

Original Research Article

Profile of hypospadias patients at Dr. Moewardi General Hospital Surakarta period 2015-2020

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ABSTRACT

Background: Hypospadias is the second most common congenital malformation in males and the most common congenital malformation of the penis. This malformation is characterized by the anatomical position of the urinary tract opening on the ventral or anterior part of the penis. The prevalence of hypospadias in western countries around 8 of 1000 live births and is reported to increase every year.

Methods: This study is a descriptive study with a retrospective cross-sectional approach. All data were retrieved from RSUD Dr. Moewardi Surakarta using hypospadias patients medical records from January 2015 – December 2020. The hypospadias case was classified into mild, moderate, and severe hypospadias based on location. The age of being diagnosed, concomitant congenital disease, surgery technique, and surgical complication were described.

Results: There were 120 cases of hypospadias, consisted of 47.5% severe hypospadias, 34.9% moderate hypospadias and 17.4% mild

hypospadias. Patients' age of being diagnosed was most in the 1-5 years group (35.9%). Seventy-eight (75.7%) cases without concomitant congenital disease, 10.7% with undescensus testicularum, 4.8% with cyanotic congenital disease, and 3.8% with cloacal. There were 68.9% cases repaired with first-stage surgical technique and 31.1% repaired with two-stage surgical technique. Most surgical complications were meatal stenosis 9%.

Conclusions: Majority of hypospadias cases were severe hypospadias. Other profile like age of being diagnosed, concomitant congenital disease, surgery technique, and surgical complication were found in this study.

Keywords: Hypospadias, Profile, Surakarta

INTRODUCTION

Hypospadias is the second most common congenital malformation in males and the most common congenital malformation of the penis. This malformation is characterized by the anatomical position of the urinary tract opening on the ventral or anterior part of the penis.¹ The prevalence of hypospadias in western countries around 8 of 1000 live births and is reported to increase every year. The factors that cause hypospadias in most cases are unknown, although it is known that the

development of the urinary tract occurs between 7 to 16 weeks of pregnancy and is influenced by androgen levels.²

The congenital abnormalities survey in 2014-2018 showed that the percentage of hypospadias incidence in Indonesia was 4.8% from 956 cases of congenital abnormalities.³ An observational study in 2010-2012 in Central Java found 120 cases of hypospadias consist of 48.33% cases with severe hypospadias, 41.67% with mild hypospadias, and 10% with hypospadias syndrome.⁴

Several studies have shown that patients with hypospadias suffer from negative judgments about their genitalia and sexual disorders. Children with repair of hypospadias at an earlier age tend to experience less dissatisfaction and self-confidence.⁵

Based on that background, we interested to investigate the profile of hypospadias patients in Dr. Moewardi General Hospital Surakarta.

Objective

The purpose of this study was to determine the hypospadias patient profile, so that early detection of this disease can be able to provide optimal management and improve the patient's quality of life.

METHODS

This study is a descriptive study with a retrospective cross-sectional approach. All data were retrieved from RSUD dr. Moewardi Surakarta using hypospadias patients medical records from January 2015 to December 2020. The samples to be taken were all patients diagnosed with hypospadias at Dr Moewardi Hospital for the period 2015-2020 who met the inclusion and exclusion criteria.

This study's inclusion criteria were all patients with hypospadias with complete medical record data. Exclusion criteria were hypospadias patient without complete medical record data.

The hypospadias medical record data were collected retrospectively then were classified into mild, moderate, and severe hypospadias based on location. The other age of being diagnosed, concomitant congenital disease, surgery technique, and surgical complication were described. The data are grouped based on the classification of hypospadias, age of being diagnosed, concomitant congenital disease, surgery technique, and surgery complication. The collected data were input, validated, and edited using the SPSS program, version 25, before being analyzed. The data were analyzed using descriptive statistics.

This study protocol had been approved by the Head of Surgery Department, Faculty of Medicine, Universitas Sebelas Maret/Dr. Moewardi General Hospital, and the Research Ethics Committee Faculty of Medicine Universitas Sebelas Maret.

RESULTS

There were 103 cases of hypospadias (Table 1), consisted of 47.6% severe hypospadias, 34.9% moderate hypospadias and 17.5% mild hypospadias. Patients diagnosed with chordae without hypospadias were 51 cases out of 103 (49.5%) patients (Table 2). Patients' age of being diagnosed was most in the 1-5 years group

(35.9%), 25.2% in 11-15 years group, 12.6% in 6-10 years group, 10.7% in the <1 year group, 8.7% in 20-25 years group, 4.8% in >25 years group, and 1.9% in 16-20 years group. Patients diagnosed with hypospadias died as many as 5 cases out of 103 (4.8%) patients.

Table 1: Characteristics of hypospadias patients.

Characteristics	Number (%)
Age of diagnosed	
Mean	11 years
Youngest patient	11 days
Oldest patient	56 years
Site of meatus	
Glanural	20
Coronal	36
Sub coronal	24
Penile	23
Number of operation	
One stage	71
Two stage	32

Table 2: Profile of hypospadias classification.

Classification	Number (%)
Mild hypospadias	18 (17.5)
Moderate hypospadias	36 (34.9)
Severe hypospadias	49 (47.6)
Chordae without hypospadias	51 (49.5)

Table 3: Profile of age being diagnosed.

Profile of age (years)	Number (%)
Dead	5 (4.8)
<1	11 (10.7)
1-5	37 (35.9)
6-10	13 (12.6)
11-15	26 (25.3)
16-20	2 (1.9)
20-25	9 (8.7)
>25	5 (4.9)

Patients who died at birth with multiple congenital abnormalities accompanying the diagnosis of hypospadias (Table 3).

Seventy-eight (75.7%) cases without concomitant congenital disease, 10.7% with undescensus testicularum (Table 4), 7.8% with cyanotic congenital heart disease, 3.9% with cloacal, and 1.9% with congenital abdomen anomalies (volvulus, intussuception). There were 68.9% cases repaired with first-stage surgical technique and 31.1% repaired with two-stage surgical technique (Table 5). In this study, we found 79% surgical cases without any complication and 21% surgical cases with complication with the most surgical complications were

meatal stenosis 9%. Other complications, 7% with urethrocutaneous fistula, and 2% with wound dehiscence (Table 6).

Table 4: Profile of concomitant congenital disease.

Concomitant disease	Number (%)
Undescensus testicularum (UDT)	11 (10.7)
Cloacal	4 (3.9)
Cyanotic congenital heart disease	8 (7.8)
Congenital abdomen anomalies	2 (1.9)
Normal	78 (75.7)

Table 5: Profile of surgical technique.

Profile of surgical technique	Number (%)
One stage	71 (68.9)
Two stage	32 (31.1)

Table 7: Profile of surgical complication.

Profile of surgical complication	Number (%)
Urethrocutaneous fistula	8 (79)
Meatal stenosis	10 (9)
Wound dehiscence	3 (2)
Without complication	82 (79)

DISCUSSION

Hypospadias is one of the most common congenital abnormalities in men.⁶ Hypospadias develops during the embryonic period due to defects in genital development and is often associated with impaired sex formation or impaired sexual activity in adulthood.⁷

From the data, it can be seen that the highest frequency of diagnosed age is at the age of 1-5 years (Table 2). This result is different from the study conducted by Noegroho et al at Hasan Sadikin General Hospital in Bandung, where the average age of hypospadias patients was 8.5 years old. In addition, in a study by Spinger et al, from data taken from 1910-2013, hypospadias worldwide was diagnosed on average at the age of 9 years.⁸ Age of diagnosis will be related to the age at which the surgical procedure was performed. Surgical management for hypospadias can be done at any age, but most recommend surgery at 6-18 months. The American Academy of Pediatrics recommends this time interval to limit the psychological stress and subsequent behavioral problems seen in toddlers undergoing genital surgery. There are conflicting studies regarding the association of increasing age at surgery with higher complication rates.⁵ Five people were diagnosed with hypospadias at the age of > 25 years. Patients who have not been circumcised is one of the causes of diagnosis at that age because hypospadias will be clearly visible during circumcision or after the prepuce is retracted.⁹

The incidence of hypospadias accompanied by congenital abnormalities undescensus testicularum (UDT) in Dr. Moewardi General Hospital was 10.7% (Table 3). This finding is consistent with Chen et al's study in 89 subjects where the three most common anomalies associated with hypospadias were inguinal hernia (12.4%), cryptorchidism (9%), and low birth weight prematurity (7.9%).⁵ Study by Noegroho et al mentioned that 100% of hypospadias sufferers have chordae and have other abnormalities such as macropenis, penile retractile, and UDT.⁸ The second most common congenital abnormality is cyanotic CHD (VSD, ASD, TOF) (4.8%). In accordance with the findings of Lin et al. that hypospadias is a common congenital disorder in boys and often coexists with congenital heart disease. The incidence of hypospadias is related to the type of congenital heart disease, and both may have common pathogenic factors.¹⁰

On observation of surgery, urethrocutaneous fistula in 7% cases, 9% meatal stenosis complications and 2% wound dehiscence (Table 5). Complications that often occur after repair of hypospadias are urethrocutaneous fistula, meatal stenosis, urethral stenosis, glans dehiscence, urethral diverticulum, recurrent or persistent penile curvature disorders, erectile dysfunction, and balanitis xerotica obliterans.¹¹

In line with the study of Mensah et al, of 123 hypospadias patients. who underwent surgery, complications that occurred were 18% urethrocutaneous fistula, 2% meatal stenosis, 7% meatus retraction, and 72% without complications.¹²

Limitations

The small sample size was a limitation of the present study.

CONCLUSION

The total number of hypospadias cases at Dr. Moewardi General Hospital Surakarta from 2015-2020 was 103 patients. The most diagnosed patients were in the 1-5-year age group and 24.3% patients accompanied by other congenital abnormalities. From all these data, all patients underwent surgery with 21% patients experiencing complications of urethrocutaneous fistula, meatal stenosis, and wound dehiscence.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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