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Prepuceplasty: an alternative to circumcision

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The operation of prepuceplasty overcomes phimosis in children while conserving the foreskin. The narrowed preputial outlet is incised longitudinally and repaired transversely. When appropriate, this minor procedure produces lasting relief of the deformity, as shown in 55 patients followed for up to 20 years.

Circumcision is one of the oldest and still one of the commonest of surgical operations worldwide. Although it is usually performed as a religious or sacrificial rite *(1)*, the main medical indication is organic narrowing of the preputial orifice. As several authors have recently noted *(2,3)*, the foreskin is often removed unnecessarily, when there is no true fibrous phimosis. Even when there is genuine narrowing, phimosis in children often lends itself to the lesser procedure of prepuceplasty, which I have been offering to parents for the past 20 years.

The operation of prepuceplasty relies on the fact that organic phimosis is often due not to widespread scarring of the foreskin but to a localised band of fibrosis just at the end of it. This allows correction of the stenosis by the standard surgical ploy of longitudinal division and transverse repair. The end result is a normal uncircumcised appearance.

Technique

The operation is carried out as a day case under general anaesthesia. Using fine scissors, a short, full thickness longitudinal incision is made in the end of the narrowed prepuce, on the dorsal aspect (Fig. 1A). This must be in the midline, exactly opposite the ventral raphe, and extends just far enough back to allow complete and easy retraction—a 'mini-dorsal slit'. Adhesions to the glans are broken down if present. The prepuce is drawn forwards again and the inner and outer layers of skin sutured together transversely (Fig. 1B) to produce permanent widening of the opening, starting at the apex of the cut and using five to seven interrupted sutures of 0000 polyglycolic acid.

By incising the outer layer slightly farther than the inner, and adjusting the needle bites appropriately, the suture line can be turned outwards so that contact between the two halves, and subsequent bridging, is prevented. The aim is to produce a supple scar with minimal fibrosis, so the skin edges should be accurately apposed and the sutures tied snugly rather than tightly.

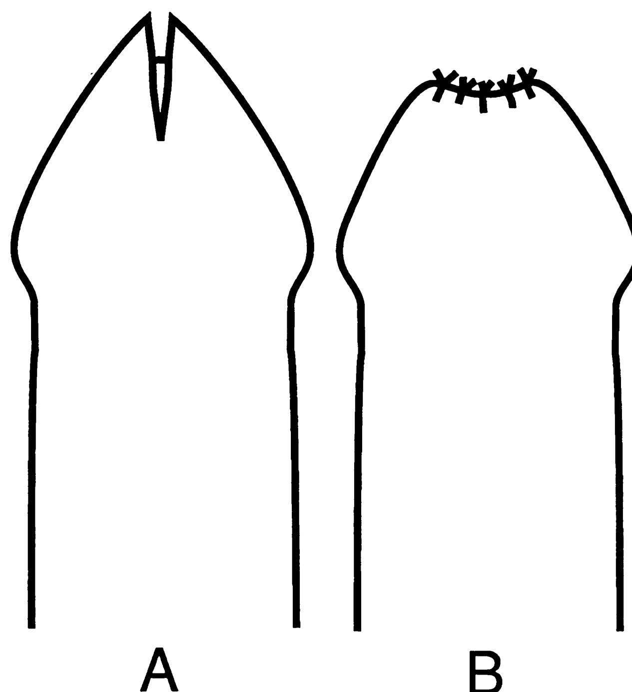

Figure 1. Steps in a prepuceplasty.

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Postoperatively, no attempt is made at first to retract the foreskin fully, lest the healing scar be torn. The two sides of the suture line are gently separated in the bath daily to remove any exudate or decomposing urine and prevent bridging. The parents are warned that the end of the foreskin will look puffy for a week or so—otherwise the patient is liable to receive an unnecessary course of antibiotics. The wound can be inspected after a few days to check for bridging by fibrinous adhesions, and in 3 or 4 months to confirm full retractability.

Results

Analysis of the first patients treated in this way, 20 years ago, confirms the usefulness of the procedure and reveals some limitations. Sixty consecutive childhood prepuceplasty operations performed between 1973 and 1976 have been reviewed. Age at operation ranged from 1 to 14 years (median 5 years). All patients had organic narrowing of moderate or severe degree.

The patients were nearly all seen within the first week after operation. Fifty-seven patients were seen after 3 months, and most again at 5–8 years. In addition, 46 patients responded to a postal/telephone questionnaire in 1993 to determine if further surgery had been needed, if the prepuce retracted easily and if the owner was happy with the cosmetic appearance. In total, 55 patients were reviewed either at 5+ or 17+ years, or both.

Four patients needed subsequent circumcision, at between 1 and 5 years after the prepuceplasty. Of these, three were noted initially to have extensively fibrosed foreskins which were never supple enough after the operation to allow easy retraction. The fourth experienced postoperative bridging but failed to return for follow-up until the two halves of the incision had firmly fused, reproducing the phimosis.

One patient who had an overgenerous prepuceplasty, amounting to a traditional dorsal slit, ended up with an appearance exactly like a circumcision.

At the time of their latest follow-up, the remaining 50 patients had needed no further treatment, had easily retractable foreskins and were happy with the appearance (except for one who thought it looked 'dog-eared'). Functionally there were no adverse comments—rather the contrary.

Discussion

Rickwood *et al.* *(1)* have shown that many boys referred for circumcision do not have true phimosis, merely a non-retractable foreskin due to preputial adhesions, which break down spontaneously in later childhood. This applies especially in the first few years of life. Nevertheless, most surgeons would confirm that genuine fibrous phimosis may be seen at quite a young age. This is usually the result of inflammation after prolonged contact with nappies soaked with decomposing urine; well-intentioned attempts to retract the foreskin in babies, sometimes on medical advice, can also cause fissuring and fibrosis. The changes vary from localised narrowing at the tip of the foreskin to severe scarring with thickening and deformity—the latter more commonly seen in older boys after repeated episodes of posthitis.

Circumcision has a definite morbidity, including haemorrhage and meatal ulceration and stricture *(4)*. Prepuceplasty has produced none of these; it is a lesser and relatively painless procedure and is quick to perform. The usual indication for choosing prepuceplasty has been parental preference, based on cosmetic rather than medical considerations. As a tribe, boys of school age are fiercely conformist and prone to harass any of their number who departs from the anatomical norm. Perhaps for this reason a surprising number of parents opt strongly for saving the foreskin when they know that there is a choice. Others, it must be said, are equally determined for their son to be rid of it. This is the age of consumer choice and the surgeon may be in a position to respond to either preference.

However, experience has shown that prepuceplasty is not applicable to every patient with phimosis. Where the foreskin is visibly scarred and thickened the stenosis is difficult to overcome and tends to recur, even after a wide plasty. Most adult phimosis is of this type by the time the patient presents; here the cause is a combination of fungal infection and repeated splitting of the skin on intercourse.

Prepuceplasty may also be less satisfactory in a very redundant foreskin where urinary stasis and decomposition lead to ammoniacal dermatitis, inflammation and eventual recurrence of the deformity. A long stenosed foreskin is probably better treated by circumcision. Failures in early cases were attributable to two factors, 1, very severe fibrosis or 2, excessive length of foreskin, and a later, more selective, approach has eliminated the problem of recurrent phimosis. The long follow-up of from 6 to 20 years in this series of patients indicates that the successful results are lasting.

Cuckow *et al.* *(5)* have recently pleaded eloquently on behalf of the foreskin and recommended the operation of 'preputial plasty', which they claim is a well-recognised procedure in (mainland) Europe. It should extend to the repertoire of British surgeons.

References

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