

CLINICAL PROFILE OF PATIENTS WITH HYPOSPADIAS IN SAIFUL ANWAR GENERAL HOSPITAL, MALANG

¹ Fenni Henrizal, ¹ Besut Daryanto, ¹ Pradana Nurhadi.

¹ Department of Urology, Faculty of Medicine/University of Brawijaya, Saiful Anwar General Hospital, Malang.

ABSTRACT

Objective: This study aims to present the clinical profile of hypospadias patients in the Urology Department of Saiful Anwar Hospital. **Material & Methods:** This retrospective study analysed the characteristics of delayed hypospadias cases at Saiful Anwar General Hospital in Malang. The study utilized a descriptive design with a quantitative approach, conducted from January 2019 to February 2024. All patients with hypospadias who visited were included in this study. Data were presented in percentage format to illustrate the distribution of cases. **Results:** Among the 250 patients, 242 (97%) were classified as having a delayed diagnosis. Of all the cases, 141 (56%) were located in Malang. Proximal hypospadias was the most prevalent anomaly, affecting 131 (52%) of the patients. Additionally, there were 88 cases (35% of the total) of mid-shaft hypospadias and 31 cases (13% of the total) of distal hypospadias. Out of the total, 39 patients (16%) had undescended testis (UDT), while 53 patients (22%) had bifid scrotum as an additional condition. Of the 46 patients, 18.4% experienced preterm labor; and approximately 78% of the newborns, specifically 194 of them, had a birth weight over 2500 grams. The healthcare provider participated in 226 out of 232 births, accounting for 97% of the total. The condition was primarily diagnosed by obstetricians, who identified 42% of cases, while midwives identified 58% of the cases. **Conclusion:** Most hypospadias patients presenting at Saiful Anwar Hospital are diagnosed late, with proximal hypospadias being the most prevalent type. Accompanying conditions include bifid scrotum, occurring in 22%, and undescended testes, present in 16% of cases. This finding presents a potential opportunity to enhance the standard of care.

Keywords: Hypospadias, UDT, bifid scrotum.

ABSTRAK

Tujuan: Penelitian ini bertujuan untuk menyajikan profil klinis pasien hipospadia di Departemen Urologi Rumah Sakit Saiful Anwar. Penelitian ini bertujuan untuk menyajikan profil klinis pasien hipospadia di Departemen Urologi Rumah Sakit Saiful Anwar. **Bahan & Cara:** Penelitian retrospektif ini menganalisis karakteristik kasus hipospadia tertunda di Rumah Sakit Umum Saiful Anwar Malang. Penelitian ini menggunakan desain deskriptif dengan pendekatan kuantitatif, yang dilakukan dari Januari 2019 hingga Februari 2024. Semua pasien hipospadia yang berkunjung diikutsertakan dalam penelitian ini. Data disajikan dalam format persentase untuk menggambarkan distribusi kasus. **Hasil:** Di antara 250 pasien, 242 (97%) tergolong memiliki diagnosis tertunda. Dari semua kasus, 141 (56%) berlokasi di Malang. Hipospadia proksimal merupakan anomali yang paling umum, mempengaruhi 131 (52%) pasien. Selain itu, ada 88 kasus (35% dari total) hipospadia mid-shaft dan 31 kasus (13% dari total) hipospadia distal. Dari total, 39 pasien (16%) memiliki testis yang tidak turun (UDT), sementara 53 pasien (22%) memiliki skrotum bifid sebagai kondisi tambahan. Dari 46 pasien, 18.4% mengalami persalinan prematur; dan sekitar 78% bayi baru lahir; khususnya 194 dari mereka, memiliki berat lahir lebih dari 2500 gram. Penyedia layanan kesehatan berpartisipasi dalam 226 dari 232 kelahiran, yang mencakup 97% dari total. Kondisi ini terutama didiagnosis oleh dokter kandungan, yang mengidentifikasi 42% kasus, sementara bidan mengidentifikasi 58% kasus. **Simpulan:** Sebagian besar pasien hipospadia yang datang ke Rumah Sakit Saiful Anwar didiagnosis terlambat, dengan hipospadia proksimal menjadi jenis yang paling umum. Kondisi yang menyertainya termasuk skrotum bifid, terjadi pada 22%, dan testis yang tidak turun, terjadi pada 16% kasus. Temuan ini menghadirkan peluang potensial untuk meningkatkan standar perawatan.

Kata Kunci: Hipospadia, UDT, skrotum bifid.

Correspondence: Besut Daryanto; c/o: Department of Urology, Faculty of Medicine/University of Brawijaya, Saiful Anwar General Hospital, Jl. Jaks Agung Suprpto No.2, Klojen, Kec. Klojen, Malang, Jawa Timur 65112, Indonesia. Phone: +6282233678283. Fax: +62341333030. Email: urobefk@ub.ac.id.

INTRODUCTION

Hypospadias is a birth defect that affects the male external genitalia. It is characterized by the abnormal development of the urethral fold and the ventral foreskin of the penis, leading to the improper positioning of the urethral opening. Hypospadias is a condition where the opening of the urethra is positioned incorrectly and may be accompanied by a curvature of the penis.¹ Depending on the location of the hypospadias, patients may exhibit an additional genitourinary anomaly. It is often regarded as one of the most common birth defects in boys. Hypospadias has a prevalence of 1 in 150 to 300 live births.² Hypospadias is commonly classified as posterior, penile, or anterior depending on the placement of the meatus before surgery. Approximately 70% of hypospadias cases are located near the tip of the penis and are considered to be moderate variations, while the remainder cases are more severe and complex.³

Numerous studies indicate a correlation between prematurity, low birth weight, and hypospadias. Placental insufficiency, linked to intrauterine growth restriction, low birth weight, and prematurity, is hypothesized to result in decreased levels of placental human chorionic gonadotrophin and fetal androgens. This may result in hypospadias. An alternative, though not exclusive, theory posits that a global and persistent deficit in androgen signaling may contribute to hypospadias. This possibility may lead to impaired somatic growth in boys with hypospadias during childhood. Among 6538 male births, 27 infants (0.41%) were diagnosed with this disorder. The incidence rose from 2.85 per thousand in 1999 to 6.89 per thousand in 2005. The condition was observed with greater frequency in infants classified as small for gestational age (SGA), very low birth weight (LBW) infants, premature infants, and in cases involving mothers with preeclampsia (PET).⁴⁻⁶

Currently, surgery is the sole efficacious intervention for hypospadias, encompassing procedures such as penile straightening, urethroplasty, and aesthetic refinement. The optimal date for corrective surgery to treat hypospadias has long been a subject of controversy, causing great worry among both the population and medical professionals. Several studies have indicated that raising the age at which surgery is performed can result in unfavorable surgical results and a notable

rise in complications.⁷⁻⁸ The European Association of Urology (EAU) Guidelines on Pediatric Urology in 2023 advised that the optimal age range for children to have hypospadias surgery is between 6 and 18 months. Nevertheless, there is a significant number of children with this disorder whose age for surgery is far later than the age indicated by medical professionals. An analysis of 89 patients in Taiwan, China, revealed several characteristics that contributed to the postponement of hypospadias surgery in children. These factors included the age and specialization of the physicians during the initial consultation, the level of urbanization in the patients' residential area, and the occurrence of concurrent conditions such as cryptorchidism, preterm, or low birth weight.⁹⁻¹⁰

Indonesia faces distinctive social and health challenges, however, there is a lack of comprehensive data on the clinical manifestation of hypospadias and its treatment. The objective of this study was to ascertain the clinical characteristics of hypospadias in the Indonesian population, with a particular focus on the region of Malang.

OBJECTIVE

This retrospective study aims to evaluate the characteristics of hypospadias in patients, including the timing of treatment, location of the disease, degree of chordae, stage of surgery, complications, related malformations, birth weight, and gestational history.

MATERIAL & METHODS

The research was conducted at our hospital between January 2019 and February 2024. This study is retrospective, utilizing a medical record database during a 5-year period with approved ethical number 400/261/K.3/102.72024. The inclusion criteria consisted of patients who had been diagnosed with hypospadias. All patients had a surgical procedure and the decision to proceed with the surgery was rejected. The research involved a total of 250 patients. We document patients' treatment timing, disease location, chordae degree, operation stage, problems, associated abnormalities, birth weight, and gestational history. The data were examined using descriptive statistics and the statistical software SPSS 23.0.

RESULTS

Out of the total of 250 patients, 242 of them, which accounts for 97% of the total, were categorized as having a delayed diagnosis. Out of the total number of instances, 141 (56%) were located in Malang. The most common form of abnormality observed was proximal hypospadias, which affected 131 (52%) of the cases. This was followed by 88 (35%) cases of mid shaft hypospadias and 31 (13%) cases of distal hypospadias. 39 individuals (16%) had undescended testes (UDT), while 53 individuals (22%) had scrotum bifidum as additional problems. There are 46 patients (18.4%) with preterm labor. Approximately 78% of the newborns, specifically 194 of them, had a birth weight over 2500 grams. Health provider involved in 226 out of 232 (97%) births. The illness was predominantly detected by medical obstetrician accounting for 42% of cases, with a significant contribution from midwives, accounting for 58% of cases.

Table 1. Baseline characteristics.

Characteristic	N	%
Late management categoric		
Yes	242	97
No	8	3
Address		
Malang	141	56
Outside of Malang	109	44
Type of abnormality		
Anterior	31	13
Medial	88	35
Posterior	131	52
Gestational age		
Preterm	46	18,4
Aterm	204	81,6
Birth weight		
< 2500 g	56	22
> 2500 g	194	78
Antenatal helper		
Obstetrician	105	42
Midwife	145	58

Associated anomalies found were chordae which severe cases account for 144 cases (58%), 95 mild cases (38%), and no case of chordae (11 patients, 4%). Operative stage, post operative complications, and other associated anomalies can be found in table 2.

Table 2. Associated anomalies.

Anomaly	N	%
Chordae		
Severe	144	58
Mild	95	38
None	11	4
Operative stage		
One stage	102	40
Two Stage	45	18
No attempt	103	42
Post operative complication		
Urethrocutaneous Fistula	9	4
Miscellaneous (Persistent Chordee, Rectourethral	4	2
Fistula, Penile Edema (Hematoma, tight meatal-urethral stenosis)		
None	127	51
No operative attempt	110	43
Associated anomalies		
UDT	39	16
Scrotum Bifidum	53	21
None	158	63

DISCUSSION

While there is ongoing debate about the precise timing of surgery for children with hypospadias, it is generally agreed that early surgical correction is necessary. The EAU guidelines suggest that surgery should be performed within a timeframe of 6 to 18 months, as previously stated. Delayed surgery in children with hypospadias has been linked to specific clinical characteristics, such as prostatic cysts, penile hypoplasia, oblique inguinal hernia, penoscrotal transposition, and urinary system disorders. According to Snodgrass et al.'s findings, 86% of parents were unaware of the condition of hypospadias when informed about their newborn's diagnosis. Parents were more likely to bring their children to the hospital when several irregularities in the perineum were readily observable. These findings highlight the urgent need to increase public awareness of hypospadias to facilitate early prevention, diagnosis, and treatment. Our study found that the classification of hypospadias and the presence of chordee have a distinct impact on the optimal age for surgery. This contrasts with a prior report from China and may be attributed to parents' heightened anxiety about their children's genitalia,

prompting them to seek medical attention for even minor irregularities.¹¹⁻¹²

Primary care physicians typically conduct examinations and provide initial treatment recommendations for newborns with hypospadias. Updating the specialist expertise of primary care centers poses a significant challenge. It could impede the capacity of these facilities to provide precise diagnoses and suitable treatment recommendations, particularly in economically disadvantaged regions. While primary-level medical care in China is advancing, low economic areas still face a scarcity of medical and health resources, particularly in terms of access to pediatricians and clinicians specialized in pediatrics. Providing re-education and training to primary care institutions and redistributing health care resources could increase the availability of timely surgery for children with hypospadias, particularly in economically disadvantaged areas.^{1,13,14}

The estimated birth prevalence of hypospadias in the United States rose from 6.1 to 6.8 per 1000 births between 1997 and 2012. The established risk factors for hypospadias, including small for gestational age (SGA) births, twin births, and preterm births, have also risen to elevated levels during this period. Approximately 20% of men born with hypospadias exhibit one of these risk factors. The incidence of hypospadias births in males lacking the examined risk factors also rise, although this increase was not statistically significant. Additional research is required to determine if the heightened prevalence of hypospadias results from an increase in established risk factors, new environmental exposures, improved diagnostic practices at birth, a combination of these factors, or unrelated causes. The relationships among placental weight, birth weight, gestational age, and the studied genital malformations are intricate. Placental weight at birth increases with gestational duration, though this relationship is not necessarily linear. Moreover, placental weight assessed at birth may not accurately reflect the placental weight of fetuses still in utero. Additionally, gestational age, along with the weights of both the placenta and the infant, is affected by various unknown and unmeasured factors and correlate with birth weight itself.¹⁵⁻¹⁷

There are various constraints in this study. Firstly, the results are constrained by the inherent limitations of retroactive observations. Additional comprehensive clinical and socioeconomic data that could potentially impact the decision to delay

surgery were not accessible, including the educational attainment of the parents, their awareness of hypospadias, the existence of siblings, and the family's wealth. Furthermore, it is important to note that the data used in this study were obtained solely from a single pediatric institution. Additionally, it should be acknowledged that the economic development in the region of Malang and its surrounding districts is above the national average. Consequently, there is a possibility of some level of selection bias in this research.

The prevalence of lower urinary tract symptoms was twice as high in persons who had undergone hypospadias correction compared to the control group. Approximately 39% of individuals who received surgery for proximal hypospadias exhibited difficulties with urination, such as hesitancy and spraying. Urinary complications such as meatal stenosis, fistula, or urethral stenosis may develop several years after the initial surgery. Therefore, it is necessary to have regular and ongoing monitoring to provide proper long-term care.¹⁸⁻¹⁹

CONCLUSION

The majority of hypospadias patients seen at Saiful Anwar Hospital are discovered at a later stage, with proximal hypospadias being the most common form. Additional abnormalities that can be found in conjunction with this syndrome include scrotum bifidum, which occurs in 20% of instances, and undescended testes, which are present in 8% of cases. This discovery offers a promising chance to improve the quality of treatment.

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