

Day-care hypospadias surgery: Single surgeon experience

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ABSTRACT

Aim: To report the results of the early discharge of children after hypospadias repair with an indwelling catheter. **Materials and Methods:** To facilitate early the discharge of children after hypospadias repair, the author adopted the technique of draining the indwelling urinary catheter into diapers in children undergoing this operation. Home catheter care was taught to the mother; the dressings and catheters were subsequently managed in the outpatient clinic. **Results:** Over a 2-year period, 43 children were managed by this technique and were sent home within 24-48 h after the operation with an indwelling catheter. Minor problems requiring outpatient visits to the surgeon occurred in nine (20%) children after discharge from the hospital. All the nine children were successfully managed as outpatients and no child required rehospitalisation. The catheter remained in position for 5 days in all the children. The overall results were satisfactory with an acceptable (7%) fistula rate. **Conclusions:** It is possible to reduce the duration of the hospital stay of children after hypospadias repair without compromising on the final results.

KEY WORDS: Diaper, hospital, hypospadias, stent

INTRODUCTION

Temporary urinary diversion is routinely employed after hypospadias repairs in children. There are many techniques for urine drainage and some of them require prolonged hospital stay with increased cost and discomfort to the child. It is however possible to shorten the duration of hospital stay for most children by employing modified techniques of urinary diversion and drainage without compromising the results.^[1] We attempted to apply such techniques in our patients to facilitate early discharge from the hospital after hypospadias repair and the preliminary results are described here. To the best of our knowledge, there are few Indian reports on the use of such techniques.

MATERIALS AND METHODS

Between January 2003 and January 2005, 43 children (mean age 3.2 years, range 9 months-11years) that underwent hypospadias surgery by the author were discharged home with an indwelling catheter within 48 h after the operation. Out of these cases, 41 children underwent a primary, single stage hypospadias repair; the hypospadias was distal penile in 21, midshaft in 11 and proximal in nine. Children with glanular

(minor) hypospadias that underwent repair without an indwelling catheter are not included in this report. Two children had secondary operations: one of them had fistula closure and the other had urethroplasty.

For primary hypospadias repairs, the operative technique was Duplay principle with or without urethral plate incision^[2] in 26, onlay island flaps^[3] in nine and other techniques in six cases. After the operation, all children had an indwelling urethral catheter (infant feeding tube size 6 or 7) for 5-10 days (5-7 days for distal repairs and 7-10 days for the more proximal repairs). The catheter was fixed to the glans by a 4/0 or 5/0 stitch placed through the tubing of the catheter. The proximal end of the catheter was placed in the bladder, taking care that there was not too much length in the bladder. The distal end was left as a drip stent into a pair of diapers, - the "double diaper" technique.^[4] In this technique, the distal end of the catheter is taken out through the inner diaper and the urine is allowed to drip into the outer diaper. The mother was advised to replace the outer diaper every 4-6 h, once it got completely wet with urine. The inner diaper was changed when the child passed stool. The penis with the dressing and the catheter were entirely within the diapers and thus were concealed from the child's view. In older children with toilet control, a single

diaper was used for convenience. The penile dressing consisted of a Tegaderm wrap and the penis was then sandwiched by placing it onto the abdominal wall for compression, held in place with gauze and a sticky plaster. Alternatively, a "daisy dressing" was applied in some cases. Oral feeding was commenced 4-6 h after the operation and the children were sent home with the catheter within 24-48 h, once the mother felt comfortable to manage the catheter. Outstation patients were encouraged to stay for 48 h, while the local patients usually went home within 24 h. The children received oral antibiotics for 5-7 days. Oral analgesic medication (Paracetamol + Ibuprofen) was usually prescribed for 2-3 days and then discontinued. The parents were advised to report back to the surgeon in case of any trouble, such as urinary leakage and soakage of the dressing. When everything went smoothly, the child was brought back to the hospital after 5-7 days, for dressing and catheter removal in the outpatient clinic.

RESULTS

The discharge procedure and the catheter care were explained to the parents in detail before the surgery. Thus, the mothers started managing the catheters soon after the operation. Out of the 43 children, 27 were discharged home by 24 h and the remaining 16 within 48 h after the operation. After discharge from the hospital, 26 children (60%) had no problems and reported back to the outpatient clinic for dressing and catheter removal as scheduled. The remaining 17 children (40%) requested one or more outpatient visits to see the surgeon before the scheduled visit. In eight of these children, the mothers wanted to see the surgeon only for reassurance that everything was well. The remaining nine children (20%) required early management of dressing due to pericatheter urine leak in five of them and premature extrusion of the dressing in four. All nine children were managed on outpatient basis. In the latter four, the dressing was either completely removed or replaced. The children with pericatheter leak had bladder spasms and typically leaked when they strained for passing stool. These five children were managed with *in-situ* flushing of the catheter with saline oral, anticholinergic medication (oxybutynin: 0.1-0.2 mg/kg thrice a day) and an oral lactulose solution (to render the stool soft) apart from change of the dressing.

The catheters remained in position for a minimum of 5 days in all children. Premature expulsion/slippage of the catheter occurred in three children (7%) on day 5 and day 6 following the surgery. No attempt was made to reintroduce the catheter and all the three children voided spontaneously without any problem. Two children with intermittent pericatheter leak had superficial wound

infection that was conservatively managed. After the catheter removal, out of 43 children, three of them (7%) developed fistulas (2 distal and 1 penoscrotal), one of which closed spontaneously with a regime of neourethral calibration. One of the two children with infection developed distal glans dehiscence, which the parents considered as inconsequential. None of the children in this series required readmission to the hospital.

Diaper rash was another problem that occurred in some children. Commonly, this was the result of delayed replacement of wet diapers and was easily managed by proper counseling and advice given to the mother.

DISCUSSION

Hypospadias is a common congenital defect, occurring in 3-8/1000 male births.^[5] Surgical correction is advised for cosmetic and functional reasons. The surgical correction of hypospadias is technically demanding. In all the cases except for the most minor defects, some form of urinary diversion (using an indwelling catheter) is employed for 1-2 weeks after the operation. This is to enable the reconstructed tissues to remain dry during the critical period of healing, thus preventing infection, wound breakdown and other problems. It has been shown that even for distal hypospadias repairs, urinary diversion gave better results than for repairs without diversion.^[6] However, the management of indwelling urinary catheters in children is not easy and many different techniques are followed.

In developed countries, where the diaper technique of catheter care described in the methods section of this paper is routinely followed, hypospadias surgery has largely become a day-care operation.^[1,3] However, in India, many surgeons prefer to drain the urethral catheter into a urine bag and the child remains in the hospital till the time of catheter removal, which may require 5-10 days or more (personal observations and personal communications). Some surgeons routinely employ suprapubic diversion even in repairs of distal hypospadias defects. Recent reviews note that there is limited role for suprapubic diversion in hypospadias repairs and the routine use of such techniques in hypospadias repairs cannot be justified.^[5] Such techniques not only prolong the hospital stay, but also require restraining the child in bed most of the time till the catheters are removed. This causes significant discomfort to the child. Since the child can see the external catheter or drainage bag, there is an increased chance, at least theoretically, that the child may pull on the tubes causing various problems. All these problems are not new to the surgeons who are routinely involved in the management of hypospadiac children.

With this background scenario, we had some initial apprehension when we started employing the diaper technique to manage catheters and shortened duration of hospital stay after hypospadias repairs. We initially started employing it in selected cases of distal hypospadias only when we were convinced that the parents were educated and cooperative enough to manage the catheter at home. Thus, it must be accepted that initially there was some selection bias and only approximately half of hypospadias repairs performed by the author during the study period were managed by this technique. However, when we noted how the technique simplified the catheter management without significant problems, we started employing it more frequently. Currently, almost all patients of the author are managed by the diaper technique and are sent home very early after hypospadias repairs, irrespective of the severity of the anomaly and the type of operation. Apart from a significantly shortened duration of hospital stay, this technique also offered other advantages; the children were allowed complete mobility at home, and most of the parents were happy to observe that the child showed almost no signs of discomfort due to the presence of the catheter. Once the young child was at home in familiar surroundings and playing with his toys, his attention was diverted away from his genitalia and the catheters with reduced chances of pulling the tubes. The problems observed in some children in this series were mostly minor in nature and may be observed after any hypospadias repair. It is important to note that all these problems could be readily managed in the outpatient clinic itself without the requirement for rehospitalization. Bladder spasms are caused by the catheter irritating the trigone and may be prevented by keeping a short length of the catheter inside the bladder as well as by avoiding the use of balloon (Foley) catheters.^[7] The incidence of bladder spasms in the present series was low (5 of 43, i.e., 11%). The overall results were satisfactory. The incidence of

urethral fistula in this series was comparable to recent published reports.^[8-10] Although most of our patients were from urban background, we now believe that with proper parental counseling and education, the technique described is applicable to many children undergoing hypospadias repairs.

To conclude, the present report shows that it is possible to shorten the duration of hospital stay of the child after hypospadias repair without compromising on the results. This reduces the discomfort to the child and may render the operation to be more cost effective.

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Source of Support: Nil, **Conflict of Interest:** None declared.