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Pattern of presentation and management of patients with undescended testis at Kilimanjaro Christian Medical Center, Tanzania

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KEYWORDS

Undescended testis;
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Abstract

Objective: To assess the pattern or presentation, management and advice given to the parents or guardians of patients with undescended testes (UDT) at Kilimanjaro Christian Medical Center, Tanzania.

Subjects and methods: From July 2010 to May 2011, 30 patients with UDT were prospectively evaluated regarding age at surgery, place of birth, information given to parents or guardians, side and site affected, results of ultrasonography, findings on surgical exploration, follow-up and surgical outcome.

Results: The median age at surgery was 6 years (range 1–36 years), 4 patients (13.3%) had orchidopexy before 2 years of age, 6 (20%) before 5 years and 4 (13.3%) after 18 years of age. The UDT was on the right side in 56.7%, on the left side in 26.7%, bilateral in 16.7%, in the inguinal region in 70% and in the abdomen in 30%. An associated malformation was found in 53.5% of patients: a hernia sac in 13 (43.3%), hypospadias in 2 (6.7%) and a hydrocele in 1 (3.3%). The UDT was detected by the parents in 13 cases (43.3%), by the patient himself in 9 (30%) and by health care staff in 8 cases (26.7%). Only 10 parents (33.3%) received advice from health care staff: 6 were advised for surgery and 4 were advised to await spontaneous descent. Preoperative ultrasonography was false negative in 56% of cases. Orchidopexy was performed in 28 (93.3%) patients (the testis was secured in the scrotum in 23 and in the high inguino-scrotal position in 5), and 2 (6.7%) underwent orchidectomy. At 3-month follow-up the testes were situated in the scrotum (not retracted) in 25 patients (3 were lost to follow-up).

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Conclusions: The late presentation detected in this study is alarming, because the majority of patients were diagnosed and treated after 2 years of age. The role of ultrasound in diagnosis of UDT is limited. Health care workers should perform neonatal examination to detect UDT and inform parents that early correction of UDT will decrease the risk of infertility and facilitate future examination to detect the development of testicular malignancy.

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Introduction

Undescended testis (UDT) is a common genital malformation in boys. Although the mechanism that regulates prenatal testicular descent is still partly obscure, there is evidence that endocrine, genetic, and environment factors are involved [1,2]. Many undescended testes are accompanied by a patent processus vaginalis [3].

UDT predisposes to testicular atrophy, malignancy, testicular trauma, sub-fertility and psychological problems. Early diagnosis and orchidopexy for UDT can potentially minimize the risk of infertility, testicular trauma and psychological problems. Although it does not reduce the risk of malignancy, it makes the testis more easily palpable in case malignancy should develop. New findings suggest that it is preferable to wait for spontaneous descent during the first 6 months [4,5]. If spontaneous descent does not occur, combined hormone therapy can be initiated prior to orchidopexy, especially with a view to improving subsequent fertility.

The treatment, including surgical correction, should be completed by the child's first birthday [4,5]. Late presentation with UDT has been reported in developing countries [6–9].

Little is known about the epidemiologic and anatomic characteristics and public awareness of UDT in Tanzania. This paper aims at addressing these areas.

Subjects and methods

A prospective study of consecutive patients with UDT managed at our tertiary level institution from July 2010 to May 2011 was performed. Standard orchidopexy was performed with the following key steps: complete mobilization of the testis and spermatic cord, repair of the patent processus vaginalis by ligation of the hernia, skeletonisation of the spermatic cord to achieve tension-free placement of the testis in the scrotum.

The following data were collected: age at diagnosis, person who detected the UDT, age at surgery, place of birth, advice given to parents or guardian, side affected, sonographic findings, type of UDT, surgical findings at exploration, associated malformations, follow-up and early surgical outcome. The data were analysed using the statistical package for the social sciences (SPSS) software version 19.

Results

The study included 30 patients with UDT: 29 (96.7%) were born in a hospital and 1 (3.3%) was born at home. The UDT was detected by the parents in 13 cases (43.3%), by the patient himself in 9 (30%)

Table 1 Age at diagnosis and surgery.

Age group (years)	Age at diagnosis, n (%)	Age at surgery, n (%)
<2	4 (13.3)	4 (13.3)
2–4	2 (6.7)	2 (6.7)
5–9	12 (40)	10 (33.3)
10–14	7 (23.3)	6 (20)
15–18	2 (6.7)	4 (13.3)
>18	3 (10)	4 (13.3)

and by health care staff in 8 cases (26.7%). The majority (n=24; 80%) were diagnosed at 5 years of age or above, and only 4 (13.3%) were diagnosed before 2 years of age (Table 1). Interestingly, 10 parents (33.3%) received conflicting advice from health care providers: 6 were advised for surgery and 4 were advised to await spontaneous descent. Pre-operative ultrasonography showed inguinal or abdominal UDT in 13 patients (43.4%) but was unable to detect the UDT in 17 children (56%). The median age at diagnosis and surgery was 6 years (range 1–36 years). Surgery was performed after 2 years of age in the majority of patients (n=26; 86.7%) (Table 1).

The UDT was on the right side in 17 patients (56.7%), on the left in 8 (26.7%) and bilateral in 5 (16.7%). The findings at surgery are shown in Table 2. An associated malformation was found in 16 patients (53.3%): a hernia sac in 13 (43.3%), hypospadias in 2 (6.7%) and a hydrocele in 1 (3.3%). Orchidopexy was performed in 28 (93.3%) patients (the testis was secured in the scrotum in 23 and in the high inguino-scrotal position in 5) and orchidectomy was performed in 2 (6.7%). At 3-month follow-up the testes were situated in the scrotum (not retracted) in 25 patients (3 were lost to follow-up).

Discussion

Testicular malignancy may occur in patients with UDT, but data on the risk and prevalence in Africa are lacking. Undiagnosed UDT may result in death before medical attention is sought in developing countries. To reduce the risk of infertility, it is now recommended to perform orchidopexy before 18 months of age. Although the risk of

Table 2 Characteristics of undescended testes according to site.

	Characteristics of testes		Total
	Atrophic	Normal	
<i>Site of undescended testes</i>			
Inguinal	4 (19%)	17 (81%)	21 (70%)
Intra-abdominal	4 (44.4%)	5 (55.6%)	9 (30%)
	8 (26.7%)	22 (73.3%)	30 (100%)

malignancy remains the same, surgery renders the testis more easily palpable.

In the present study, 13.3% of patients had orchidopexy before 2 years of age, which is the optimal time for orchidopexy, but 80% had surgery after 5 years, by which time significant morphological changes would have occurred in the testis. A study in Nigeria found that 11% of patients with UDT had orchidopexy before 2 years, 42% before 5 years and 58% after 5 years of age [6]. A study from Dar-es-Salaam reported that 50% of patients presented for orchidopexy after 5 years of age [7]. Another study from Nigeria reported correction of UDT in 52.2% of patients after 5 years and in 26.9% who presented as adults [9]. A recent study from Ireland reported that only 29% of patients with UDT proceeded to surgery before 2 years, and the mean age at orchidopexy was 5.6 years [10]. In contrast, a study from the USA reported that the median age at consultation and surgery was 20.3 and 28.9 months, respectively [11].

In this study, the UDT was on the right side in 56.7%, on the left in 26.7% and bilateral in 16.7% of patients. A study in Dar-es-Salaam found that the UDT was on the right in 52.2%, the left in 30% and bilateral in 17.5% [7]. A study from Uganda reported that the UDT was on the right in 63%, left in 18.5% and bilateral in 18.5% [8]. In contrast, a study of adult patients with UDT in Nigeria found that 55.5% had bilateral, 27.8% had right-sided and 16.7% had left-side UDT [9].

In this study, the site of the UDT was inguinal in 70% and abdominal in 30% of cases. The UDT was atrophic in 26.7% of cases overall, in 19% of inguinal and 44.4% of intra-abdominal testes. A study from Dar-es-Salaam reported that 80% of UDT were inguinal and 29.8% were atrophied [7]. A study from Nigeria reported testicular atrophy in 28% of patients with UDT [6]. In contrast, another study from Nigeria found atrophy in 60.7% of UDT in adults, confirming the well-known fact that testicular atrophy is associated with delayed surgery [9]. In this study, 16 patients (53.3%) had associated malformations, of them 13 (43.3% of the total group of 30) had associated hernia sacs. In a study from Nigeria associated hernia sacs were found in 52% [6].

In this study, the UDT was detected by the parents in 43.3%, by the patient himself in 30% and by health personnel in only 26.7% of cases. A study from Nigeria reported that only 5.6% of UDT were discovered by health personnel, 11% by the patient himself, 11% by the wife and 44.4% during investigation for fertility [9].

In the current study, 10 parents (33.3%) received advice from health care providers and only 6 were advised that their children should undergo surgery. In a study from Nigeria 28% of patients had first contact with medical personnel at peripheral clinics before the age of two years, but the parents were only reassured that the testes will descend spontaneously [6]. Since the majority of children are born in a hospital or clinic, health care personnel should perform a thorough neonatal examination for the early detection of UDT and parents or guardians should be advised that orchidopexy must be done before 2 years of age.

In this study, ultrasonography failed to detect the UDT in 17 patients (56.7%). In a study of 76 patients with UDT (on the right side in 25%, left side in 41% and bilateral in 34%) ultrasound performed prior to laparoscopy detected 70.6%, 78.4% and 15.6% of testes,

respectively [12]. In a report from tropical Africa, Mabogunje found that ultrasonography was false negative in 50% of cases and concluded that it is not better than careful examination by an experienced surgeon [13].

In this study, orchidopexy was performed in 93.3% of patients and orchidectomy in 16.7%. In a study from Nigeria, orchidopexy was possible in 88% of UDT and 10% of testes had retracted 4 months following orchidopexy [6].

Conclusions

The late presentation detected in this study is alarming, because the majority of patients were diagnosed and treated after 2 years of age. The diagnosis of UDT is mainly clinical and the role of ultrasonography is limited. Health care workers should perform neonatal examination to detect UDT and inform parents that early correction of UDT will decrease the risk of infertility and facilitate future examination to detect the development of testicular malignancy.

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