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Research Article

Factors Responsible for Late Presentation of Boys with Undescended Testis: A Single Centre Experience

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Abstract

Introduction: Undescended testis is failure of descent of one or both testes. Delayed surgery reduces the fertility index of the testis. Also causes increase rate of malignancy, testicular torsion and trauma. Current Guidelines Recommends Orchidopexy done within 6-12 months of age.

Objective: To understand the current reasons behind the late presentation of boys with undescended testes.

Methods: An Observational, Cross-sectional study was conducted in Kanti Children's Hospital from November 2023 to November 2024. Ethical Approval was taken from Institutional Review Committee of the Hospital. Any boy presenting with undescended testis after the 12 months of age was considered as delayed presentation.

Results: Out of the 385 boys, mean age of presentation to our hospital was 3.9 years (12 months-14 years). Mean age of first presentation to a doctor regarding this problem was 1.7 years (5 months to 7 years). 80% of the parents had visited the health professionals previously and were advised for surgery at later age. 48% were advised for surgery at 2-5 years, 35% were advised at 1-2 years and 17% were advised after 5 years of age by doctors/health professionals. 91% of the boys were born in hospitals whereas, 9% were born at home. 92% of the parents had no prior knowledge about the undescended testis, the time of descend and its complications.

Conclusions: The lack of awareness about the undescended testis among the parents were high. However, the lack of knowledge regarding the timing of descend of testis and timing of surgery among the doctors were very high. Lack of screening programs for congenital anomalies were identified.

Keywords: Anomalies; Congenital; Referral; Screening; Undescended Testis

Introduction

Undescended Testis (UDT), also known as Cryptorchidism, is a common congenital anomaly which refers to the failure of descent of one or both testes into the scrotum [1,2]. About 2% to 4% of full-term male newborns have cryptorchidism [2-4]. Cryptorchidism has been identified as a risk factor for testicular cancer [6-9]. It is also associated with compromised fertility and testicular torsion [7-10]. However, early detection and management of UDT can reduce infertility and increase the cancer detection rate and prevent other complications [11,12]. Therefore, surgical correction (Orchidopexy) is recommended at 6-12 months of age [2,9,13].

Currently, the main problem in these patients is the delay of presentation. Many of studies suggests that lack of education, comprehensive examinations and delay in by healthcare providers contribute in delayed presentation [8,14-16]. There is also lack

of awareness among parents. The objective of this study was to evaluate the causes of delay in proper treatment of patients with UDT in our population.

Methods

An observational, cross-sectional study was conducted in Kanti Children's Hospital for 12 months period from November 2023 to November 2024. Ethical Approval was taken from Institutional review committee of the hospital (Ref. No.:708, Registration No.: 18/2023) and parental consent taken. Any boy presenting with undescended testis after the 12 months of age was considered as delayed presentation was included in the study, boys presenting at or before age of 12 months were excluded.

Sample size was calculated as follow:

n= Z2 X p X (1-p) / E2

n is the required sample size

Z is the Z-score corresponding to the desired level of confidence (e.g., 1.96 for 95% confidence level)

p is the estimated prevalence of late presentation (expressed as a proportion, between 0 and 1)

E is the desired margin of error (expressed as a proportion, between 0 and 1)

n = (1.96)2 X 0.5 X (1-0.5) / (0.05)2

n = 384.16

n = 385

Questionnaire was used to collect data regarding demographic characteristics, place of birth, education background of the parents, side of the UDT, age at presentation, age at first presentation to health professionals regarding this problem, age at referral, any previous knowledge about UDT, its complications and timing of surgery, reason of delayed presentation. Patients were enrolled from OPD after taking consent. Age was calculated with mean and other factors were represented as 'n' that is number and percentage. Microsoft Excel used for data analysis.

Results

Out of the 385 boys, 53% were right sided, 38% were left and 9% were bilateral (Fig. 1). Mean age of presentation to our hospital was 3.9 years (12 months-14 years). Mean age of first presentation to doctor regarding this problem was 1.7 years (5 months to 7 years). 91% of the boys were born in hospitals whereas, 9% were born at home (Fig. 2). 92% of the parents had no prior knowledge about the ideal timing of descend of testis and 97% had no prior knowledge about the complications of UDT. 80% of the parents had visited the doctors/health professionals previously and were advised for surgery at later age. 48% were advised for surgery at 2-5 years, 35% were advised at 1-2 years and astonishing 17% were advised after 5 years of age by doctors/health professionals (Fig. 3). Some other Factors such as place of living, Education background of parents and financial constraints are shown in Table 1.

Place of Living	Rural: 73% (281)	Urban: 27% (104)
Parents Education	Mother Pre-Higher Secondary: 85% Post-Higher secondary:15%	Father Pre-Higher Secondary:78% Post-Higher secondary:22%
Financial Constraint	Yes:18%	No:82%

Table 1: Some factors of late presentation (n=385).

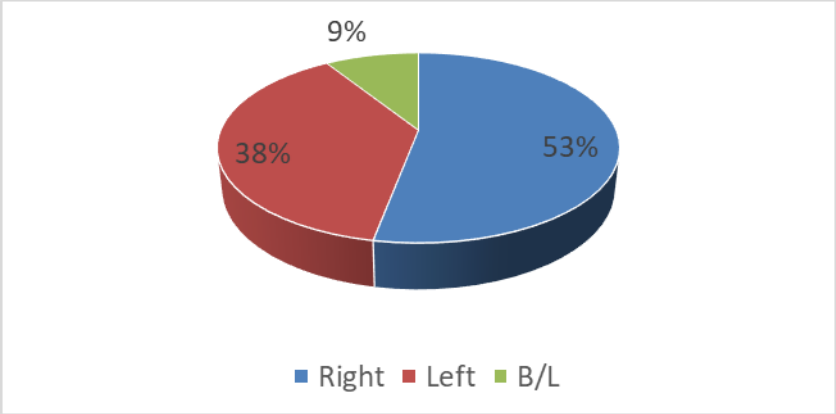

Figure 1: Side of undescended testis (n=385).

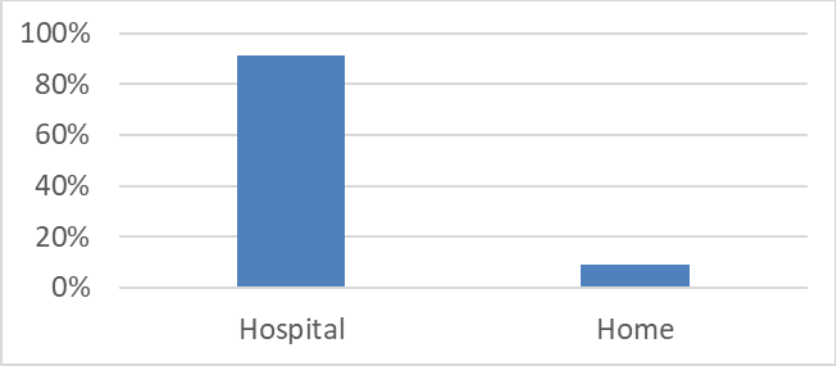

Figure 2: Place of Birth(n=385).

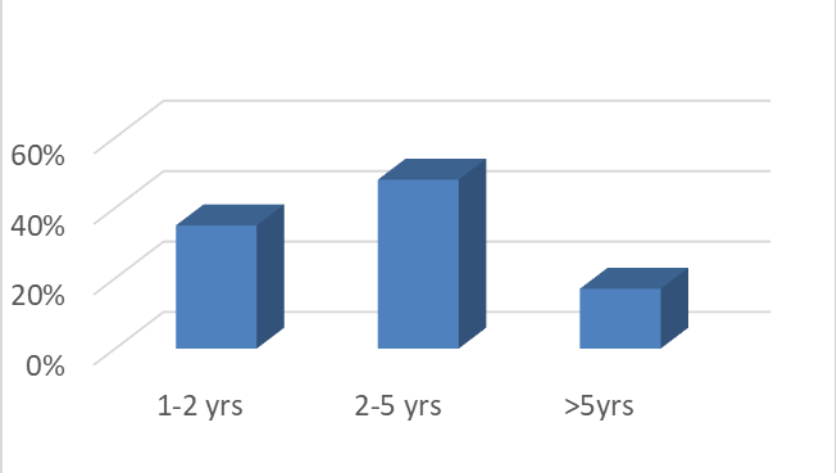

Figure 3: Age at referral for surgery(n=385).

Discussion

The delayed presentation of boys with undescended testis is a significant concern in paediatric healthcare due to the increased risk of cancer, torsion and infertility. To understand the factors contributing to this delay, a comprehensive analysis is necessary. This analysis reveals a complex interplay of factors within the healthcare system and socioeconomic context [5,6,9].

In our centre, boys with undescended testis were found to have a delay in presentation, with an average age of 3.9 years. However, their first presentations to doctors or health professionals occurred at a younger age, with an average age of 1.7 years, which is still late.

One notable factor identified in the study is the lack of awareness among parents regarding undescended testis and its

implications. Nearly 92% of parents had no prior knowledge about this condition, including the timing of descent and 97% had no prior knowledge about its complications. This lack of communication about the importance of early diagnosis and intervention during prenatal and postnatal care may contribute to delayed presentation [3,5]. Raising awareness among parents through social media, educational campaigns and other means could help bridge this gap in understanding. Other factors, such as place of birth and parents' educational background, may also contribute to delayed presentation and lack of knowledge about undescended testis. For example, 73% of the boys in our study came from rural areas and a significant number of parents had not completed higher secondary school.

Sociocultural influences also play a significant role in delaying the presentation of genital abnormalities [7,13]. Cultural norms and misconceptions surrounding these conditions can discourage parents from seeking timely medical attention. Access to healthcare services is another crucial factor contributing to delayed presentation. Geographical and economic barriers can limit families' ability to access timely medical care, resulting in further delays in diagnosis and intervention [6,14]. Overcoming this challenge requires advocating for improved healthcare infrastructure, particularly in underserved areas and implementing strategies to reduce economic barriers to accessing paediatric healthcare services.

Parental perceptions and attitudes towards surgical interventions are also significant in this discussion. Anxiety or fear related to the surgical aspect of treatment can lead to delays in seeking medical attention. Therefore, it is essential to provide interventions that address and inform parental concerns, as well as offer support throughout the decision-making process, in order to mitigate delays in presentation.

Another significant finding is the delayed timing of referral for boys with undescended testis from doctors or health professionals to specialized centres. The first presentation to doctors or health professionals still happened at 1.7 years on average. However, recommendations for surgery were given at varying ages, with 48% advised for surgery at 2-5 years, 35% at 1-2 years and 17% at over 5 years. This suggests a lack of knowledge about the optimal timing of surgery and its consequences among doctors and health professionals. Disseminating knowledge about undescended testis in medical forums, conferences and symposiums could be a possible solution to address this issue of delayed referrals.

In our study, the majority 91% of the population was delivered in hospitals, while only 9% were delivered at home. There is a need to educate parents about adhering to the follow-up schedule. This also shows that there is a significant lack of screening of congenital anomalies such as undescended testis in the hospital. The doctors and nurses must be trained to screen for the congenital anomalies. It can be done through hospital visits, social medias and having providing training to the health professionals. In Nepal there is urgent need of screening program for congenital anomalies, so it could be timely treated and prevent complications due to it.

Limitation of our study is that it is a single centre study. In Kanti Children’s Hospital, mostly from rural areas presents to us. Multi-centre study needs to be done to see the various presenting time of boys with UDT. Also, as significant number of boys did not present within 12 months of age, no comparison could be done with those who presented late.

Conclusion

In conclusion, a comprehensive understanding of the factors responsible for delayed presentation of boys with UDT is imperative for implementing effective interventions. This discussion underscores the importance of multifaceted strategies, including education, cultural sensitivity, healthcare infrastructure improvements and healthcare system reforms. Addressing these factors collectively will pave the way for enhanced awareness, accessibility and timely intervention, ultimately improving outcomes for boys with UDT.

Conflict of Interests

The authors have no conflict of interest to declare.

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Ethics Approval and Consent to Participate

Not applicable for this paper.

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