

Case Report

Penoscrotal Hypospadias, A 4- Year Follow-Up

Follow-Up Hipospadia Penoscrotal Selama 4 Tahun

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ABSTRACT

Penoscrotal hypospadias, a severe congenital abnormality, can interfere with urinary, sexual, and aesthetic functions. This paper reports a 2-year follow-up of a penoscrotal hypospadias after urethroplasty using the Koyanagi-Nonomura technique. After surgery, there are some complication of urethrocuteaneus fistula and infectio. This patient undergoes urethrocuteaneus fistula repair and chateter was inserted into the new urethra which was resulted in normal urination function and penis size.

Keywords: *Hypospadias, koyanagi, urethroplasty*

ABSTRAK

Hipospadia penoscrotal, kelainan kongenital dengan derajat berat, dapat mengganggu fungsi urinasi, seksual, serta estetika. Tulisan ini melaporkan *follow up* 2 tahun kasus hipospadia *penoscrotal* yang dilakukan tindakan *urethroplasty* dengan teknik Koyanagi-Nonomura. Setelah operasi didapatkan komplikasi berupa fistel urethrokutan dan infeksi. Dilakukan repair fistel urethrokutan dan pemasangan kateter sehingga memberikan fungsi miksi serta ukuran penis yang normal sesudah tindakan repair.

Kata Kunci: *Hipospadia, Koyanagi, Urethroplasty*

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INTRODUCTION

Hypospadias is a congenital abnormality found in 1 of 300 male births in the urethral estuaries located in the ventral of the penis (1,2). Hypospadias can be accompanied by abnormalities in the shape of the penis, where it can curve in a ventral direction called chordee (3). According to the urethral estuaries, urethral hypospadias is classified as distal hypospadias with glanular, subcoronal, and midshaft types, and proximal hypospadias with proximal penile, penoscrotal, scrotal, and perineal types. About 70% of hypospadias cases are distal and coronal (2,3). This congenital abnormality results in impaired urination and sexual functions and aesthetics due to the different anatomical shapes of the penis in normal conditions (4).

The degree of hypospadias is determined by the meatus location and the chordee severity. Surgical intervention is recommended for moderate and severe hypospadias and distal hypospadias with severe degrees of penile curvature and meatal stenosis (5). The five objectives of this surgical intervention are to obtain a straight shape, position the urethral opening at the tip of the penis, normalize ejaculation and urination, create an adequate urethra with an appropriate caliber, and obtain a symmetrical cosmetic shape of the penis and glans. The surgical action procedure consists of chordeectomy-orthoplasty (straightening the penis), urethroplasty, meatoplasty and glanuloplasty, scrotoplasty, and skin coverage (5,6).

Appropriate selection of surgical technique according to the hypospadias condition plays a vital role in ensuring the success of surgery and preventing postoperative complications (7). The surgery can be initiated at the age of six months, and it is expected that the surgery is completed before school age. Several surgical techniques for distal hypospadias are Mathieu, MAGPI, King, Duplay, Snodgrass, and Onlay (5). For midshaft hypospadias, the onlay island flap technique can be used. Whereas for proximal hypospadias, surgical intervention can be done in one or two stages. The one-stage techniques often used are TIF (Transverse Island Flap), TIP (Tubularized Incised Plate), and Koyanagi-Nonomura, while the two-stage technique usually used is Bracka (7).

In 1983, Koyanagi *et al.* innovated a technique for hypospadias repair using a paramental-based flap that extends distally around the distal shaft to insert the inner layer of the prepuce. Although the technique seems specifically applicable to penoscrotal hypospadias, its use has resulted in a high complication rate with re-surgery in 20-50% of the cases (8). Modifications to this technique have been made in an attempt to improve blood supply, aiming to reduce complications (7). Adherents of the Koyanagi technique believe that it is basically a two-stage procedure completed in one surgery (7).

Complications that can occur after hypospadias surgery are urethrocuteaneous fistula, meatal stenosis, urethral stricture, urethral diverticulum, glans dehiscence, persistent chordee, and unsatisfactory cosmetic appearance (9). Proximal hypospadias is associated with a higher complication risk compared to more distal sites because the new urethra formation is more extended, with a higher risk of failure (10).

CASE REPORT

A newborn baby boy was consulted to the Urology

Division with penoscrotal hypospadias on September 22, 2009. Physical examination found a penis sized 1.8 cm, external urethral meatus was at the border between the penis and the scrotum, and the penis curved ventrally. Surgical procedure scheduled when the patient at the age of 2 years.

The patient came back to Hospital at the age of 6 years, Examination of the external genitalia found that the penis was 3.7 cm in size, with an external urethral meatus at the border between the penis and scrotum (Figure 1). Laboratory and radiology within normal limit. The patient was diagnosed with penoscrotal hypospadias with chordee and underwent urethroplasty and cordectomy surgery using the Koyanagi technique on June 2, 2016.

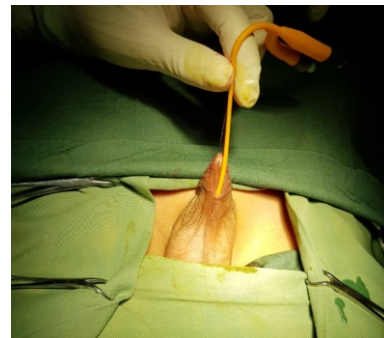


Figure 1. Clinical condition before surgery

General anesthesia was performed in this urethral reconstruction surgery by degloving the penis skin to expose the inner layer. Then, cordectomy was performed to free the chordee tissue so that the penis could be straight like normal (Figure 2).

An artificial urethral canal was then made from the prepuce by considering its vascularity. An 8fr catheter stent was placed to maintain patency of the new urethra and was closed with two layers of penile skin (Figure 3). A compressive dressing was applied to the penis for three days, along with antibiotics and analgesic therapy for three days. After three days of treatment, the patient was discharged while still using a catheter, and education was given on how to treat open wounds. Also, a one-week follow-up was scheduled for catheter removal and evaluation after hospital discharge.

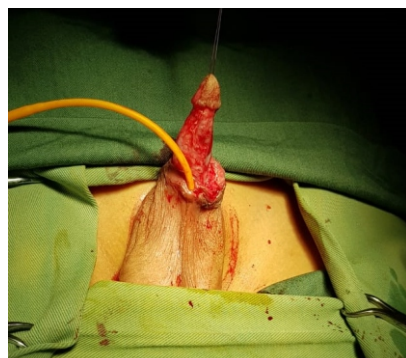


Figure 2. Cordectomy



Figure 3. Urethroplasty

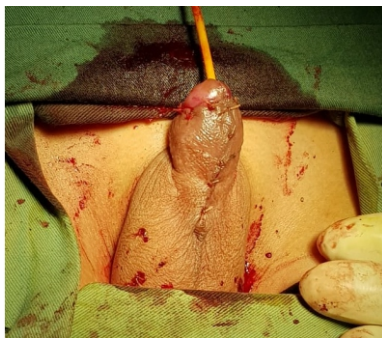


Figure 4. After Surgery

The catheter was removed at the follow-up visit seven days after surgery, and an urethrocutaneous fistula in the midshaft of penis was found with size of 0.1cm. Fistula repair was scheduled to be performed six months after first surgery. During the waiting period, the patient was advised to cover the fistula with his fingers while urinating, hoping that the fistula could shut by itself.

On December 12, 2017, one year and six months after the urethroplasty surgery, the patient came to the urology clinic complaining about urinating through the lower part of his penis since the catheter removal 18 months ago. When urinating, the patient did not feel pain, and the urine was not red in color. If the fistula was closed during urinating, the urine could flow through the front of the penis like normal. On physical examination, a fistula was found in the mid-shaft of the penis, so a urethrocutaneous fistula diagnosis was determined.

Urethroplasty repair was performed on December 13, 2017 at the age of 8 years, under general anesthesia. Operative measures performed included urethra repair and 8fr catheter insertion. Fistula repair was done by undermining the foreskin and then suturing two layers with tension free. After surgery, the patient received antibiotic therapy and analgesics for one day. On December 14, 2017, the patient went home with a catheter attached and planned to be maintained for seven days.

The patient came to the urology clinic on December 21, 2017. The anamnesis showed no problem. On physical examination, the wound was completely closed, the fistula was adequately closed, urine passed smoothly through the front, and there was no seepage on the lower

part of the penis.

November 1, 2020, four years after first surgery during the evaluation patient come to urology clinic at the age of 11 years, the patient could urinate well through the front of the penis, and no urine came out or dripped from the ventral part of the penis, the penis sized 5cm.

DISCUSSION

This case report describes a patient with proximal hypospadias that is a severe hypospadias case (3). Therefore, the therapy chosen was in the form of urethroplasty and cordectomy surgery, which should be done starting from the age of six months and is expected to be completed before school age. However, the patient returned at school age around six years, and this influenced the patient's psychological condition and added risk factors of complications (5).

In this case report, the urethroplasty technique chosen was the Koyanagi-Nonomura technique by considering that it was the technique mastered by the operator, besides that the surgery could be done in one step (6). Research by Jayanthi stated that the original Koyanagi-Nonomura technique has a complication risk of around 20-50%. The technique is then improved by paying more attention to the vascular and prepuce tissue, which will become the new urethra (7). With these modifications, it is hoped that the outcome will be better and minimize complications. In this patient, an 8fr catheter was given considering the patient's small penis size and was maintained for seven days to reduce the complication risks of stenosis and urethral stricture, as well as infection and irritation that can interfere with the healing process (11,12).

In the evaluation on seven days after urethroplasty surgery and catheter removal, there was a urethrocutaneous fistula in the mid-shaft penile. These complications could arise in urethral repair surgery, especially in the proximal part (8,10). As in the previous study, in this case report, there was no evidence of urethral stenosis or stricture after using a stent for seven days (11). However, the use of these stents possibly interfere with the healing process in patients, resulting in fistulas. Urethrocutaneous fistula can be repaired after the healing process is completed approximately six months after the first surgery (5). While waiting for the repair, the patient was advised to cover the fistula with his finger so that urine could pass through the front of the penis and hoped that the fistula could shut and no stenosis or urethral stricture. The patient returned 1.5 years after the first surgery with a fistula in the midshaft penile without stenosis or urethral stricture. Urethral repair surgery was performed by replacing the 8fr catheter as a stent for seven days to reduce complications (9). Urinary retention that occurred after three days was probably due to catheter kinking so that the catheter was blocked. After the catheter removal, the patient could urinate easily without any fistula, so it could be concluded that the second surgery managed to close completely. After 10 years of follow-up, the urethral tube created in urethroplasty surgery could grow and developed according to the penis and body growth development.

The patient's penis size before the repair was small but cannot be termed a micropenis because the diagnosis of micropenis cannot be accompanied by other anatomical abnormalities, such as hypospadias. Without considering

other abnormalities in patients who have not passed the age of grade 2 -5 of elementary school, the penis size alone could not be interpreted into the micropenis; yet, it is a small-size penis compared to the average penis size (10).

Proximal hypospadias, especially in the penoscrotal area, is a hypospadias that causes the most complications due to the length of the newly made urethra. This complication can be minimized by appropriate treatment

influenced by age at the time of surgery, the selection of surgical techniques, the use of stents after surgery, and patient compliance in treatment. Best surgery technique selection is based on the technique mastered by the operator. Installing a stent too long causes a higher likelihood of fistula complications. The artificial urethra can develop according to the patient's growth, but many circumstances possibly contribute to the successful repair of the urethra in hypospadias.

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