

HYPOSPADIAS REPAIR IN CHILDREN: A 5-YEAR EXPERIENCE FROM A PEDIATRIC SURGERY DEPARTMENT OF CHITTAGONG MEDICAL COLLEGE

Md. Khurshid Alam Sarwar^{1*} Tanvir Kabir Chowdhury² Md. Golam Habib² Rajib Khastagir¹ Adnan Walid³

Abstract

Background: Hypospadias a very common condition in the children and the incidence is increasing. Here we present our experience of managing hypospadias patients over the last five years.

Materials and methods: It was a retrospective study from 2014 to 2018 in the Department of Pediatric Surgery, Chattogram Medical College Hospital. Records of all hypospadias patients were analyzed and type of hypospadias, age at repair, type of repair and admission with complication of hypospadias were recorded.

Results: A total of 492 boys were admitted with the diagnosis of hypospadias and 272 boys underwent hypospadias surgery. Distal penile hypospadias (148 patients, 30%) was the commonest variety followed by coronal hypospadias (144 patients, 29%). Age at surgery ranged from 6 months to 19 years with a mean age of 7±4 years. General anesthesia was given in 133 patients (64.7%) spinal anesthesia in 93 patients (31.8%) local anesthesia in 7 patients (2.4%) and caudal block in 3 patients (1%). Urethro-cutaneous fistula, failed urethroplasty and meatal stenosis are the admissions with hypospadias complications.

Conclusion: Hypospadias is still common with substantial number of complications. Health education is necessary to reduce age at surgery.

Key words

Hypospadias; Prevalence; Urethroplasty; Urethro-cutaneous fistula.

Introduction

Hypospadias is the abnormal location of the urethra on the ventral surface of the penis and in severe cases opens onto the scrotum or perineum¹. It is often associated with incomplete development of the foreskin and abnormal penile curvature^{2,3}. It is a common congenital malformation and the prevalence is reported to be increasing, although it has a large geographical variation ranging from 2 to 43 cases per 10,000 live births^{4,5}. The incidence is reported to be one in every 300 male live births². The problem usually develops sporadically and without an obvious underlying cause¹.

The diagnosis is usually straight forward and is generally made by thorough clinical examination of the genitalia. The presentation, age and techniques of repair and results vary from center to center. The aim of the treatment is to establish a functionally normal urethra and a cosmetically acceptable penis with normal urinary and sexual functions. The ideal age for surgical repair in a healthy child has been recommended to be between 6 and 18 months of age and the availability of microsurgical instruments, fine suture material and magnification has improved the results of early surgery⁶. The present study was an attempt to report the hospital prevalence, types, management, age at repair and complications of hypospadias repair in children in a tertiary academic hospital in Bangladesh over a period of five years.

Materials and methods

This retrospective study was carried out in the Department of Pediatric Surgery of Chittagong Medical College Hospital (CMCH) over a period January 2014 to December 2018 (Total 5 years). Patients admitted and diagnosed as Hypospadias in the Department of Pediatric Surgery, CMCH were evaluated. Within the study period in a total of 492 patients were admitted.

Hospital records of patients diagnosed as hypospadias were evaluated retrospectively. Yearly departmental audits, admission registry and operating theatre registry from 2014 to 2018 were checked for type of hypospadias, age at repair,

1. Associate Professor of Pediatric Surgery
Chittagong Medical College, Chattogram.

2. Assistant Professor of Pediatric Surgery
Chittagong Medical College, Chattogram.

3. Resident of Pediatric Surgery,
Chittagong Medical College, Chattogram.

***Correspondence:** Dr. Md. Khurshid Alam Sarwar
E-mail: drkhurshidsarwar@gmail.com
Cell : 01715 14 98 77

Submitted on : 07.01.2020

Accepted on : 27.01.2020

type of repair and admission with complication of hypospadias. Follow ups of individual patients could not be included as these were not properly recorded.

Data analysis: Year wise data were compiled and compared with each other. Data were evaluated to see the yearly percentage of patient bulk, age at repair, type of anesthesia, type of surgical intervention and patients admitting with complications. Data were analyzed in Microsoft excel 2019. No statistical test of significance was done.

Results

During the study period a total of 492 boys were admitted with the diagnosis of hypospadias which is 4.03% of total patients admitted in this department. A total of 272 boys underwent hypospadias surgery which was 2.36% of all surgeries performed during that period. Distal hypospadias (362 boys, 74%) was the most common variety according to severity of hypospadias followed by proximal and mid penile hypospadias. Figure 1 shows severity of hypospadias patients and figure 2 shows yearly distribution of the patients.

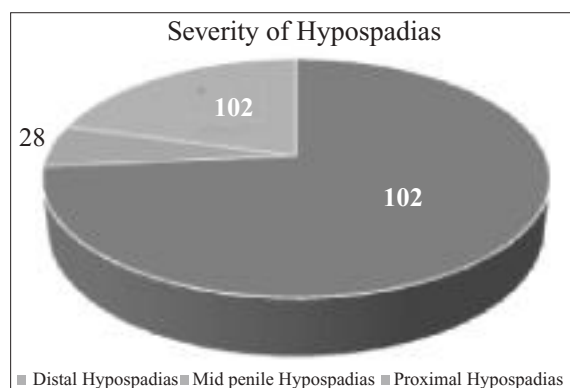


Fig 1: Severity of hypospadias.

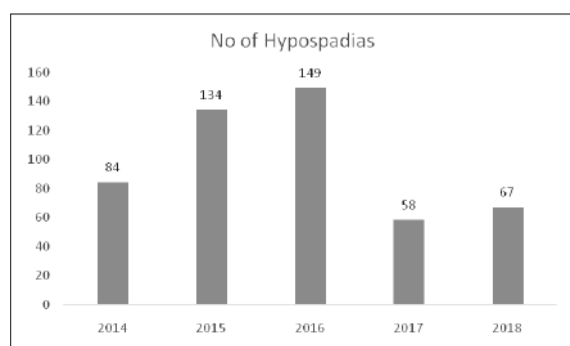


Fig 2 : Yearly distribution of patients.

Distal penile hypospadias was the most common type of hypospadias (148 patients, 30%) followed by coronal hypospadias (144 patients, 29%). Figure-3 shows different types of hypospadias admitted and table-I shows yearly distribution of different types of hypospadias.

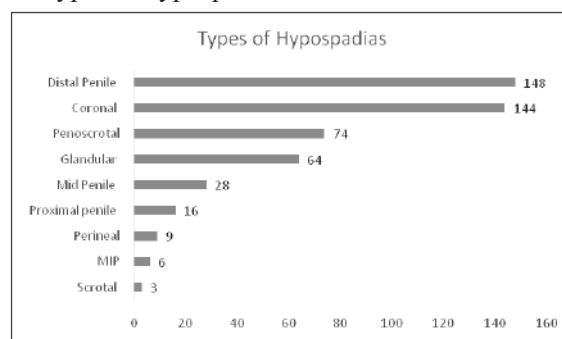


Fig 3: Types of Hypospadias admitted.

Table I : Yearly distribution of different types of hypospadias.

Year	MIP	Glandular	Coronal	Distal Penile	Mid Penile	Proximal Penile	Penoscrotal	Scrotal	Perineal	Total
2018	1	11	22	35	5	1	15	1	0	91
2017	1	8	19	23	7	3	8	0	1	70
2015	2	20	31	30	9	7	23	1	2	125
2014	0	7	22	29	4	2	12	1	1	78
2013	2	18	50	31	3	3	16	0	5	128
Total	6	64	144	148	28	16	74	3	9	492

Urethroplasty was done in 178 patients. Age at surgery ranged from 6 months to 19 years with a mean age of 7±4 years. Only 36 patients were below 2 years of age. Surgery was done under general anesthesia in 133 patients (64.7%) spinal anesthesia in 93 patients (31.8%) local anesthesia in 7 patients (2.4%) and caudal block in 3 patients (1%). These procedures were done by 11 consultants and five trainee doctors. Table-II shows different types of procedures done on the hypospadias patients.

Table II: Procedures done on hypospadias patients.

	2018	2017	2016	2015	2014	Total
Urethroplasty	33	29	38	41	37	178
Glanduloplasty	5	5	0	4	1	15
Revision urethroplasty	4	5	1	3	1	14
Orthoplasty	6	6	2	7	3	24
Repair of UC fistula	12	2	4	4	4	26
Meatotomy	1	0	0	2	4	7
Buccal mucosal graft	0	2	1	4	1	8
Total	61	49	46	65	51	272

During the study period a total of 95 patients were admitted with complications of hypospadias surgery. Table-III demonstrates patients admitted with hypospadias complication. Presented with Complications.

Table III : patients admitted with hypospadias complications.

Urethro- cutaneous Fistula	51
Recurrent fistula	9
Failed urethroplasty	30
Meatal stenosis	5
Total	95

Discussion

Hypospadias remains one of the most common congenital anomalies in children being about 4% of all admissions in this department. This is consistent with other studies who showed that it is a common disease in the children^{4,5}. The mean age at surgery was beyond the recommended age for hypospadias surgery which was due to late presentation of the patients. Early presentation and surgery before 18 months of age may prevent significant psychological co-morbidity. Admission criteria for this pediatric surgical department is below 12 years of age. However, 17 patients, who were between 13 and 19 years old, were operated here because either their previous surgery or the first stage procedure was done here.

Distal penile and coronal hypospadias were the most common varieties which is consistent with other studies⁷. Although tabularized incised plate repair is most commonly practiced in this center, type of repair could not be evaluated because of lack of documentation. The choice of the procedures over others in these cases was the surgeon's preference, which could be related to skill and experience. All these procedures were done by 16 different surgeons with varying level of expertise. The reported incidence of complications following hypospadias repair ranges from 6% to 30% and urethra-cutaneous fistula is the most common procedure². In this study follow up of the patients could not be analyzed due to lack of longitudinal data. However, during the study period 95 patients were admitted with complications of hypospadias surgery done in this department and outside of the department. This number is 19.3% of the total hypospadias admissions and 34% of the hypospadias surgery done during this period. This gives an indirect evidence that complications of hypospadias surgery is still an issue.

Limitations

This study has its own limitation of being a retrospective one as well as single centre of study.

Conclusion

Hypospadias is still common and the managements are still beyond recommended age of repair. Complications following hypospadias repair is also substantial.

Recommendations

Health education, improvement of poverty level, reducing cost of surgery, ensuring timely and proper referral might have some role in improving the scenario. At the same time expertise should be developed to improve the outcome.

Acknowledgement

We acknowledge the contribution of Mr Beakas, computer operator of Department of Pediatric Surgery for helping us in data processing.

Contribution of authors

MKAS - Concept design, data collection, manuscript writing & final approval.

TKC - Data analysis manuscript writing & final approval.

MGH - Interpretation of data, critical revision of content & final approval.

RK - Data analysis, critical revision of content & final approval.

AW - Data collection, manuscript writing & final approval.

Disclosure

All the authors declared no competing interest.

References

1. Leung AKC, Robson WLM. Hypospadias: An update. *Asian J Androl*. 2007;9(1):16–22.
2. Aisuodionoe-Shadrach OI, Atim T, Eniola BS, Ohemu AA. Hypospadias repair and outcome in Abuja, Nigeria: A 5-year single-centre experience. *African J Paediatr Surg*. 2015;12(1):41–44.
3. Huang WY, Chen YF, Guo YJ, Lan CF, Chang HC, Chen SC et al. Epidemiology of hypospadias and treatment trends in Taiwan: A nationwide study. *J Urol* [Internet]. 2011;185(4):1449–1454. Available from: <http://dx.doi.org/10.1016/j.juro.2010.11.053>.
4. Dolk H. Rise in prevalence of hypospadias. *Lancet*. 1998;351(9105):770.

5. Bergman JEH, Loane M, Vrijheid M, Pierini A, Nijman RJM, Addor MC, et al. Epidemiology of hypospadias in Europe: a registry-based study. *World J Urol* [Internet]. 2015;33(12):2159–2167. Available from: <http://dx.doi.org/10.1007/s00345-015-1507-6>.

6. Olajide AO, Sowande AO, Salako AA, Olajide FO, Adejuyigbe O. Challenges of surgical repair of hypospadias in Ile-Ife, Nigeria. *African J Urol*. 2009;15(2):96–102.

7. Prat D, Natasha A, Polak A, Koulikov D, Prat O, Zilberman M et al. Surgical outcome of different types of primary hypospadias repair during three decades in a single center. *Urology* [Internet]. 2012;79(6):1350–1354. Available from: <http://dx.doi.org/10.1016/j.urology.2011.11.085>.