

the TIP urethroplasty with a local flap in previous hypospadias repair complicated by fistula or dehiscence.

On the other hand fistula that develops after repair of more proximal types of hypospadias are more challenging, they require more delicate procedures and a higher failure rate.

Materials and methods

Between December 2006 and June 2009, 27 children (mean age 4.8 years, range 2 years to 11 years) were referred for re-operation of failure of hypospadias repair.

The patients were divided into two groups

Group 1: twenty [20] patients had a failed hypospadias repair of distal [18 patients] and mid shaft [2 patients] penile hypospadias (Figure 1) who had previously undergone a failed hypospadias repair. The previous techniques utilized were Mathieu repair in 6, MAGPI in 4 and unknown in 10. Glanular hypospadias were excluded from this study. The interval from the last surgery to TIP re-operation was between 6 months to 9 years.

After the primary evaluation, tubularized incised plate urethroplasty (TIP) was performed for correction of complications related to the previous hypospadias surgery. All of the re-operations were performed by the same surgeon. After general anesthesia, a stay suture was placed through the glans for traction. Then the penis was degloved and any meatal stenosis or fistula opened widely, to prevent subsequent stricture formation. An artificial erection was carried out for ventral curvature, as a necessary step. Parallel incisions separated the glans wings from the urethral plate and the plate was incised in the mid-line as described by Snodgrass ⁽¹⁾. An 8F or 10F Foleys

catheter was passed into the bladder for post operative urinary diversion, then, an urethroplasty was performed using subcuticular 4/0 vicryl continuous sutures. The epithelium of the urethral plate was inverted toward the lumen to avoid fistula formation. Care was taken to avoid suturing the distal urethral plate too tightly, which may result in meatal stenosis. Usually only 1 or 2 sutures beyond the mid glans penis level of the plate were needed, leaving the neomeatus oval in configuration ⁽³⁾. The neourethra was covered by a second layer of dartos tissue pedicle then closing the skin with interrupted sutures and a compression dressing was applied. All patients were discharged from the hospital one to two days after surgery. Catheter and dressing were removed after five days. Patients were examined twice in the first month (Figure 2), with follow-up within a 6 month period. Patients who had an acceptable cosmetic appearance and voided from the end of the penis with no difficulty were considered as successful surgery.

Group 2: 7 patients had failed hypospadias repair of proximal penile [4 patients] and penoscrotal [3 patients] hypospadias (Figure 3).

All the patients had fistula formation near the proximal end of the neourethra of the previous repair

After the initial assessment of the patients, repair of the fistula was decided and under general anesthesia, the procedure started with the assessment of the neourethra with calibration to exclude any stenosis or stricture, a 8 or 10 Fr Foleys' catheter was inserted to the bladder, excision of the fistula and closure of the defect with interrupted 4/0 vicryl sutures with inversion of the urethral edges towards the lumen then covering the area with a second layer of