



T flap hypospadias repair in circumcised patients

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SUMMARY. Single stage repair of distal penile hypospadias with chordee in circumcised patients is described. A ventral 'T' flap is used, the horizontal part of the T flap forming the complete circumference of the new urethra and lying in the defect created due to chordee release. The vertical part of the T flap, in conjunction with the grooved glans, forms the neourethra like the flip flap procedure.

Of 22 patients repaired in this way, 2 (9.0%) developed fistula and one (4.5%) had meatal stenosis, thus in 86.5% successful repair was achieved.

Hypospadias affects 1 in 300 live male births. Distal penile and glanular varieties are the commonest types of hypospadias (Horton and Devine, 1979; Horton *et al.* 1991), a good number also having a degree of chordee distal to the ectopic meatus (Horton and Devine, 1977; King, 1987).

Routine circumcision of infants is practised in Islamic countries on religious grounds. It is almost always done within 6 weeks, preferably by the end of the first week after birth. Minimal to moderate hypospadias with dorsal hooding, deficient ventral prepuce and exposed glans is not usually recognised by parents as a congenital deformity. It is the belief that these children are born circumcised ("angel's" circumcision) and the postnatal circumcision is done to complete religious rites and to achieve better aesthetic appearance. Single stage repair of hypospadias with chordee presents a difficult challenge for the surgeon, and the added previous circumcision makes it worse. We have carried out a single stage repair using a meatal-based T flap from the ventral surface of the penis in circumcised distal penile hypospadias patients with chordee and flattened or grooved glans.

Operative procedure

Sounds are passed through the external meatus and the urethra and if found adequate, the procedure is used in distal penile hypospadias with chordee (Figs 1A, 2A). The meatal based flap is marked (Figs 1B, 2B) in such a manner that the width of the horizontal limb of the T should be equal to the defect after chordee release and the length should be around 14 mm to form the entire circumference of the new urethral segment when tubed around a stent. The vertical limb of the T is drawn in a similar manner to the flip flap technique so that with a glans flap it will form the distal urethra and should be long enough to reach the summit of the glans. An incision distal to the external ectopic meatus is made for chordee release, and all

fibrous tissues causing chordee are then excised until the penis is straightened. The marked flap is dissected (Figs 1C, 2C) with inclusion of Buck's fascia. The urethral reconstruction is carried out by tubing of the horizontal T limbs and distally by suturing together the vertical T limb and glans flaps (Figs 1D, 2D). The secondary defect is closed by direct advancement of glans margins and skin margins after dissection (Fig. 1E). A dorsal slit may be carried out if considered necessary. Suprapubic urinary diversion is carried out and the repaired area covered with non adhesive dressings for the first 24 hours postoperatively and then left exposed. Figure 2E shows the final result 2 months postoperatively.

Results

This procedure was carried out in 22 patients aged from 3-29 years (mean 10.5 years). All had distal penile hypospadias and had been circumcised during infancy. Chordee was present in all cases and the chordee release defect varied from 0.8-2.2 cm with an average of 1.2 cm in length. Postoperatively in three cases there was some skin margin necrosis which healed by secondary intention but the reconstructed urethra remained intact. Two cases developed fistula needing one more operation in each case and one case developed meatal stenosis needing correction.

Discussion

The single stage repair using the preputial tissues as described by Hodgson (1970), Asopa *et al.*, (1971) and Duckett (1980), flip flap (Mathieu, 1932) or Mustardé's technique (Mustardé, 1965), gives good results but is not possible in patients who have been circumcised previously. Repair in circumcised patients has been described using several techniques. The urethral advancement technique advocated by Baran (1982) is not a feasible method in the presence of

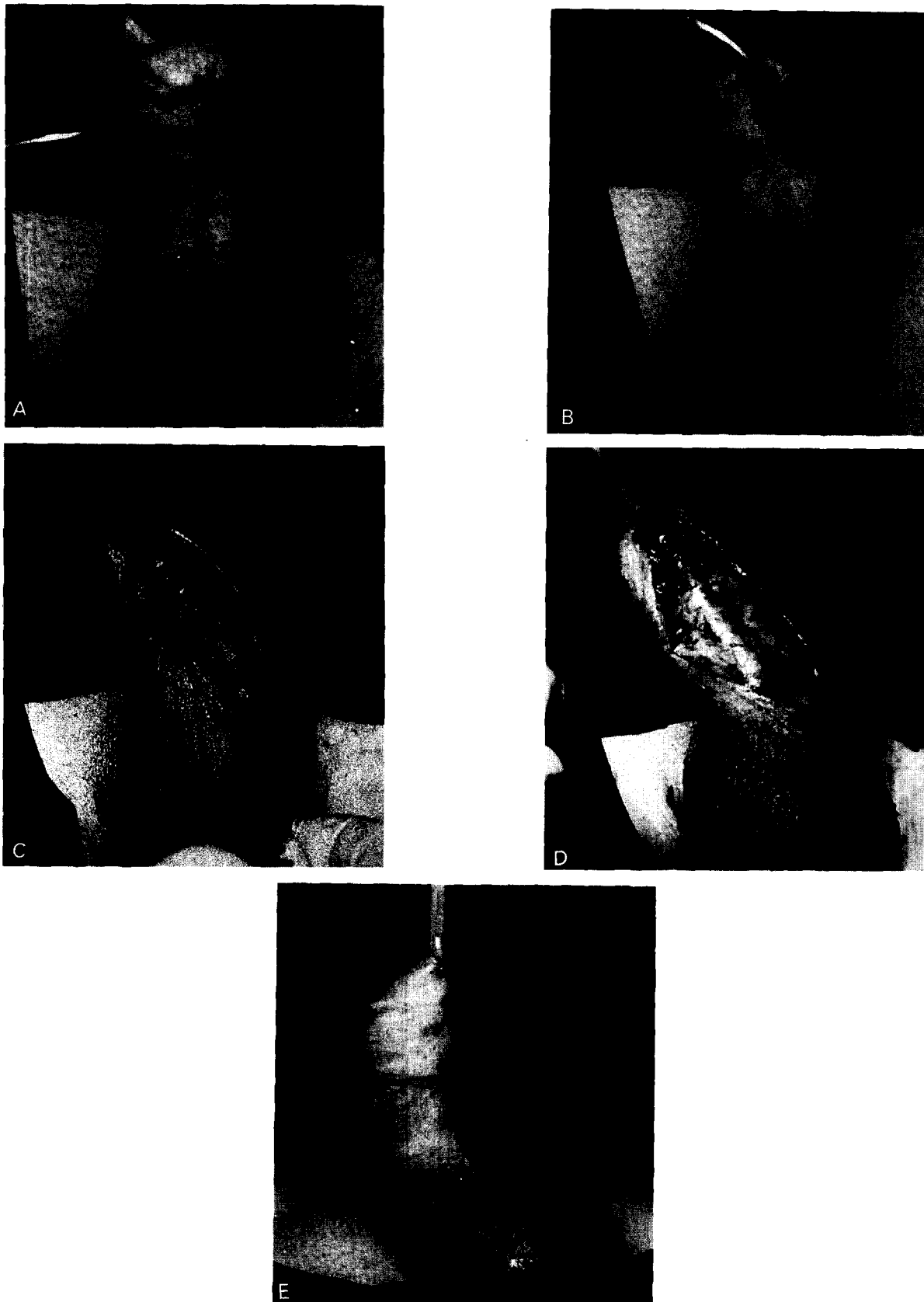


Fig. 1

Figure 1—(A) Distal penile hypospadias with chordee in a circumcised patient. (B) The T flap is marked. (C) The flap has been dissected. (D) The urethroplasty is completed. (E) The repair is completed.

chordee. The use of a transverse penile island flap from the dorsum of the penis (El-Kasaby *et al.*, 1986) is a multi-staged procedure. Free skin grafts and bladder

mucosa grafts (Shapiro, 1986; Viyas *et al.*, 1987) are not very satisfactory or reliable methods as a single stage repair. The penile cutaneous island flap repair as

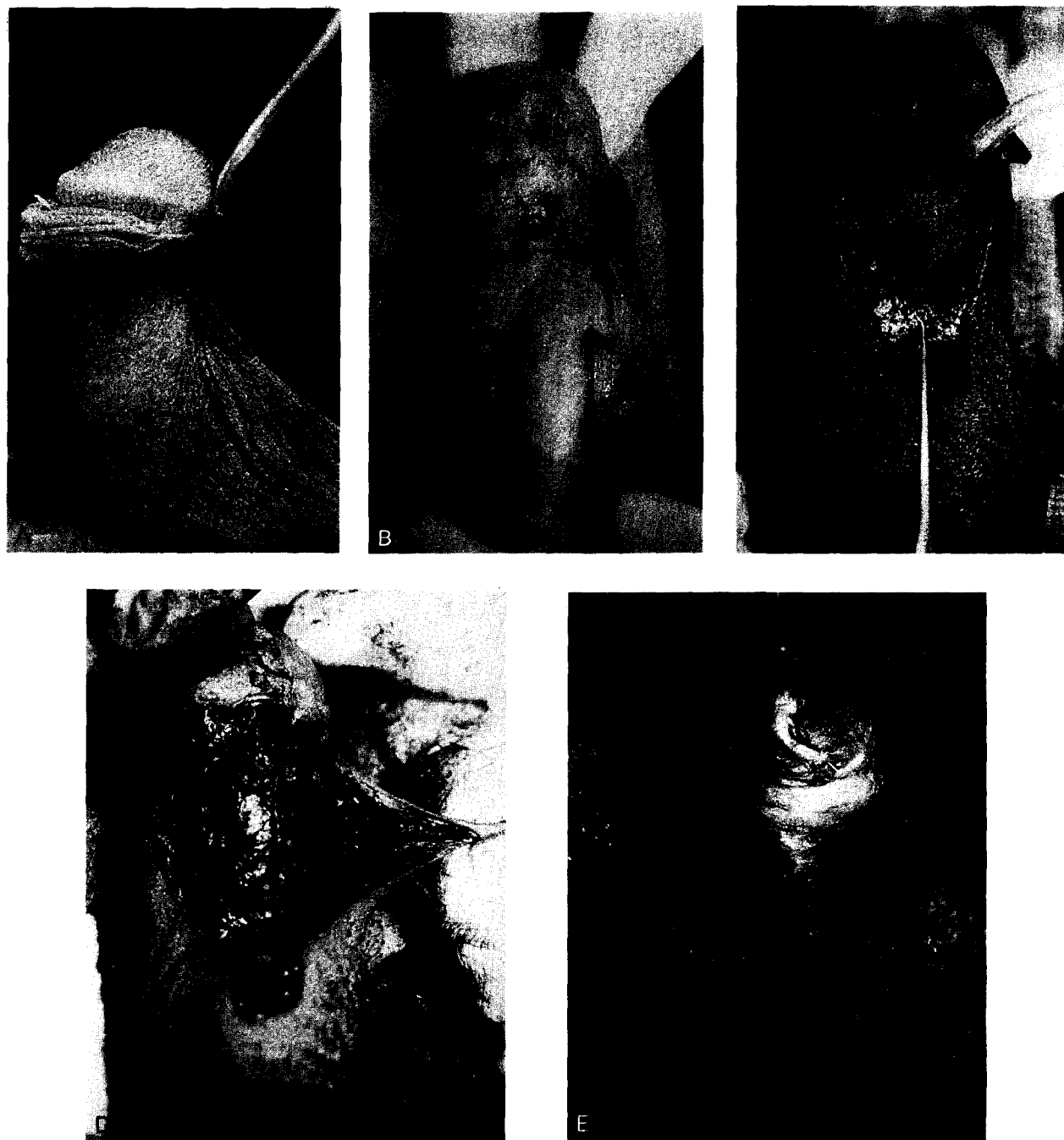


Fig. 2

Figure 2—(A) Distal penile hypospadias with chordee in a circumcised patient. (B) The T flap is marked. (C) The flap has been dissected. (D) The urethroplasty is completed. (E) The site of external meatus and the appearance of glans penis 2 months postoperatively.

described by Ntia *et al.* (1988) is a single stage procedure but none of these take into account the grooved flattened glans and the desired aesthetic goal is not achieved. The T flap is a single stage procedure for distal penile hypospadias with chordee in circumcised patients. The grooved flattened glans is used for urethroplasty, therefore the final aesthetic results are gratifying.

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