Feasibility of repair of distal penile hypospadias as a day-case surgery

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Objective **The aim of this study was to present the outcomes of children with distal hypospadias who were operated on outpatient basis.**

Methods **Atotal of 47 consecutive children underwent surgical repair of distal hypospadias in our department. Urethroplasties were performed by the following techniques: stentless meatal advancement-glanuloplasty (MAGPI) or glans approximation procedure (GAP) for glanular hypospadias (14) and tubularized incised plate (TIP) urethroplasty for coronal, subcoronal and midpenil hypospadias with an indwelling urethral catheter or short stent (33). The indwelling urinary catheters were managed by the double diaper technique. Patients were discharged within 6 h after operation. Dressings and catheters were removed on the postoperative day 2 and 6, respectively.**

Results **Voiding difficulty and urinary retention on early postoperative period were observed in 8 patients. Except meatal stenosis in 4 cases and meatal retractions in 2 cases, there were no major complications in any of our patients during the follow-up period, no postoperative fistula or urethral stricture.**

Conclusion **In children, repair of distal penile hypospadias on outpatient basis is feasible. Catheters, urethral stents, drug therapy and dressing are not justifications for hospitalization in such cases.** ***Ann Pediatr Surg*** **7:111–113 © 2011 Annals of Pediatric Surgery**

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Introduction

The goals of treating hypospadias are to create a straight penis by repairing any chordee, to create a neourethra with its meatus at the tip of the penis, and to create a normal-appearing glans [1]. Except in some cases with proximal types, the repair of hypospadias is generally planned as a single-stage procedure. Mostly, patients are hospitalized for several days after hypospadias repair. Even though some surgical techniques have been developed to shorten the duration of hospital stay, there are not enough data available to propose the perception of hypospadias repair as a day-case surgery.

The aim of this study was to present the outcomes of children with distal hypospadias who were operated upon on outpatient basis, and to discuss whether there is a reason for postoperative hospital stay.

Materials and methods

Between September 2007 and February 2011, 47 consecutive children with distal hypospadias underwent primary repair. All operations were performed by a single surgeon (M.K.). Demographic features of patients are summarized in Table 1. None had undergone a repair procedure previously. The mean age at the time of the operation was 38 months (range: 7–150 months). Seventeen patients were toilet trained. The location of the meatus was glanular in 14 cases, coronal or subcoronal in 23 cases, and midpenile in 10 cases. Chordee was found in 21 children; five of them had fibrous chordee. The meatal advancement and glanuloplasty repair or glans approximation procedure was performed in cases with glanular hypospadias, and the tubularized incised plate (TIP) urethroplasty was performed in cases with coronal, subcoronal, and midpenile hypospadias.

A compressive dressing was applied postoperatively for hemostasis and was removed on postoperative day 2. Amoxicillin/clavulanic acid (50 mg/kg per day in two divided doses), as antibiotic prophylaxis, was used for 5 days. Ibuprofen (40 mg/kg per day in three divided doses), as an oral analgesic, was prescribed if needed. Most of patients were discharged from hospital in the same day, whereas others stayed for 24 h. Catheters were removed at postoperative day 6. Children were followed for a period of 1–41 months.

Results

Early and late outcomes are summarized in Table 1. No wound infection or dehiscence occurred in any case. Voiding difficulty occurred in six cases at early postoperative period. Four of them were having a urethral stent and leakage around the stents. Early expulsion of the indwelling urethral catheters occurred in two patients, and no attempt was made to reintroduce them. Urinary retention occurred in two cases with stent. None of the patients required a urinary diversion. A mild meatal stenosis developed in four patients, which was treated with urethral dilatation on office visit. Except two children, who developed meatal retraction, all children had good results that were described as a cosmetically acceptable penile shaft with normal meatal location. There was no urethrocutaneous fistula, urethral stricture, or other major complications that developed in any of our patients during the follow-up period.

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Table 1 Demographical and clinical features of the patients, and postoperative outcomes are summarized

	Unstented (*n*=14)	Stent (*n*=17)	Indwelling catheter (*n*=16)	Total (*n*=47)
Mean age (range; months)	48 (12–93)	57 (22–150)	13 (7–24)	38 (7–150)
Chordee (*n*)	–	9	12	21
Glanular (*n*)	14	–	–	14
Coronal (*n*)	–	11	12	23
Midpenile (*n*)	–	6	4	10
MAGPI or GAP (*n*)	14	–	–	14
TIP urethroplasty (*n*)	–	17	16	33
Early complication				
Voiding difficulty	1	4	1	6
Urinary retention	–	2	–	2
Leakage around stent or catheter	–	4	1	5
Slippage of stent or catheter	–	1	1	2
Late complication				
Meatal stenosis	–	3	1	4
Meatal retraction	–	2	–	2

GAP, glans approximation procedure; MAGPI, meatal advancement and glanuloplasty; TIP, tubularized incised plate.

Discussion

Hypospadias repair is usually performed electively and on an inpatient basis. In most cases, intravenous antibiotherapy is started postoperatively, a urethral catheter is left for 7–10 days, and a wound dressing is made, to prevent postoperative complication such as hemorrhage, infection, stenosis, fistula, and urinary retention. Therefore, patients and their parents are forced to stay in the hospital until catheter is removed. With advanced surgical techniques and materials, we thought that patients do not have to stay in hospital for that long. This study has shown that hypospadias can be managed as a day-case surgery.

One of the reasons to stay in hospital after hypospadias surgery is medication. It is widely accepted that antibiotics are started preoperatively in patients with hypospadias to prevent infection or related complications [2]. In this series, antibiotherapy was started preoperatively and was continued at home per-orally. Oral analgesics are prescribed if needed. No complications or adverse effects were seen in patients due to oral antibiotics. Therefore, medication is not the real reason to stay in hospital.

The main cause of long-term hospital stay in patients after hypospadias repair is the indwelling urethral catheters. Insertion of a urethral catheter into the bladder not only extends the hospital stay but also limits the child in bed until the catheter is removed. It has been reported that no stent was required for achieving urethral healing in clinical and experimental studies [3–7]. In this series, a urethral stent was not used in the patients with glanular hypospadias who underwent repair with meatal advancement and glanuloplasty or glans approximation procedure urethroplasty in this series. Except for mild dysuria, no early or late complications were seen in these cases. Indeed, a stentless hypospadias repair in these patients provides total ambulation. Hafez *et al.* [3] showed that urethral stent was unnecessary to achieve normal urothelial healing in a rabbit model of TIP repair. Almodhen *et al.* [4] showed that a nonstented TIP urethroplasty technique for hypospadias repair simplifies postoperative care and obviates the need for antibiotics and anticholinergics. Steckler and Zaontz [5] reported excellent results with a stentless TIP repair in children who were not toilet-trained, with no unusual prolonged discomfort. In contrast, several studies have shown that postoperative complications were observed to be more in patients without stent than in patients with stent. El Sherbiny [8] showed that the absence of stent in toilet-trained children was associated with a 24% rate of urinary retention and a high reoperation rate. Wheeler *et al.* [9] have described that a stentless repair may compromise the comfort of the patient and increase the incidence of urinary retention after surgery. Buson *et al.* [10] have also reported that urinary retentions and fistulas are more encountered in patients without catheters than in patients with urethral catheter. In addition, we think that the urethral catheters allow healing of the urethral plate by urothelium after tubularized incised urethroplasty. Hence, unstented urethroplasty in hypospadias may be possible, but urethral stents are useful for adequate healing of neourethra and patient comfort.

There is no consensus on how to introduce the urethral catheter. Some surgeons prefer placement of the catheter into the bladder for urinary drainage (indwelling urethral catheter), whereas other surgeons insert a short stent in the urethra distal to the external sphincter of the bladder. In this series, patients who were not toilet trained had a urethral catheter inserted into bladder, and 'the double diaper technique' was used to manage urinary drainage [11]. Thus, urinary drainage was achieved spontaneously into the diaper and they did not need to stay in the hospital to collect urine. No complication occurred in patients due to catheters at home. In older children with toilet control, a short stent was placed into the anterior urethra, which maintained urine flow and allowed natural voluntary urination. Voiding difficulty was observed only in two patients.

Other compromising problem is wound dressing. There have been a wide variety of dressings described in hypospadias surgery, from compressive dressing with cast immobilization, adhesive biomembrane dressing, to the complete absence of dressing [5]. The supposed advantages of dressing are decreased swelling, wound disruption, and improved hemostasis. In contrast, there are also disadvantages of dressing after hypospadias repair, such as ischemia due to compression, infection, and pain during dressing removal. Van Savage *et al.* [12] have stated that the use of dressing for hypospadias repair in patient who

preserved the urethral plate may not be indicated. McLorie *et al.* [13] have found that an absence of dressing did not compromise the outcome of reconstruction and did not increase postoperative complications (meatal stenosis, meatal regression, infection, bleeding, edema, or urethrocutaneous fistula) or the rate of reoperation. Despite all these benefits of repair without dressing, it was used in a limited number of cases in this series, and no complication related to dressing was seen in children. We thought that a dressing is required for hemostasis, especially in TIP urethroplasty after the dissection of glans wings. Nevertheless, more controlled studies are needed to further evaluate the role of dressing in hypospadias surgery.

Conclusion

In conclusion, distal hypospadias can be treated as a day-care surgery. The presence of a stent or indwelling catheter, drug therapy, or wound dressing after repair does not constitute an actual cause for prolonged hospitalization.

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