

Original article

# Factors Accounting for Late Presentation and Treatment of Undescended Testis

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## Abstract

Undescended testis (UDT) is one of the most common endocrine disorders in male. Approximately 1.0–4.6% of term neonates are affected. This study aimed to detect the suspected causes of late presentation of UDT patients in Libya. We performed a single-centre prospective analysis of all patients who underwent orchidopexy between January 2020 and December 2021 at the urology department at Zliten Medical Center (ZMC) in Libya. Data was obtained from patients' files retrieved from the central archives which included the personal characteristics, time of diagnosis, time of management and cause of delayed management. Out of 189 cases, 82.53% (156 case) of them were at a later age (older than 18 months). The oldest age among the cases was 38 years of age. Most of the cases were on the left side 56,60% (90 case), 83% (130 cases) were operated at the same age of diagnosis, with a difference of about 3 months, 94 case (60%) the first notification of an empty scrotum was detected by pediatricians during neonatal examination. Public awareness regarding UDT and to take more attention from our colleagues in medical field is required.

**Keywords:** Immunity, Immunoglobulins, IgM, IgG, Infectious Diseases.

## Introduction

Undescended testis (UDT) is one of the most common endocrine disorders in male pediatrics [1]. It is defined as failure of testis to descend into its normal position (scrotum) at birth [2], or cannot be brought down during a physical examination into the scrotum (3). Approximately 1.0–4.6% of term neonates are affected [3]. Preterm have a higher incidence (30-45%) [4,5]. In newborns with undescended testes, the incidence drops to 0.8–1.2% by one year of age because in 75% of full-term neonates and 90% of premature newborn boys, the testes may descend into the scrotum during infancy [6,7,8]. UDT might be unilateral or bilateral, with the right-side accounting for 70% of cases. UDT can be in an ectopic position (typically in the superficial inguinal pouch or perineal, rarely perirenal) or along the normal line of descent (abdomen, inguinal canal, external ring, prescrotal, upper scrotal) [4]. According to the results of the clinical examination, 20% of UDT are non-palpable and are found in the abdominal cavity, while the remaining 80% of UDT are palpable and are found in the upper scrotum (45%), the inguinal canal (20%), the perineum and the thigh (5%) [9]. UDT can be diagnosed clinically. A qualified individual should do the examination [10]. It is debatable whether imaging studies should be used to diagnose testes that are impalpable. Impalpable testes should now be checked by laparoscopic surgery, either with or without radiographic guidance, according to current recommendations [11]. According to recent research, an undescended testicle has the ability to descend spontaneously within the first three months of life and is less likely to do so after six months of age [12]. So that, any UDT beyond the age of six months should be sent for orchidopexy [13], It is widely advised that, orchidopexy to be done before 12 months of age [5,14]. Even with a successful therapy, UDT may have long-term effects on testicular function, such as disrupted spermatogenesis and an increased risk of testicular cancer [14]. However, the testicular damage can be decreased significantly when orchidopexy performed at earlier age. In this article, we trying to find an answer for this question: Why we still seeing a child with UDT at advanced ages in spite of all recent recommendations? which is might be due to delayed diagnosis, missed diagnoses, family neglect, delayed doctor referrals during neonatal screening. This study aimed to detect the suspected causes of late presentation of UDT patients in Libya.

### Methods

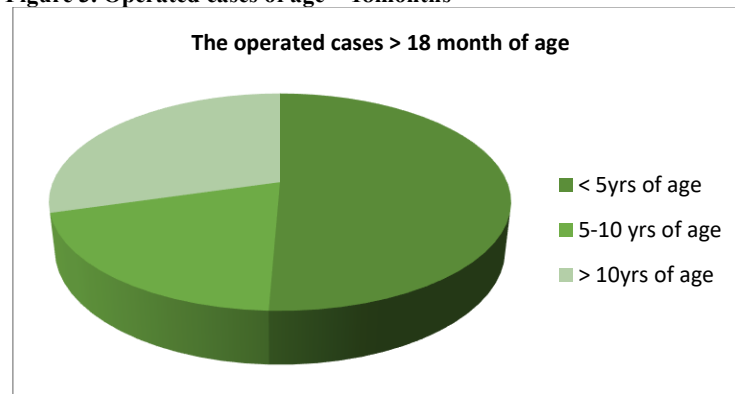
We performed a single-centre prospective analysis of all patients who underwent orchidopexy between January 2020 and December 2021 in the urology department at Zliten Medical Center (ZMC) in Libya. After hospital ethical committee approval for collecting the data from the center medical statistics department, data was obtained from patients' files retrieved from the central archives. A form of worksheet was prepared for data collection and filled out for every patient to obtain the all-relevant data which included the personal characteristics, time of diagnosis, time of management and cause of delayed management.

### Results

This study included an UDT cases that received treatment at a later age than recommended and underwent an operation for a period of two years (from January 2020 to December 2021) at Zliten Medical Center.

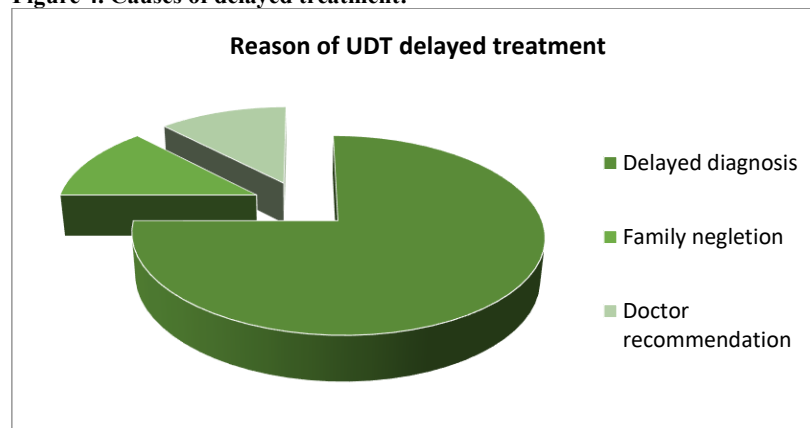
As the total number of UDT cases that underwent the operations during these two years was 189, An 82.53% (156 case) of them were at a later age (older than 18 months). the oldest age among the cases was 38 years of age.

**Figure 3. Operated cases of age > 18months**



Most of the cases were on the left side 56,60% (90 case), while the right side represented 23.07% (36 case), and the bilateral UDT represented 19.23% (30 case). Most of the cases 83% (130 cases) were operated at the same age of diagnosis, with a difference of about 3 months, while the remaining 17% (26 cases) were operated on at a later age despite the early diagnosis. In most cases, 94 case (60%) the first notification of an empty scrotum was detected by pediatricians during neonatal examination, followed by 24 case (15%) was at the time of circumcision, 29 case (19%) that were observed by their families, while only 9 cases were detected by urologists (6%). Regarding the diagnosis confirmation, In most of the cases 134 (86%) the diagnosis was confirmed by urologists, followed by general surgeons with 22 cases (14%). The main reason for the delay in receiving appropriate treatment is the delay in diagnosis in 117 case (75%), followed by the neglect of parents in 20 case (12.82%), while the doctors' recommendation was the third reason in 19 case (12.17%), and this recommendation in the all cases were by a general surgeon.

**Figure 4. Causes of delayed treatment:**



### Discussion

This study was conducted at Zliten Medical Centre (ZMC) in Libya, where UDT cases seeking medical advice come from all across the country. The registered cases were dispersed throughout the majority of Libyan cities, not just the study city. Considering the number of registered surgeries that were performed during the two years of the study, it is considered relatively less than the number of

operations in the previous years, the reason may be related to Covid-19 pandemic, which forced us to stop scheduled elective operations several times, as our city (Zliten) were an active hot area of Covid-19 cases.

When comparing the number of cases attended at the age of more than 18 months with the total number of the operated cases, the ratio is considered a dangerous indicator, as it represents more than 75% of the total registered cases and this is against the all recommendations of the recent literature, which recommend that the surgery should be the first-line treatment modality and should be performed at age before 18 months. Recently the recommended age for orchidopexy was reduced to below 1 year [15]. After one year of age, the incidence of azoospermia in cases of unilateral and bilateral undescended testis that have not been treated varies from 13% to 89%, respectively [16,17]. Our results showed that more than half of the cases were above the age of five years and more than a third of the cases exceeded 10 years of age. And the bilateral UDT represented 19.23% (30 case). Most of the cases 83% (130 cases) were operated at the same age of diagnosis, with a difference of about 3 months and this is considered as a good thing, But the problem in the rest of the cases 17% (26 cases) which despite the early diagnosis, their operations did not take place until a later age. Perhaps the parents were not aware that each delay will increase the testicular damage.

In 60% of cases the first notification of an empty scrotum was detected by pediatricians during neonatal examination and this mean a 40% was missed. We have to know the exact cause of this missing, if the pediatricians forgot to do genital examination as a part of general examination or they didn't know how to do the proper examination. Because it is illogical for a 10-year-old child who visit the pediatric clinic at least once a year, and the pediatrician did not notice that the scrotum was empty and testis not present unless he did not examine the genitalia. It should also be noted that a large percentage of the cases were circumcised, and the doctor did not notice that the scrotum was empty except in 15% of cases. Only in a small percentage of cases, the absence of testicles was noticed by the mother and in some cases by grandmother, and this reflects the society's lack of awareness of the importance of this issue. Regarding the diagnosis confirmation, it was confirmed by urologists and general surgeons, And here we note the complete absence of pediatric surgeons, may be due to a limited number pediatric surgeons in our city.

According to our results, the reasons of late presentation and management of UDT is: delay in diagnosis, family neglect and doctor recommendations respectively. The delay in diagnosis was discussed above and the most important points related to delayed diagnosis was the missing during neonatal examination, ignorance of genital examination during visits of pediatric clinic and in preschool visit.

Regarding the family neglect, most of patient's family didn't know the effect of this delayed treatment on the testis and its responsibility on multiple problems later on. Patients with undescended testes should be treated early because of increased risk of infertility, testicular cancer, torsion and/or accompanying inguinal hernia (>90%), as well as because of cosmetic concerns [18,19,20]. Some families mentioned that the low economic state was the cause of their neglect and they didn't know as these type of operations was available in public hospitals. Some doctor recommendations was strange, because they recommend this delay for surgery up to the age of 5 years, and all of them were a general surgeon.

### Conclusion

Even decades after proved that: delay in UDT treatment had a correlation with many health issues, such as torsion, infertility and malignant changes, we are still having young boys presenting very late with undescended testes. Even among medical staff, it appears that undescended testes have not received enough attention. We look to increase public awareness regarding UDT and hop to take more attention from our colleagues in medical field.

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