at mid-inguinal region	4	5.6
Associated ipsilateral inguinal hernia	4	5.6
Atrophic testis 3	4.2	
Cryptorchidism and prostatic cancer	2	2.8
Associated hydrocele	2	2.8
Abdominal testis	2	2.8
Testicular agenesis	1	1.4
Cryptorchidism, inguinal hernia and appendicitis	1	1.4
Total	71	100

a larger sample. It is still a significant sample compared to that of 40 patients in a study at Muhimbili Medical Centre in Tanzania (11). Most other studies have been population based and thus had larger samples sizes (2,4,9). The prevalence of cryptorchidism among boys was 5.8%, way above most of the figures quoted elsewhere in our literature search (2, 4, 12). This borrows from the fact that this is a hospital based study with a predetermined sample population. As we have alluded to earlier, our study population may not be generalizable in view of the selective clientele that attend private/mission hospitals in Kenya.

The age of presentation varied from a low of six months to a high of 80 years. We attribute these extremes of age to the retrospective nature of this study since everybody who had an intra-operative diagnosis of cryptorchidism was captured. We also acknowledge that our study setting does not have a separate record book for paediatric surgery cases, a scenario in which such a study would have been limited. This peculiarity is nonetheless useful as it has brought out the spectrum of age across which cryptorchidism can present, an aspect that has not appeared in literature elsewhere. Literature has documented a special category of undescended testis viz; acquired cryptorchidism or the (ascending) nomad testis (9,13). We hypothesise that the cases of adults as old as 80 presenting with undescended testis could fall into such categories. To categorise them into such,

it would take well laid out structures to ensure all children are screened for cryptorchidism and their records available for perusal when they come back with similar complaints in adulthood [9]. A median age of presentation of 9.0 years affirms the finding as documented elsewhere that the age at which African patients present is way beyond the 4 year ceiling that appears in several recommendations (6, 10). This underscores the need for sensitization on early screening, close follow up and early intervention for cryptorchidism.

In our study there were more unilateral compared to bilateral undescended testes (34 vs 17). Among the unilateral cases there were more right (n=18) than left sided (n=16) cases. This is in agreement with several past studies (1, 2, 4, 9). However, our findings of bilateral cases being more than left sided cases is peculiar in that most past studies appear to have established a right>left>bilateral pattern of distribution (2, 9, 11). This all is likely to be purely coincidental though.

The main presenting complaint was an empty scrotum (82.98%). Other complaints included inguinal swelling (10.64%) and inguinal pain (4.28%). Mlay and Sayi (11) have found out that the main presenting complaint in children with undescended testes is an empty scrotum, a finding that is replicated in our study. They also observed that 17.5% of their study subjects had inguinal hernia associated with the undescended testis. In our study, only 5 cases (7%) had associated inguinal hernia. There is a possibility that the true picture of associated inguinal hernia is underreported in our study either because the surgeon did not focus to look out for a hernia intra-operatively or they forgot to record the same in the operation notes.

Regrettably, in our study, those who had associated inguinal hernia did not have the exact location of the testis indicated either. They form the bulk (56.3%) of our cases where the exact location of the testis as assessed intra-operatively was not indicated. Other locations included the deep inguinal ring (8.5%), superficial inguinal ring (8.5%) and mid-inguinal canal (5.6%). A peculiar finding is that of a case of testicular agenesis and absent spermatic cord in a 16 year old.

Majority of the cases underwent orchidopexy with only 7% undergoing orchidectomy. It is a similar finding elsewhere (13). Of note is the distribution of the type of operation with age; orchidectomy being performed among patients age 30 years and above.

The Presentation Of Cryptorchidism At Consolata Hospital Nyeri

Ilkul J.H, Wahinya W. M, Mwenda AS

The options available for the management of cryptorchidism are out of the scope of this paper. We were also unable to bring out issues related to complications of cryptorchidism such as infertility and testicular malignancy due to the retrospective nature of the study and lack of clear documentation of follow-up of the patients after operation. This, coupled with the possible inter-observer variability in the sections of physical examination findings, is a weakness unique to this study. Our study though draws strength from its being the first to try and analyse this common paediatric/urology condition in Kenya as well as in its lack of limitation to the paediatric age group. It brings out the spectrum of age across which this condition can present. Our study thus lays out a platform upon which more studies on the subject can be carried out in Kenya.

We recommend a larger prospective study to further analyse the different modes of treatment and their respective outcomes, complications associated with cryptorchidism as well as complications and failure rates associated with surgical intervention. A population based study also would help to determine the prevalence of the condition in Kenya. Early screening of male neonates also needs to be re-emphasised to capture as many cases as possible and follow them up for earlier intervention. In conclusion, cryptorchidism is a common condition not only among young boys but across the entire lifetime, being associated with co-morbidities such as inguinal hernia and hydrocele. Orchidopexy remains the modality of treatment for cryptorchidism in our facility, with the tendency towards orchidectomy increasing with the age of presentation.

Acknowledgements

We thank Paul Maina and Joshua Kabea for their invaluable help in extracting the patients' files from the hospital records store. We also acknowledge the staff at the hospital theatre for their co-operation during the duration of data collection.

References

1. Ritze'n EM. Undescended testes: a consensus on management. *Eur J of Endocrinology*. 2008; 159:S87-S90
2. Kumanov P, Tomova A, Robeva R et al. Prevalence of cryptorchidism among Bulgarian Boys. *J Clin Res Ped Endo*. 2008; 1(2):72-79
3. Virtanen HE, Bjerknes R, Cortes D et al. Cryptorchidism: Classification, prevalence and Longterm Consequences. *Acta Paediatrica*. 2007; 96: 611-616
4. Okeke AA, Osegbe DN. Prevalence and characteristics of cryptorchidism in a Nigerian district. *BJU International*. 2001; 88: 941-945
5. Hutson JM, Hasthorpe S, Heyns CF. Anatomical and functional aspects of testicular descent and cryptorchidism. *Endocrine Reviews*. 1997; 18: 259-280
6. Ameah EA, Mbibu HN. Management of undescended testes in children in Zaria, Nigeria. *East Afr Med J*. 2000;77: 485-487
7. Burns WR, Sabanegh E, Dada R et al. Is male infertility a fore runner to cancer? *Int Braz J Urol*. 2010; 36(5): 527-536
8. Herrinton NJ, Zhao W, Husson G. Management of cryptorchidism and risk of testicular cancer. *Amer J Epidem*. 2003; 157: 602-605
9. Hack WWM, Sijstermans K, van Dijk J et al. Prevalence of acquired undescended testis in 6-year, 9-year and 13-year-old Dutch schoolboys. *Arch Dis Child*. 2007; 92(1): 17-20
10. Braga LH, Pemberton J, Cameron B. Cryptorchidism: A Comprehensive Clinical Review. Accessed 04 August 2012 <[http:// www.ptolemy.ca](http://www.ptolemy.ca)
11. Mlay SM, Sayi EN. Undescended Testis in Paediatric patients at Muhimbili Medical Centre, Dar es Salaam. *East Afr Med J*. 1994; 71(2): 135-7
12. Mabogunje OA. Surgery for Undescended Testes. *East Afr Med J*. 1986; 63: 251-257
13. Mouriquand P. The Nomad testis. *Arch Dis Child*. 2007; 92:3