

Clinico-demographic Characteristics, Associated Anomalies and Treatment Profiles of Children presented with Undescended Testis at Medical University of Bangladesh

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Abstract

Background: The most common paediatric disorder among boy is undescended testis (UDT) which is usually identified during birth and these patients require proper treatment at the appropriate time due to increased risk of torsion, infertility, testicular cancer and associated inguinal hernia(>90%) as well as for cosmetic purposes. **Objective:** The purpose of this study was to determine side, palpability, age at presentation, associated anomalies and treatment plan in our institution. **Methodology:** This retrospective study was carried out in the department of Paediatric Surgery of Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh from January 2017 to June 2019. **Results:** In this study 1.08% (213 children had UDT out of total paediatric outdoor 19803 patients) boys had UDT. They were aged from 7 months to 15 years (mean 5.61±3.81 years) at presentation. Only 16 (7.5%) patients presented within the 1 years of age in this study. 51.8% of patients presented at the age of >1yrs-5yrs. > 5yrs-10yrs of age was 33.5% cases and 13.6% of patients presented as late as 10yrs to 15 yrs. Unilateral UDT was found in 184 (86.4%) patients and bilateral was in 29(13.6%) patients. Right-sided unilateral UDT was in 112(52.6%) patients, left-sided unilateral UDT was in 72 (33.8%) patients. Palpable testis was found in 178(83.6%) patients and non-palpable found in 35(16.4%) patients. Associated anomalies of UDT were seen in 64(30%) patients. Hypospadias was in 19(08%) patients and intersex disorders were in 15 (07%) patients. Orchidopexy was done in 192(90.1%) cases and orchidectomy was done only in 4(1.9%) cases. No testis was found in 17 (08%) cases. **Conclusion:** UDT is one of the commonest disorders of paediatric age group. Very important issue is the early diagnosis and treatment of this anomaly. To treat the UDT in proper time help to optimize testicular function, earlier diagnosis of testicular malignancy, give cosmetic benefits and to prevent complications such as a clinical hernia or torsion. [Journal of National Institute of Neurosciences Bangladesh, July 2021;7(2):173-176]

Keywords: Undescended testis; children; associated anomalies

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Introduction

When one or both testes fail to descend to a normal scrotal position is called UDT and is the common genital

anomaly among boys. The prevalence of UDT is from 2% to 9% at birth¹. Most of cases testes usually descend in normal position within 6 months of age, nearly 1%

remain undescended and surgery is required². The surgical correction for UDT is that the boys with UDT have an increased risk of testicular cancer³. It has been documented that UDT inhibits the differentiation of primitive germ cells, starting at 4 to 12 months, and subsequently enable spermatogenesis⁴. Reposition of the undescended testis in wrong time causes reduction of the germ cell development and low testicular volume, resulting in diminishing the subsequent fertility⁵. There has been a general consensus that early orchidopexy improves fertility and reduces the testicular malignancy⁵. Orchidopexy should be performed before 12 month of age helping to preserve potential and avoid the risk of malignancy according to recent international guideline⁶. But a recent systematic review reported that >75% of orchidopexies were performed later than the recommended age⁷. The majority (80%) of UDT is palpable below the external inguinal ring, and orchidopexy is performed through a conventional 'groin and scrotal' approach. Nonpalpable UDT is approximately in 20.0%. Intraabdominal, canalicular within the inguinal canal or peeping just inside the internal inguinal ring UDT are in between 50.0% to 60%. Among 20.0% non-palpable testes 4.0% of all cryptorchid testes are absent and another 30.0% which is 6.0% of the total are atrophic or rudimentary⁸. In this institution the majority of boys with congenital UDT undergo orchidopexy later than the recommended age. The objective of this two and half years retrospective study among the patients presented with undescended testis in medical university hospital of Bangladesh was to determine the current trends in age at presentation, side, palpability of UDT, associated anomalies and treatment plan of undescended testis.

Methodology

In this retrospective study, the patients with undescended testes treated between January 2017 and June 2019 in paediatric surgery department of BSMMU were studied. The data were extracted from the case files included patient's age, the way of diagnosis of undescended testes, age at presentation, side involved, palpability, associated anomalies and treatment plan. As hernial sac was found in most of the UDT, it was excluded from associated anomalies. Patients with palpable undescended testes underwent open orchidopexy in day care basis. The patients with non-palpable testes required an ultrasonogram to locate the testis. When an ultrasonogram fails to locate the testis, then diagnostic laparoscopy was performed after admitting the child in the paediatric surgery ward.

Orchidopexy was done by undescended testes Fowler-Stephen's stage orchidopexy in case of intra-abdominal undescended testes. An inguinal exploration was carried out when the vas and vessels were exited through the deep ring. All flabby, very small testes were excised according to age of child. The data were analyzed using SPSS version 20.0.

Results

There were 19803 patients seen in paediatric surgery outdoor clinic from January 2017 to June 2019; of these, 213 (1.08%) had a recorded diagnosis of UDT. They were aged from 7 months to 15 years (mean 5.61 ± 3.81 years) at presentation (Table 1).

Table 1: Hospital Prevalence of Undescended testis Patients

| Disease Pattern | Frequency | Percent |
|--------------------|--------------|--------------|
| Undescended Testis | 213 | 1.1 |
| Other Diseases | 19,590 | 98.9 |
| Total | 19803 | 100.0 |

Only 16(7.5%) patients were presented within the one year of age. Maximum(51.8%) of our patients presented in this study at the age of (>1yrs-5yrs). 33.5% of patients were in (> 5yrs-10yrs) of age, and 13.6% of patients were in as late as 10yrs -15yrs (Table 2).

Table 2: Age at presentation (n=213)

| Age Group | Frequency | Percent |
|---------------------|----------------------------------|--------------|
| >6 months to 1 year | 16 | 7.5 |
| >1 year to 15 year | 197 | 92.5 |
| >1year to 5year | 102 | 47.9 |
| >5year to 10 year | 66 | 31 |
| >10 year to 15year | 29 | 13.6 |
| Total | 213 | 100.0 |
| Mean±SD | 5.61 ± 3.81(7 month to 15 years) | |

Unilateral UDT was 184(86.4%) and bilateral was 29 (13.6%). Right- sided unilateral UDT was 112(52.6%), left -sided unilateral UDT was 72 (33.8%). Palpable testis was found in 190(90.2%) patients and non-palpable found in 23(10.8%) patients (Table 3). Associated anomalies of UDT was seen in 64(30.0%) patients. Hypospaedias was in 19(8.9%) patients and intersex disorders were in 15(7.0%) patients (Table 4). Orchidopexy was done in 192(90.1%) cases and orchidectomy was done only in 4(1.9%) cases. No testis was found in 17(08%) cases (Table 5).

Table 3: Epidemiological study of UDT (n=213)

| Variables | Frequency | Percent |
|--------------------|-----------|---------|
| Side | | |
| Unilateral | 184 | 86.4 |
| • Right side | 112 | 52.6 |
| • Left Side | 72 | 33.8 |
| Bilateral | 29 | 13.6 |
| Palpability | | |
| • Palpable | 178 | 83.6 |
| • Non palpable | 35 | 16.4 |

Table 4: Associated Anomalies Detected among the Study Population (n= 213)

| Variables | Frequency | Percent |
|----------------------------|-----------|-------------|
| Associated Anomalies | 64 | 30.0 |
| Urogenital System | | |
| • Hypospaedias | 19 | 8.9 |
| • Exstrophy of bladder | 5 | 2.3 |
| • Pelvic ureteric Junction | | |
| Obstruction (PUJO) | 2 | 0.9 |
| • Hydrocele | 3 | 1.4 |
| Total | 29 | 13.6 |
| Abdominal Wall Defect | | |
| • Omphalocele | 3 | 1.4 |
| • Umbilical Hernia | 4 | 1.9 |
| • Diaphragmatic Hernia | 1 | 0.5 |
| Total | 8 | 3.8 |
| Intersex Disorder | | |
| • 45X/46XY,46XX/47XXY | 3 | 1.4 |
| • Male Pseudohermaphrodite | 4 | 1.9 |
| • Testicular Feminisation | 8 | 3.8 |
| Total | 15 | 7.0 |
| Miscellaneous | | |
| • Myelomeningocele | 3 | 1.4 |
| • Imperforate anus | 5 | 2.3 |
| • Cleft lip and Palate | 4 | 1.9 |
| Total | 12 | 5.6 |

Table 5: Treatment Plan (n= 213)

| Treatment Option | No of Patients | Percentage (%) |
|------------------|----------------|----------------|
| Orchidopexy | 192 | 90.1 |
| Orchidectomy | 4 | 1.9 |
| Absent | 17 | 8.0 |

Discussion

Undescended testes are arrested in the line of descent. Rarely, the testis may remain inside the inguinal canal or abdomen, in which case it will be nonpalpable⁹. Orchidopexy should be performed before 12 month of age helping to preserve potential and avoid the risk of

malignancy according to recent international guideline⁶. However, a systematic review had been reported that more than 75.0% of orchidopexies were performed later than the recommended age⁷.

In this study 1.1% of children had undescended testes. This study is similar to Schneuer and his colleagues¹⁰ study, where 1% of children had undescended testes. In our study, the mean age of presentation was 5.61 years. Shitta A and his colleagues¹¹ found the mean age was 4years at diagnosis. Dabbagh¹² found a mean age of 2.46 + 2.37 years in patients with undescended testis in their study.

In our study, only 7.5% children presented within the one year of age. However, Ekwunife¹³ showed in their study that it was 28.2% cases and 51.8% patients presented in this study more than 1 to 5 years of age. 33.5% patients were in more than 5 to 10 years of age and 13.6% of patients presented as late as 10 years to 15 years. However, Chitale and his colleagues¹⁴ showed that maximum of their patients (48.31%) presented before 2 years of age. In this study 23.59% patients were in 3 to 5 years of age, 14.6% cases were in 6 to 10 years of age and 13.5% patients were as late as 11 to 13 years.

Delays in diagnosis due to lack of parental awareness after birth is the main issue in our country. Other contributing factors are lack of assessment, follow-up or timely referral by general practitioners. So routine health checks after the birth of child is essential to ensure timely intervention. In our study unilateral undescended testes was in 86.4% of patients and bilateral undescended testes was in 13.6% of patients. Right-sided unilateral undescended testes was in 52.6% of patients and left -sided unilateral undescended testes was in 33.8% of patients. Sinha¹⁵ showed in their study that 80.8% cases were unilateral, whereas right-sided was 44.0% cases and left-sided was 36.8% cases and 19.2% cases were bilateral.

Usually right-sided undescended testes was more common in the previous report^{16,17}, as because right-sided testis descends later than the left. However, David and his colleagues¹⁸ showed in their study that the left-sided unilateral undescended testes was in 34(47.9%) cases whereas right -side was in 22(31.0%) cases. In this study, palpable testis was in 83.6% cases and non-palpable testis was in 16.4% of cases. Our study was nearly similar to Chitale¹⁴ study's where palpable was in 82.1% cases and non-palpable was in 17.9% cases.

In this present study, common associated anomalies were urogenital, abdominal wall defects and intersex disorders which was similar to Baker LA and his

colleagues¹⁹ studied. The incidence of undescended testes accompanying hypospadias in our study was similar to Ates U and his colleagues²⁰ studied (8.9%). In this present study orchiopexy was done in 90.0% of cases, orchioectomy was in 1.9% cases and testis was not found in 8.0% patients. Ekwunife¹³ had shown in their study that 88.0% cases were done orchidopexy; 2.0% cases were in orchioectomy and 10.0% cases were found with no testes. Undescended testes is one of the most common surgical disorders in children. The right side was most commonly affected. The majority of undescended testes were palpable and orchidopexy was the treatment of choice.

Conclusion

UDT is one of the most common disorders of paediatric age group. Very important issue is early diagnosis and treatment of this anomaly. To treat the UDT in proper time help to optimize testicular function, earlier diagnosis of testicular malignancy, give cosmetic benefits and to prevent complications such as a clinical hernia or torsion. In our institution child with UDT were admitted beyond the recommended age as diagnosis of this anomaly were rarely made by birth attendants, even though this was obvious at birth. So for improvement, must require health awareness campaign, thorough genital examination after birth and regular screening of toddlers for undescended testis.

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