



PREVALENCE AND DETERMINANTS OF LATE PRESENTATION AND MANAGEMENT OF UNDESCENDED TESTIS IN IRAQ

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ABSTRACT

Background: The most frequent endocrine abnormality in male children is an undescended testis. Infertility, cancer, and testis rotation can all occur as a result of delayed identification and treatment of undescended testis.

Objective: To assess the prevalence and determinants of delaying appropriate treatment in patients with undescended testicle. **Methods:** The records of patients treated for undescended testicles from March 2018 to March 2020 in six hospitals in Iraq (three public and three private hospitals) were retrospectively studied. Late presentation includes cases initially presented to us after the first year of their lives. Whereas delayed therapy refers to people who sought surgical operative remedy after the first year of their life, despite presenting before that time. The study included children with undescended testicles who received treatment throughout the time period, after obtaining the consent of their parents or caregivers, and their records are complete. **Results:** There were 165 patients with 183 undescended testes. Mean age of patients was 2.3 ± 0.92 years; 61.8% of them were 1st noticed before one year of age; and 59.4% of them were presented to urologist or pediatric surgeon for management after one year of age (Late). Mother was the most common person who noticed the empty scrotum (60%). The most common reason for late presentation was a lack of awareness that the testicles had not descended even before presentation (23%). Prevalence of late presentation and management was seen significantly among patients who lived in rural area, whose mothers had low educational level, who delivered by vaginal delivery, and who delivered in general hospitals or at home. **Conclusion:** One of the main reasons for the late diagnosis of undescended testicle is the parents' lack of awareness of this form of health disorder. Therefore, we recommend, through our study, to increase the awareness and education of parents, as well as to conduct a thorough physical examination of the male newborn at birth and to continue to follow up on a regular basis up to 18 months and thus we can eliminate on delays in diagnosis.

KEYWORDS: Undescended testis, cryptorchidism, orchidopexy.

INTRODUCTION

The absence of at least one testicle from the scrotum is known as undescended testis (UDT).^[1] In male neonates, it is the most frequent genitourinary illness.^[2] UDT affects 1 to 4.6% of full-term newborns, according to studies. Premature and low-birth-weight newborns had a higher rate of infection, with reports of up to 45%.^[3] It is worth noting that the testicles in boys may downward into the scrotum in 75% of newborns and 90% of premature newborns in infancy, while the occurrence decreases to 0.8-1.2% at the age of one year in newborns with UDT.^[4] In untreated UDT patients over the age of

one year, the incidence of azoospermia ranges from 13% to 89% in unilateral and bilateral cases, respectively.^[5] Retraction of the testis into the upper scrotum (or even higher) is a typical and protective reaction in children for regulating the temperature of the testis. Cold temperature, worry, nervousness, or local stimulation can all trigger the cremasteric reflex, which induces retraction.^[6] Several risk factors have been identified as contributing to UDT. It is more frequent in preterm men, with 15-30% of premature males developing UDT within the first few months of life. A higher risk has been linked to family history, with particular genetic abnormalities

likely playing a role.^[7] Low birth weight for gestational age, as well as mother smoking, painkiller usage, and estrogen exposure during pregnancy, are all possible causes of UDT.^[8] Early observation and treatment of UDT with orchiopey between the ages of 6 and 12 months is critical to reducing germ cell mislaying and improving the male's fertility index, particularly in those whose gonocytes have converted into Ad (dark) spermatogonia.^[5] To avoid the risks of infertility, testicular cancer, and associated torsion, inguinal hernia, and cosmetic problems, patients with UDT should be treated.^[9] Therefore, it is imperative that cases of UDT be referred after six months of age for orchiopey.^[10] Due to the risk of torsion, infertility, and malignant transformation, current guidelines indicate that orchidopexy for UDT be performed before the child reaches the age of two.^[11] Despite compelling evidence and consistent recommendations, a significant proportion of orchidopexies are still performed on children above the age of two. The occurrences of such delays, as well as the reasons that cause them, are little known.^[12] Thus our study aimed to estimate the prevalence and determinants of delaying appropriate treatment for patients with UTD.

METHODS

This cross sectional study was conducted in six hospitals (Three Public and three Private hospitals) in Iraq during a period of two years from (March 2018 to March 2020). The study included all patients who managed for UDT. They were reviewed from the clinical records of the selected hospitals. Those with missing information in the case sheets were contacted by telephone, or called for checking in order to complete the missing data. In general late presentation has been defined as cases that initially presented to us after the first year of their life. Besides, delayed therapy refers to people who sought surgical operative correction after the first year of their life, despite presenting before that time. Before being

enrolled in the trial, all parents/caregivers were given informed consent. Patients above the age of 65 gave their consent as well. The study included all children with UDT who were treated and whose parents/caregivers gave their oral consent and whose data were complete. Those who declined to take part in the study were excluded. The total number of study patients was 165 patients with 183 UDT. The data was collected from archive files including socio-demographic characteristics, previous medical, surgical and drug history, date of first presentation, side of UDT, type and site of delivery, who noticed the empty scrotum, and reasons for late presentation to the Pediatric Surgical consultation.

For data analysis, the Statistical Package for Social Sciences (SPSS) was used. The data were presented as mean, standard deviation, and ranges. Categorical data were presented for the study using frequencies and percentages. When expected frequency was < 5, Fisher exact test was employed instead of the chi square test to investigate the relationship between late presentation and treatment with specific information. A P – value of less than 0.05 was deemed significant.

RESULTS

The results of the current study confirmed that the mean age of the patients was 2.3 ± 0.92 years; 58.2% of them were living in urban area; 13.3% had positive family history of UDT; 40% of their fathers were finished secondary school; 36.4% of their mothers were finished higher education; 60.6% of them were delivered by cesarean section; 68.5% were delivered in general hospitals; 55.2% of patients had left side UDT; 61.8% of them were 1st noticed before one year of age; and 59.4% of them were presented to urologist or pediatric surgeon for management after one year of age (Late) as shown in table (1).

Table 1: The main characteristics of the patients participating in the study.

Variable	No. (n= 165)	Percentage (%)
Age (Year)		
< 1	67	40.6
1 – 5	52	31.5
> 5 - 12	36	21.8
> 12	10	6.1
Residence		
Urban	96	58.2
Rural	69	41.8
Family history of UDT		
Yes	22	13.3
No	143	86.7
Father Education		
Illiterate	12	7.3
Primary school	32	19.4
Secondary school	66	40.0
Higher education	55	33.3
Mother Education		

Illiterate	18	10.9
Primary school	41	24.8
Secondary school	46	27.9
Higher education	60	36.4
Mode of delivery		
Vaginal	65	39.4
Cesarean section	100	60.6
Site of delivery		
General hospital	113	68.5
Private hospital	33	20.0
Home delivery (Midwife)	19	11.5
Side of UDT		
Left	91	55.2
Right	56	33.9
Bilateral	18	10.9
Detection of UDT		
First noticed < 1 year of age	102	61.8
First noticed 1 - 5 years of age	43	26.1
First noticed > 5 years of age	20	12.1
Presentation to urologist or pediatric surgeon and management		
Before 1 year of age	67	40.6
After 1 year of age (Late)	98	59.4

As shown in table (2), mother was the most common person who noticed the empty scrotum (60%), then the doctors (26.7%).

Table 2: Distribution of study patients by the person who noticed the empty scrotum.

Who noticed the empty scrotum ?	No. (n= 165)	Percentage (%)
Mother	99	60.0
Doctor	44	26.7
Patient	6	3.6
Grandmother	5	3.0
Father	4	2.4
Delivery nurse	4	2.4
Brother	3	1.8

The most common reason for late presentation was a lack of awareness that the testicles had not descended even

before presentation (23%); then the referral was delayed (17.6%) as shown in Table (3).

Table 3: Expected reasons for late presentation of patients

Reason	No. (n=165)	Percentage (%)
Not aware that the testes did not descend before presentation	38	23.0
Delayed referral	29	17.6
Presented to a hospital earlier but was asked to wait for descent without time limit	12	7.3
Failure to comply with recommended follow-up schedules	5	3.0
Economic restriction	2	1.2
Late ascent of a testis previously sited in the scrotum	9	5.5
Believes that the testis will still descend	3	1.8

We noticed that the highest prevalence of late presentation and management was seen significantly among patients who lived in rural area ($P= 0.001$), whose mothers had low educational level ($P= 0.01$), who delivered by vaginal delivery ($P= 0.016$), and who delivered in general hospitals or at home ($P= 0.001$).

No clear statistically significant associations ($P \geq 0.05$) between prevalence of late presentation and management with family history of UDT or father education.

Table 4: Association between late presentation and management with certain details.

Variable	Presentation and management		Total (%) n= 165	P - value
	Late (%) n= 98	Early (%) n= 67		
Residence				
Urban	47 (49.0)	49 (51.0)	96 (58.2)	0.001
Rural	51 (73.9)	18 (26.1)	69 (41.8)	
Family history of UDT				
Yes	10 (45.5)	12 (54.5)	22 (13.3)	0.152
No	88 (61.5)	55 (38.5)	143 (86.7)	
Father education				
Illiterate	8 (66.7)	4 (33.3)	12 (7.3)	0.657
Primary school	20 (62.5)	12 (37.5)	32 (19.4)	
Secondary school	41 (62.1)	25 (37.9)	66 (40.0)	
Higher education	29 (52.7)	26 (47.3)	55 (33.3)	
Mother education				
Illiterate	13 (72.2)	5 (27.8)	18 (10.9)	0.01
Primary school	32 (78.0)	9 (22.0)	41 (24.8)	
Secondary school	24 (52.2)	22 (47.8)	46 (27.9)	
Higher education	29 (48.3)	31 (51.7)	60 (36.4)	
Mode of delivery				
Vaginal	46 (70.8)	19 (29.2)	65 (39.4)	0.016
Cesarean section	52 (52.0)	48 (48.0)	100 (60.6)	
Site of delivery				
General hospital	78 (69.0)	35 (31.0)	113 (68.5)	0.001
Private hospital	7 (21.2)	26 (78.8)	33 (20.0)	
Home delivery (Midwife)	13 (68.4)	6 (31.6)	19 (11.5)	

DISCUSSION

UDT is a frequent pediatric condition and one of the most common congenital disorders.^[3] The push for early orchidopexy stems from a growing understanding of the cryptorchid testis' progressive histological changes from infancy that include: decreased Leydig cells, declined in the amount and development of germ cells, and the hazard of later tumor formation. They were shown to be more pronounced after the age of 12 months in UDT. In the literature, a raise incidence of testicular germ cell cancers has been linked to UDT.^[13] The best time to correct UDT has been a point of contention, although most studies now agree that UDT should be treated between the ages of 6 and 18. This is due to the fact that after 6 months, the testes are less prone to spontaneously degrade.^[14] While concerns concerning the age at which orchidopexy should be performed have been raised in the past, delayed orchidopexy remains a widespread issue. Many canters from all around the world, as well as numerous studies on late detection of cryptorchidism, continue to report the average age of orchidopexy being older than the suggested age.^[15,16] The results of our study confirmed that 113 boys (68.5%) born at hospital (most of them vagina delivery at public hospital. Because of inadequacy of skilled medical personnel, numerous of these facilities where children are delivered are not carefully evaluated and followed up on, and they are often staffed by one or two medical physicians, a small number of trained nurses, and a large number of nurse assistants. It is best to evaluate the newborn immediately after birth, carefully within the first two days, and again

six weeks later.^[5] This disorder of non adherence to new born checking guidelines caused delayed presentation of UDT was also confirmed by 2 another results. Firstly, just 40 boys (24.2%) initially discovered with absence of the testis in the scrotum by the medical personnel either the doctor or the nurse. Secondly, nearly all patient caregivers reported to our hospital self-referral predominantly by the mother in 99 (60%) cases. Therefore, it must be emphasized that health workers should be provided with an education about management protocols. Only 40 patients (24.2%), UDT was first noticed at birth, Majority of cases (98 boys, 59.4%) had surgical treatment after one year of age, only 67 (40.6%) had surgical operative within one year of age. Our findings back up prior research, which found that missed diagnoses at birth and physician delays in sending patients for therapy appear to be key determinants in delayed diagnosis and treatment.^[10] According to several studies, the most prevalent cause of late cryptorchidism detection is a lack of medical screening. They also recommended that all health workers, especially physicians performing observational operations, be comprehensively trained in the testicular examination technique in newborns and children at an early age, as well as knowing when to refer boys with UDT over the age of 6 months to surgeons.^[17,18] Physicians are mostly responsible for patients' late appearance, and pediatricians and other practicing physicians have stated that a thorough clinical examination and checking at birth by pediatricians and other practicing physicians is required. They suggested that both the public and the

medical professions receive comprehensive training in this area.^[5]

Other possible causes for the delay include parental ignorance or misinformation about the need for surgery and UDT problems, as well as parental ignorance. On the other hand, one of the major reasons for treatment delays is the lack of expertise of the parents. In conclusion, a missed diagnosis at a younger age is the etiology of this illness. The testis is not totally descended, but it is nearly so. Since the space between the apparently terminal area of the descending testicle and the scrotum grows with physical development, the diagnosis becomes clearer. Because of the risk of this disease, periodic physical examinations during adolescence are required to confirm intrascrotal testicular placement.

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