

Urogenital Surgeries at Bangladesh Shishu Hospital and Institute: A Comprehensive Review

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Received: 06 June 2025

Accepted: 20 June 2025

Published: 30 June 2025

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Abstract

Background: Bangladesh Shishu Hospital and Institute, Dhaka, Bangladesh is the largest tertiary-level pediatric healthcare institution in Bangladesh, offering specialized medical and surgical care. Urogenital anomalies are among the most common congenital disorders in children, often requiring timely surgical intervention. This study aimed to analyze the frequency, types, and outcomes of urogenital surgeries performed at the hospital over a two-year period.

Methods: A retrospective descriptive study was conducted using hospital surgical records from January 2023 to December 2024. Data were extracted from operative logs, inpatient files, and outpatient department registers. All pediatric patients (0–18 years) who underwent urogenital surgeries were included. Descriptive statistics were used to calculate frequencies and percentages. Data analysis was performed using SPSS version 25.

Results: Out of 6,383 total surgeries performed during the study period, 1,448 were urogenital procedures, accounting for 22.68% of all surgeries. The most common procedures included release of labial adhesion (25.55%), circumcision (23.06%), and cystoscopic fulguration for posterior urethral valves (17.33%). Complex surgeries such as nephrectomies and exstrophy-epispadias repairs were also performed. The overall discharge rate was 93.69%, while the mortality rate was 6.31%.

Conclusion: Bangladesh Shishu Hospital and Institute, Dhaka, Bangladesh plays a vital role in managing pediatric urogenital conditions in Bangladesh. The high surgical volume and variety of procedures underscore the need for continued investment in specialized training, infrastructure, and long-term outcome tracking to further improve pediatric urological care.

Keywords: Pediatric urology, urogenital anomalies, Bangladesh Shishu Hospital and Institute, Dhaka, Bangladesh, congenital disorders, surgical outcomes, Bangladesh

1. INTRODUCTION

Bangladesh Shishu Hospital and Institute, Dhaka, Bangladesh, established in March 1972, is the largest government-supported tertiary care pediatric hospital in Bangladesh, with a current capacity of 640 beds.

As the only dedicated children's hospital in the country, it serves as a central referral center for complex pediatric medical and surgical cases, providing essential healthcare services to children from all socioeconomic backgrounds. Over the decades, the hospital has played a

pivotal role in shaping pediatric healthcare delivery, education, and training in Bangladesh.

Within the hospital, the Department of Pediatric Surgery is a well-established division that encompasses several specialized surgical units, including a dedicated Pediatric Urology Unit. This unit is responsible for diagnosing and managing a wide spectrum of congenital and acquired urogenital disorders in children, including conditions such as posterior urethral valves (PUV), hypospadias, undescended testis, vesicoureteral reflux (VUR), pelvi-ureteric junction (PUJ) obstruction, and urological malignancies such as Wilms tumor and neuroblastoma.

Pediatric urogenital anomalies represent a significant proportion of congenital malformations, with an estimated global prevalence of 3–5% among live births [1]. These conditions often require early surgical intervention to prevent long-term complications such as renal damage, urinary incontinence, and infertility [2-4]. Therefore, timely diagnosis, surgical expertise, and postoperative care are crucial to improving outcomes in this vulnerable population [5].

In recent years, advances in pediatric surgical techniques, including minimally invasive procedures and reconstructive urology, have significantly improved the management and prognosis of many of these conditions [6]. However, in resource-limited settings like Bangladesh, access to specialized pediatric surgical care remains a challenge [7-8].

This study aimed to provide a comprehensive analysis of the urogenital surgeries performed at Bangladesh Shishu Hospital and Institute, Dhaka, Bangladesh over a two-year period (January 2023 to December 2024). Specifically, it focuses on the types, frequency, and outcomes of these procedures, offering valuable insights into the surgical burden, institutional capacity, and treatment outcomes of pediatric urogenital conditions in a high-volume tertiary care setting. The findings of this study may serve as a reference for future planning, training, and policy development to further strengthen pediatric urological services in Bangladesh.

3. RESULTS

Table 1. Overall Surgical Statistics (Jan 2023 - Dec 2024)

Category	Number of Cases
Total OPD Cases	35,745
Total Admissions	8,671
Total Surgeries	6,383

2. METHODOLOGY & MATERIALS

This retrospective descriptive study was conducted at Bangladesh Shishu Hospital and Institute, Dhaka, Bangladesh, the largest tertiary-level pediatric referral center in Bangladesh. The objective was to analyze the frequency, distribution, and outcomes of urogenital surgeries performed over a two-year period, from January 2023 to December 2024.

Data were collected from the hospital’s surgical and medical records, including operative logs, inpatient files, and outpatient department (OPD) registers. The dataset included information on total OPD visits, hospital admissions, types of urogenital procedures performed, and surgical outcomes. All pediatric patients aged 0 to 18 years who underwent urogenital surgeries during the study period were included, while procedures unrelated to the urogenital system were excluded.

The collected data were compiled, coded, and analyzed using IBM SPSS Statistics version 25. Descriptive statistical methods were applied to summarize the findings. Frequencies and percentages were calculated for categorical variables to assess the distribution of various urogenital procedures, such as posterior urethral valve fulguration, orchidopexy for undescended testis, and urethroplasty for hypospadias. The overall surgical volume, as well as the proportion and frequency of urogenital surgeries among total operations, were also analyzed. Surgical outcomes, including discharge rates, postoperative complications, and mortality, were calculated as proportions of the total urogenital cases.

Ethical approval for the study was obtained from the hospital’s Institutional Review Board. As this was a retrospective analysis of anonymized data, individual informed consent was not required.

This methodology enabled a comprehensive evaluation of the trends and outcomes in pediatric urogenital surgery at a high-volume national referral center, providing valuable insight into the burden and effectiveness of surgical care in this population.

During the study period, Bangladesh Shishu Hospital and Institute, Dhaka, Bangladesh, Surgery OPD managed 35,745 cases, with 8,671 admissions and 6,383 total operations.

Urogenital surgeries accounted for 1,448 of these procedures (22.68%). The distribution of surgeries is summarized in Table 1.

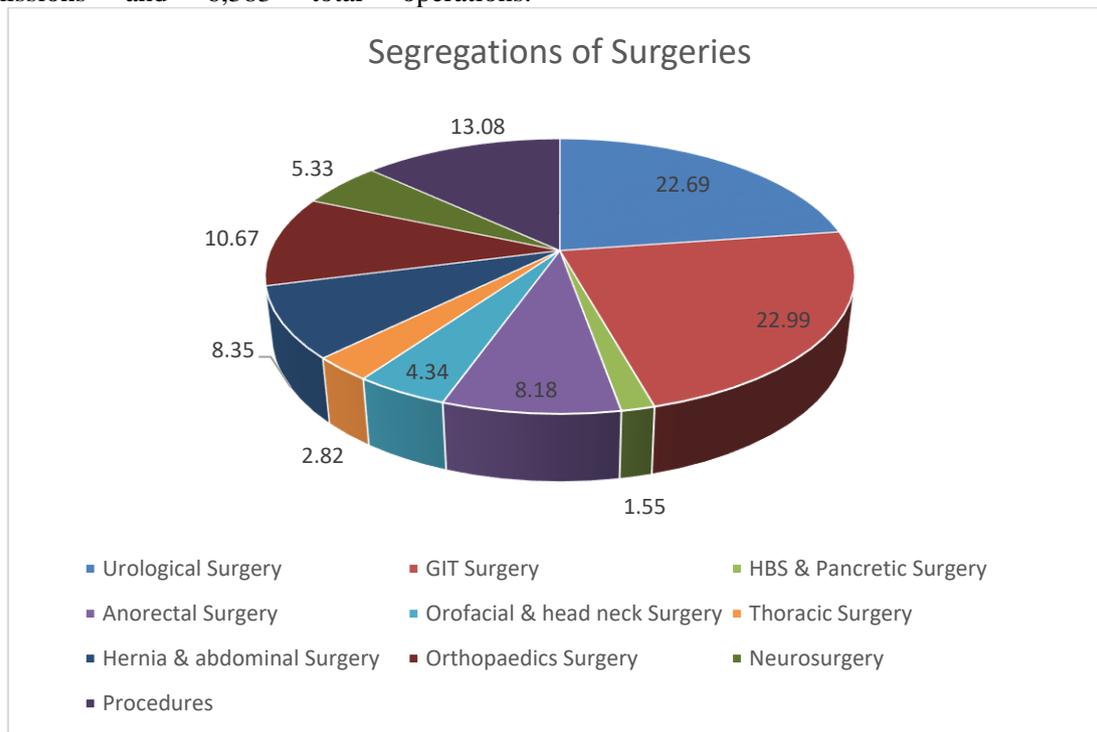


Figure 1. Segregations of total surgeries in different categories

Figure 1 illustrates the percentage distribution of all 6,383 surgeries performed at Bangladesh Shishu Hospital and Institute, Dhaka, Bangladesh between January 2023 and December 2024, categorized by surgical specialty. The two largest categories were Gastrointestinal (GIT) surgeries (22.99%) and Urological surgeries (22.69%), together comprising nearly 46% of all procedures. Other significant categories included Procedures (13.08%), Orofacial and head-neck surgeries (10.67%), Hepatobiliary and pancreatic surgeries (8.35%), and Anorectal surgeries (8.18%).

Additional contributions came from Neurosurgery (5.33%), Hernia and abdominal surgeries (4.34%), Thoracic surgeries (2.82%), and Orthopaedic surgeries (1.55%). This distribution reflects the hospital’s comprehensive surgical capabilities in managing a wide range of pediatric conditions across multiple subspecialties.

Table 2. Breakdown of Urogenital Surgeries

Surgeries	No of cases	%
Cystoscopic fulgaration For PUV	220	17.33%
Cutaneous vesicostomy For PUV	28	1.93%
Vesicostomy closure	6	0.41%
Ureterostomy for PUV	6	0.41%
Ureterostomy closure	2	0.14%
AH pyeloplasty For PUJ obstruction	78	5.93%
Cystoscopic DJ stent Removal	30	2.07%
Urethroplasty for Hypospadias	137	9.05%
Orthoplasty	18	1.24%
U.C fistula repair	18	1.24%
Ureteric Reimplantation for VUJ/ VUR	16	1.10%
Exploration for Acute scrotum	73	2.76%
Orchidopexy for UDT	118	8.15%
Nephrectomy for Wilms tumor	23	1.59%
Nephrectomy for Neuroblastoma	17	1.17%
Excision of Testicular Tumor	2	0.14%

Excision of Ovarian cyst	3	0.21%
Excision of Patent Urachus	3	0.21%
Exstrophy Epispadias Complex repair	15	1.04%
Exploration urogenital sinus anomaly	2	0.14%
Circumcision	334	23.06%
Exploration of post circumcision bleeding	13	0.90%
Meatotomy for meatal dilation	22	1.52%
Release of Labial adhesion	370	25.55%

Table 2 presents the distribution of 1,448 urogenital surgeries performed at Bangladesh Shishu Hospital and Institute, Dhaka, Bangladesh from January 2023 to December 2024. The most frequently performed procedures were release of labial adhesion (25.55%), circumcision (23.06%), and cystoscopic fulguration for PUV (17.33%). Other common

interventions included urethroplasty for hypospadias (9.05%), orchidopexy for undescended testis (8.15%), and Anderson-Hynes pyeloplasty for PUJ obstruction (5.93%), reflecting the hospital’s wide-ranging surgical expertise in managing pediatric urogenital conditions.

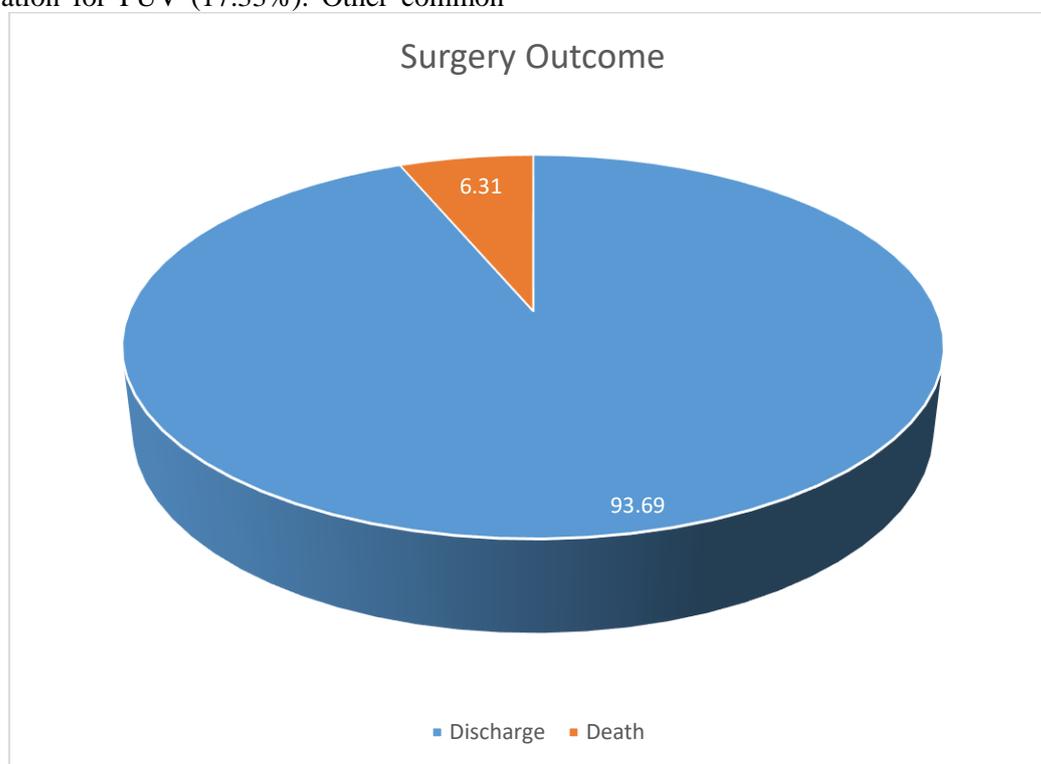


Figure 2. Surgery Outcomes

Figure 2 displays the overall outcomes of urogenital surgeries performed during the study period. A significant majority of patients (93.69%) were successfully discharged following surgery, while 6.31% unfortunately succumbed to their underlying conditions or surgical complications.

4. DISCUSSION

The findings of this study highlight the significant role that urogenital surgeries play within the overall pediatric surgical workload at Bangladesh Shishu Hospital and Institute, Dhaka, Bangladesh. Urogenital procedures accounted for 22.68% of all surgeries performed

during the two-year study period, a proportion that aligns closely with global estimates, where urogenital surgeries comprise approximately 20–25% of pediatric surgical interventions [9, 10].

This underscores the high prevalence of urogenital anomalies and the importance of specialized pediatric urological care in both developed and developing healthcare settings.

Among the most commonly performed procedures were circumcisions and release of labial adhesions, which together accounted for nearly half of all urogenital surgeries. This pattern is consistent with international data that identify these as some of the most frequent

pediatric urological issues seen in outpatient and surgical settings [9]. The high incidence of these cases reflects not only their clinical frequency but also cultural and social factors that influence parental decisions and surgical referral patterns in South Asian countries.

In addition to routine procedures, the hospital also managed a substantial number of complex and resource-intensive cases, including nephrectomies for Wilms tumor and neuroblastoma, as well as surgical repairs for exstrophy-epispadias complex. These interventions require a high level of surgical expertise, multidisciplinary coordination, and perioperative support, reflecting the institution's growing capability in handling advanced pediatric urological pathology [11, 12]. The successful management of such intricate cases further affirms Bangladesh Shishu Hospital and Institute's role as a national center for pediatric surgical excellence.

However, the presence of a 6.31% mortality rate among urogenital surgical cases calls attention to the ongoing challenges in perioperative care, particularly for high-risk and complex patients. This highlights the need for continuous investment in specialized surgical training, anesthesia, critical care, and infrastructure to reduce preventable complications and improve outcomes [13, 14]. Strengthening post-operative monitoring, implementing standardized protocols, and expanding access to minimally invasive techniques may also contribute to better patient care.

Comparative data from neighboring South Asian countries, such as India, Nepal, and Pakistan, reveal similar distributions of pediatric urological procedures, with posterior urethral valve fulguration, orchidopexy, hypospadias repair, and pyeloplasty commonly performed [15, 16, 17]. These shared patterns point to a regional burden of pediatric urogenital anomalies and highlight the importance of collaborative efforts in research, training, and policy development to improve outcomes across the region.

5. LIMITATIONS OF THE STUDY

This study has several limitations. As a retrospective, single-center analysis, the findings may not be generalizable to other healthcare settings in Bangladesh. Additionally, the lack of long-term follow-up data limited the assessment of postoperative complications and functional outcomes.

6. CONCLUSION

Bangladesh Shishu Hospital and Institute, Dhaka, Bangladesh plays a pivotal role in pediatric urogenital healthcare in Bangladesh. The hospital's ability to manage a wide range of urogenital conditions reflects its importance in the national healthcare system. Continued investment in surgical training, infrastructure, and research will be essential to sustain and enhance the quality of care provided to the pediatric population.

7. FINANCIAL SUPPORT AND SPONSORSHIP

No funding sources.

8. CONFLICTS OF INTEREST

There are no conflicts of interest.

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Citation: Dr. Ipsita Biswas et al. *Urogenital Surgeries at Bangladesh Shishu Hospital and Institute: A Comprehensive Review.* *ARC Journal of Pediatrics.* 2025; 10(4):16-21. DOI: <https://doi.org/10.20431/2455-5711.1004002>.

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