

Characteristics of Hypospadias Cases at Arifin Achmad Regional General Hospital, Riau Province, 2017–2021

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ABSTRACT

Hypospadias is one of the most common congenital anomalies in male children, with a rising incidence and significant physical and psychological impacts. In Indonesia, data on the characteristics of hypospadias cases remains limited. This study aims to identify the characteristics of hypospadias cases at Arifin Achmad Regional General Hospital, Riau Province, during the 2017–2021 period. This is a descriptive quantitative study with a retrospective approach, using medical record data of hypospadias patients. Variables studied include age, type of hypospadias, presence of chordee, surgical technique, and postoperative complications. A total of 60 hypospadias cases were found, with a mean patient age of 11.73 years. The most common types were middle (43.33%) and posterior (40%). Chordee was present in 80% of cases. The most frequently used surgical techniques were staged urethroplasty (28.33%) and SLAM (26.66%). Complications occurred in 28.34% of cases, with wound dehiscence (11.67%) and urethrocutaneous fistula (16.67%). This study concludes that hypospadias cases at RSUD Arifin Achmad show a tendency for delayed treatment, predominance of middle and posterior types, and a relatively high complication rate. These results highlight the importance of early detection, proper surgical planning, and increased public education on hypospadias.

Keywords: chordee, hypospadias, urethroplasty

INTRODUCTION

Hypospadias is one of the most common congenital anomalies in males and poses a medical concern due to its increasing incidence and psychological impact on patients. In newborn boys, hypospadias is the second most common congenital anomaly after cryptorchidism.¹

The exact etiology of hypospadias remains unclear but is suspected to be multifactorial, with several hypotheses including genetic predisposition, lack of hormonal stimulation before birth, placental factors, and environmental influences.²

Globally, the incidence of hypospadias in male infants is around 1 in 200–300 births.³ In Asia, the prevalence ranges from 0.6 to 69 per 10,000 births.⁴ The exact prevalence in Indonesia is not

well known, but studies have reported 124 cases at Cipto Mangunkusumo Hospital (2002–2014)⁵ and 147 cases at Hasan Sadikin Hospital, Bandung (2015–2018).⁶ Therefore, this study aims to explore the characteristics of hypospadias cases at RSUD Arifin Achmad, Riau Province, from 2017 to 2021.

METHODS

This study used a descriptive quantitative method with a retrospective approach. Data were collected from the medical records of RSUD Arifin Achmad, Riau Province, from 2017 to 2021, and recapitulated based on age, hypospadias type, presence of chordee, surgical technique, and postoperative complications.

RESULTS

The study found 60 hypospadias cases at RSUD Arifin Achmad, Riau Province, from 2017 to 2021.

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Table 1. Characteristics of hypospadias cases at RSUD Arifin Achmad (2017–2021)

Characteristic	Result
Mean Age (years)	11.73
Hypospadias Type	
- Anterior	13.33%
- Middle	43.33%
- Posterior	40%
- Crippled	3.34%
Chordee	
- With Chordee	80%
- Without Chordee	20%
Surgical Technique	
- Mathieu	13.33%
- TIP	15%
- SLAM	26.66%
- Staged Urethroplasty	28.33%
- Others	16.67%
Complications	
- Wound Dehiscence	11.67%
- Urethrocutaneous Fistula	16.67%

During the period of 2017–2021, a total of 60 cases of hypospadias were identified at Arifin Achmad General Hospital, Riau Province, based on medical record review. The mean age of patients at the time of treatment was 11.73 years. Based on type, anterior hypospadias accounted for 13.33%, middle type 43.33%, posterior type 40%, and crippled type 3.34%. Chordee was present in 80% of the cases.

The surgical techniques employed included Mathieu (13.33%), TIP (15%), SLAM (26.66%), staged urethroplasty (28.33%), and other techniques (16.67%). Postoperative complications occurred in 28.34% of cases, consisting of wound dehiscence (11.67%) and urethrocutaneous fistula (16.67%). The overall success rate was 71.67%.

DISCUSSION

The findings of this study indicate a tendency toward delayed management of hypospadias, as reflected by the relatively high mean age of patients. This differs from reports in developed countries, where surgical intervention is typically performed between 6 and 18 months of age.⁷ The delay may be influenced by socioeconomic, geographic, and parental educational factors,⁸ and is associated with higher complication rates.

The distribution of hypospadias types in this study was dominated by middle and posterior forms. This pattern is consistent with several reports from Asia, whereas studies from Ethiopia, Africa, and the Americas tend to report a predominance of distal/anterior types.⁷ In Indonesia, Mahadi et al. reported penile type as the most common (41.7%), while Duarsa et al. found penoscrotal (proximal) type as the most frequent (33.3%), consistent with Limatahu et al. and Tirtayasa et al., who also reported mid-shaft type as dominant.^{9–12}

The high rate of chordee (80%) is likely related to referral patterns of more complex cases and prior interventions (e.g., chordectomy). This condition may influence the complexity of reconstruction and the choice of urethroplasty technique.

The selection of surgical techniques in this study varied (Mathieu, TIP, SLAM, staged, and others) and was determined by several factors, including: (a) type of hypospadias, (b) primary versus redo surgery, (c) availability of penile tissue, (d) patient's age and penile size, and (e) surgeon's preference and experience.

The overall complication rate was 28.34% (wound dehiscence 11.67% and urethrocutaneous fistula 16.67%) with a success rate of 71.67%. The literature reports variable success rates depending on technique—for example, distal hypospadias repair ranges from 70–90%³—while the widely used TIP technique continues to face challenges such as fistula and stricture formation.¹³ These findings underscore the need for early detection, appropriate surgical planning, and public education regarding hypospadias to allow intervention at an optimal age and reduce complication risks.

The clinical implications of these findings include the importance of expediting referrals, standardizing preoperative assessment (including degree of chordee and urethral plate quality), and selecting surgical techniques tailored to the anatomy and complexity of each case to minimize complications.

CONCLUSION

This study concludes that hypospadias cases at RSUD Arifin Achmad tend to experience delayed treatment, are dominated by middle and posterior

types, and have a relatively high complication rate. These findings underscore the importance of early detection, appropriate surgical planning, and enhanced public education about hypospadias.

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