ORIGINAL RESEARCH PAPER

Volume-7 | Issue-2 | February-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A CLINICAL STUDY OF HYPOSPADIAS

General Surgery

Dr Srikar Rao. N* Final Year Postgraduate, Department of General Surgery, Yenepoya Medical College and Hospital, Mangalore, Karnataka, India *Corresponding Author

Dr Rebecca. R Thaman Senior Resident, Department of General Surgery, Yenepoya Medical College and Hospital, Mangalore, Karnataka,India

Dr Ashraf Ahmed Associate Professor, Department of General Surgery, Yenepoya Medical College and Hospital, Mangalore, Karnataka,India

ABSTRACT

Background

Hypospadias is the most common congenital malformation of the penis. The prevalence has been estimated to be ~1 in 200 – 300 live male births1.An incomplete development of the anterior urethra maybe associated with excess dorsal foreskin, ventral penile curvature, diverted urinary stream and potential impairment of sexual function. This turns hypospadias into a stigmatizing condition that can be psychologically traumatic for children if not properly treated. This study aims to study the case presentation of the problem, which will help in further evaluation and management of hypospadias.

Aims and objectives

To study cases of hypospadias
I. Type of presentation
ii. Age at presentation
iii. Surgical outcome and complications

Materials and Methods

25 cases of hypospadias admitted in Yenepoya Medical College, Mangalore, were selected on the basis of non probability (purposive) method. All patients with specific complaint admitted under the department of paediatric surgery as well as those referred from other departments, neighbouring PHCs and other hospitals were included. Data was collected regarding clinical history, examination findings ,diagnosis, treatment and post operative complications. The outcome was evaluated and compared with standard published literature.

Results

The most common type of hypospadias seen in our study was subcoronal type. Most defects were noted at birth however, the most common age of presentation to the hospital was between the ages of 1 and 5 years. Most common complaint was passing urine from the undersurface of the penis About 80% of our patients underwent a one stage whereas 12 % underwent a two stage repair. 8% underwent complication correction.

Conclusion

For proximal hypospadias, a one stage repair appears to be the best method whereas in proximal hypospadias a two stage repair seems to be the best option. All repairs in the early age group are supposed to have better results.

KEYWORDS

Introduction

Hypospadias is one the most common genital anomalies in male newborns, with incidence of ~1: 300 live male births. Hypospadias is defined as anomaly involving the ventral aspect of the penis. These malformations mainly comprise of an abnormal ventral opening of the urethral meatus, an abnormal ventral curvature of the penis and/ or an abnormal distribution of the foreskin.

These ectopic urethral openings can be located at the tip of the glans penis (hypospadia sine hypospadia), glanular, coronal, and subcoronal, along the penile shaft, penoscrotal, scrotal or perineal. (N. djalovic 2008)

The precise etiology of this anomaly remains unclear, although certain risk factors can be assessed. For instance, hypospadias is known to cluster in families but little else is definitive about the genetics involved in its etiology and it still seems to be a multifactorial anomaly [2-6.] .

The main objective of hypospadias repair is to create functional penis adequate for sexual intercourse, urethral reconstruction to stand for micturition and a satisfactory cosmetic result. (y. hayashi 2008)

Dieffcnbaeh has been credited to be the founder of modem hypospadias [10] although his technique failed [19], Several attempts were made at the end of 19th century to solve the problems in hypospadias repair. Nevertheless, a quotation by Russell gives an indication of the standard of care in those days " It has been suggested that in view of the hopelessness of providing the subject with an effective sexual organ, it would be a wise and humane proceeding to perform castration in childhood."[21]. This statement suggests that though this anomaly was detected a long time ago, no clear surgery was or is available for all types of hypospadias repair. Each available technique has its pros and cons and at the end of the day, it is the treating surgeon's experience aand decision which helps in deciding the surgery.In this study we will be studying the disease with regard to the common complaint which brings the child to the doctor, age when the child presents and surgical outcome and complications of repair done.

Aim and objective of the study

To study the cases of hypospadias presenting to or referred to department of pediatric surgery in yenepoya medical college hospital, Mangalore with regard to :

i. Type of presentation
ii. Age at presentation
iii. Surgical outcome and complications

25 patients were selected randomly.

MATERIALS AND METHODS

The present study was carried out in YENEPOYA MEDICAL COLLEGE HOSPITAL after obtaining the Ethical committee clearance. The study was conducted between February 2014 and October 2015. A structured, pre-prepared case Performa was used to enter the clinical history, physical examination findings and investigations findings. Those who met the inclusion and exclusion criteria will be included in the study.

SOURCE OF DATA: Patients attending YENEPOYA MEDICAL COLLEGE HOSPITAL AND ASSOCIATED HOSPITALS

SAMPLE SIZE: 25 PATIENTS

INCLUSION CRITERIA:

1. Patients in age group 0-16 years.
2. Patients with abnormal urethral meatus opening on the ventral/ undersurface of penis from perineum to glans tip.
3. Patients operated previously.

EXCLUSION CRITERIA:
1.Patients with opening of urethral meatus on dorsal surface.

TREATMENT:
Patients who presented to Yenepoya Medical College Hospital or were referred from other departments who met the inclusion and exclusion criteria were included in the study.

After taking detailed clinical history and examination, patients' were explained about the study and included after taking informed consent. Detailed history according to pre approved performa was taken. Information regarding the main complaint, age at which problem was noticed and the age at presentation to the hospital was taken. On examination, thorough penile and scrotum examination was done and information regarding opening of meatus, urethral plate, urethral groove, glans, prepucial hood, ventral chordee and testis whether descended or undescended was taken. Any other congenital anomalies were looked for. The necessary radiological and hematological investigations were done.

Risks and complications were explained to the patients' parents. Pre operative antibiotics were given and procedure done under general anesthesia. Post operatively, dressing was done with betadene solution. Post operative urinary diversion was also given.

Patients with distal hypospadias underwent two stage repair whereas those with proximal hypospadias underwent Snodgrass urethroplasty.

Results
This was a prospective study which included 25 patients and was done from January 2014 to October 2015.

The results of our study are as follows:
1.Chief complaint
The patients' presented with chief complaints of

I. Passing urine from the undersurface of the penis
ii. Not well developed penis
iii. Curved shaft of penis

	chief complaint	Percent
curved shaft of penis	3	12
not well developed penis	3	12
passing urine from undersurface of penis	16	64
previous surgery	3	12
Total	25	100

Majority of patients presented with the complaint of passing urine from the undersurface of the penis

2.Examination findings are as follows:

On examination of penis following were looked and their incidence:
(a)OPENING OF THE MEATUS

Opening of meatus	Number of patients	Percentage (%)
Near tip of penis	4	16
Coronal	2	8
Subcoronal	8	32
Distal penile	1	4
Midpenile	3	12
Penoscrotal	3	12
At the tip of penis	4	16
Total	25	100

Majority of meatal openings were subcoronal.
(b) URETHRAL PLATE

	urethral plate	Percent
poorly differentiated	7	28
well differentiated	18	72
Total	25	100

Majority had a well developed urethral plate(72 %)

(c)URETHRAL GROOVE

	urethral groove	Percent
Absent	9	36
Present	16	64
Total	25	100

(d)PREPUCIAL HOOD

	prepucial hood	Percent
Absent	10	40
Present	15	60
Total	25	100

Prepucial hood was present in majority (60%) of cases

2. PROCEDURE :

Procedure	Number of patients	Percentage(%)
One stage repair	20	80
Two stage repair	3	12
Complication repair	2	8
Total	25	100

About 80% of our patients underwent a one stage whereas 12 % underwent a two stage repair. 8% underwent complication correction.

3. OUTCOME

	outcome
Fistula	2
good stream of urine	19
metal stenosis	1
no curvature of shaft	3
Total	25

19 patients had a good stream of urine following the correction. 3 had complications i.e. 2 developed fistula whereas 1 developed meatal stenosis. All had chordee correction.

DISCUSSION
Hypospadias is the most common congenital anomaly seen in male children. The incidence is quite high. However, with no definitive treatment available for different types of hypospadias , it remains a major problem factor for paediatric surgeons and urologists. Epidemiological variables in relation to hypospadias were analyzed in a case-control study of a liveborn population from six Latin American countries. The frequency of hypospadias was 7.6 per 10,000 livebirths (324/423,839). The cases were divided into three types: distal (72%), proximal (18.5%) and non-specified cases (9.5%). The control group consisted of the first nonmalformed child born after each of the patients and was matched by sex, place, and time of birth. Other coexisting malformations were found in 13.6% of cases. The Brazilian sample showed the highest incidence rate (17.7/10,000) and also the highest incidence of severe forms (5.0/10,000) as compared with the other countries.(Hypospadias: An epidemiological study in Latin America

Roque Monteleone Neto[1],
Professor Eduardo E. Castilla[2,*],
Joaquin E. Paz[2]and
John M. Opitz Editor
Article first published online: 2 JUN 2005
DOI: 10.1002/ajmg.1320100103

- Out of the 25 patients studied,
- 2 patients i.e. 8% had coronal hypospadias
- 8 patients i.e. 32% had subcoronal hypospadias
- 1 patient (4%) had distal penile hypospadias
- chordee without hypospadias
- 1 patient (4%) was post operative case with complication.
- Most common presenting complaint to the hospital was passing urine from the undersurface of the penis (64%) , 16 patients. Followed by 3 patients (12%) each with complaint of underdeveloped penis, curvature of shaft of penis and history of previous surgery.

- Most of the complaint was detected since birth in 21 (84%) patients.

- However, majority of patients presented to the hospital between the ages of 1 to 5 years i.e. 13 patients (52%). About 4 patients (16%) presented before the age of 1 year whereas the rest 8 (32%) presented after 5 years of age.
- 8 patients(32%) had the opening of meatus near the tip of the penis.
- Urethral plate was well developed in 72% of patients i.e. in 18 patients and poorly developed in 28% i.e. 7 patients.
- Urethral groove was present in 64% of cases i.e. in 16 patients and absent in 9 patients i.e. 36%.
- Glans was conical in 9(36%) and round in 16(64 %) patients.
- Prepucial hood was present in 15 i.e. 60% of patients and absent in 10 i.e. 40% of patients.
- Ventral chordee was present in 6 i.e. 24% of patients and absent in 19 i.e. 76% of patients.
- Testis was undescended in 2 i.e. 8% of patients whereas others (18, 92%) had normally descended testis.
- 1 patient had another congenital anomaly.
- 20 patients i.e. 80% underwent one stage repair whereas 3 (12%) underwent a two stage repair. 3(8%) had post operative complications which were treated surgically.

CONCLUSION

This was a prospective study which included 25 patients and was done between January 2014 and October 2015 at Yenepoya Medical College Hospital, Mangalore.

For proximal hypospadias, a one stage repair appears to be the best method whereas in proximal hypospadias a two stage repair seems to be the best option. All repairs in the early age group are supposed to have better results.

However, a much more extensive study which includes a larger population and different types of repair needs to be done to be able to select the best treatment modality. Hypospadia surgery is challenging. The fact that there are wide variations in the presentation and extent of malformations as well as tissue characteristics existent makes every hypospadia individual and a proposal of a universal comprehensive algorithm for hypospadia repair difficult. The Snodgrass technique has found wide popularity for the repair of distal hypospadias. As far as proximal hypospadias are concerned, their repair is complex and could in fact be seen as a form of genital reconstruction. This repair not only involves urethroplasty, but also has its goal in achieving good cosmetic results with a straight normal-proportioned penis and an orthotopic meatus in addition to the functional urethra. Even though the complication rates have decreased, thanks to modern operating materials and an improvement of current surgical techniques, there still is room and therefore need for further improvement in this field.

REFERENCES

1. Baskin L. Hypospadias :a critical analysis of cosmetic outcomes using photography. Departments of urology and paediatrics, university of California, san Francisco, CA, USA, 2001.
2. Baskin LS,Eber MB. Hypospadias: anatomy, etiology and technique. JPaediatric surgeon, 2006
3. Malone C et al. Prevalence of hypospadias in Danish boys: a longitudinal study, 1977-2005. European urology journal, January 2009, pages 1022-1026
4. Hinman F J, Baskin LS. Hypospadias: Hinman's atlas of paediatric urologic surgery. 2nd edition. Saunders Elsevier, 2008.
5. Borer J G., Retik A B. Hypospadias in Campbell-Walsh Urology. 9th edition. Saunders, 2007
6. Kraft KH, Shukla AR, Canning DA. Hypospadias.Urol Clin North Am. 2010
7. Adv Urol. 2008; 2008: 650135.Published online 2008 Oct 30. doi: 10.1155/2008/650135. PMCID: PMC2577154
8. N. Djakovic, Nyarangi-Dix J, Ozturk A, hohenfellner M. hypospadias. Advances in urology 2008
9. Bauer S.B., Bull MJ., RetikA.B. Hypospadias: a family study. The journal of Urology 121: 474-477: 1979.
10. Harris E.L. Genetic epidemiology of hypospadias. Epidemiologic Reviews 12; 29-40: 1990.
11. Roberts C.l, Lloyd S. Observations on the epidemiology of simple hypospadias. British Medical Journal 1; 768-770: 1973.
12. Zaontz M.R., Packer M.G. Abnormalities of the external genitalia. Pediatric Clinics of North America 44(5): 1267-1297: 1997.
13. Albers N., Ulrichs c., Gluer S., Hiort 0., Sinnecker G.H., Mildenberger H., Brodehl J., Etiologic classification of severe hypospadias: implications for prognosis and management. Joumal oi'Pediatrics 131 (3); 344-346: 1997.)
14. y. hayashi 2008
15. Hunter R.B. Notcs on thc development of the prepuce. Journal of Anatomy 70; 68: 1935.
16. Dieffenbach M. Guerison des [cntes congenitales de la verge. Gaz Mcd Paris 5:156, 1837.
17. Russell R. Operation for severe hypospadias. Br Med J 2; 1432, 1900.
18.. DupJay S. De !'hypospadias perineo-scrotale et de son traitcmcnt chilllrgical. Arch Gen Mcd23;513,1874.
19. Beck C. Hypospadias and its treatment . SGO. 1917; 14:511
20. Laios, Konstantinos, Marianna Karamanou, and George Androutsos. "A Unique Representation of Hypospadias in Ancient Greek Art." Canadian Urological Association Journal 6.1 (2012): E1–E2. PMC. Web. 28 Dec. 2015.