

Bilateral Lateral Slit Preputial Plasty: A Technique Preferred over Circumcision in Primary Phimosis

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Abstract

Infant male circumcision continues despite increasing qualms about its medical justification. It is likely that genital cutting has physical, sexual and psychological consequences. The aim of this study is to compare the results of traditional circumcision with preputial plasty. This study comprises 120 boys of an age from 1.5 to 14 years presenting with symptomatic phimosis. Patients with a phimosis and secondary preputial scarring underwent circumcision and patients with a narrowed foreskin and a history of recurrent balanitis, ballooning or local symptoms such as fissuration underwent bilateral lateral slit preputial plasty. Fifty patients were subjected to circumcision and the remaining 70 to bilateral lateral slit preputial plasty. After surgery, these patients were assessed on the 3rd postoperative day and at the end of 3 months for early and late complications and for cosmetic results. Preputial plasty is associated with less complications and superior cosmetic results. Bilateral lateral slit preputial plasty should be the preferred surgical technique in primary phimosis. It is an easy, safe, cosmetically and functionally more acceptable day-care procedure as compared to circumcision for surgical treatment of primary symptomatic phimosis.

INTRODUCTION

The prepuce is usually dismissed as a simple fold of skin and mucosa. At best, the prepuce is thought to protect the glans penis; at worst, it is a health hazard that may be avoided by circumcision. Not surprisingly, articles on the advantages and disadvantages of circumcision consistently fail to discuss the prepuce as a tissue worthy of preservation in its own right.¹ Infant male circumcision continues despite increasing qualms about its medical justification. It is likely that genital cutting has physical, sexual and psychological consequences.² Some studies link involuntary male circumcision with a range of negative emotions and even post-traumatic stress disorders.^{2,3} In view of the immediate as well as long-term risks from circumcision and the legal liabilities that might arise, it is timely for us to re-examine the evidence on this issue and advisability of this surgical procedure on unconsenting minors. To circumcise means to cut off part of or the entire foreskin of the penis permanently exposing the normally covered glans.

Phimosis is a term taken from a Greek word that means "muzzling". At any age, abnormal narrowing of the preputial opening with ballooning during micturition is "phimosis". It is not simply an unretractable foreskin, which is a common condition and considered normal up to 3 years of age. The prepuce is designed to be non-retractile in infancy and early

childhood when the developing glans needs complete protection from the mechanical trauma of the clothing and the chemical trauma of ammoniacal urine. Phimosis is said to be the physiological condition of the newborn male with a tendency to spontaneous resolution.⁴ Fundamental misunderstanding of the normal developmental process by which the prepuce becomes retractile (by a process of desquamation) has led to large numbers of inappropriate referrals for circumcision. However, unretractable skin if left for prolonged period undergoes various inflammatory and infective processes. In these symptomatic patients (phimosis with infections or balanitis), circumcision has traditionally been regarded as the treatment of choice.⁵ However, there are many who might benefit from the more conservative approach of preputial plasty; which avoids complications associated with traditional circumcision like bleeding, skin loss, asymmetry, chordee, meatal stenosis, urethrocuteaneous fistula and keloids.^{6,7}

PATIENTS AND METHODS

Institutional ethics committee approval as well as written consent from parents was obtained. This is a prospective comparative study carried out over a period of five years, in a tertiary referral center in a government medical college. One hundred and twenty boys of the age group from 1.5 to 14 years presenting with the diagnosis of symptomatic

phimosis were included in the study. Detailed history was taken and thorough examination of genitalia was carried out. Patients with a phimosis and secondary preputial scarring underwent circumcision and patients with a primary symptomatic phimosis underwent bilateral lateral slit preputial plasty. Primary phimosis was defined as non-retraction of prepuce since birth for more than 3 years of age or presenting with ballooning during micturition or recurrent urinary tract infection. Fifty patients were subjected to circumcision and the remaining 70 to preputial plasty. After routine blood and urine investigation patients were subjected to the selected procedure under local anaesthesia with or without sedation. Preoperative long-acting penicillin was given. Outcome was assessed in terms of bleeding, preputial oedema, retention of urine, infection, paraphimosis (only in case of preputial plasty), parental satisfaction for cosmesis and overall hospital stay. Parents were also asked to note the time when the child was able to wear pants without any discomfort. Circumcision was done using the traditional dorsal slit technique.

TECHNIQUE OF BILATERAL LATERAL SLIT PREPUTIAL PLASTY

Adhesions were separated between glans and prepuce. Retraction of the foreskin reveals a clearly defined fibrous ring. A longitudinal incision was made at 3- and 9-o'clock position over the skin of the stenosing fibrous bands, which, when divided, exposed the underlying Buck's fascia. Full retraction of the prepuce was achieved and smegma and debris removed. Incisions were closed transversely with "5-0 chromic" after hemostasis (Figure-1). At 3-month follow-up significantly better cosmetic results were observed in patients who had undergone preputial plasty (Figure-2). The technique of preputial plasty is described elsewhere ⁶ and is illustrated in Figures 3-6.

Figure 1

Figure 1: Immediate postoperative result following preputial plasty



Figure 2

Figure 2: Late postoperative result after 3 months



Figure 3

Figure 3: Vertical incision on the lateral aspect of the penis over the stenosing band

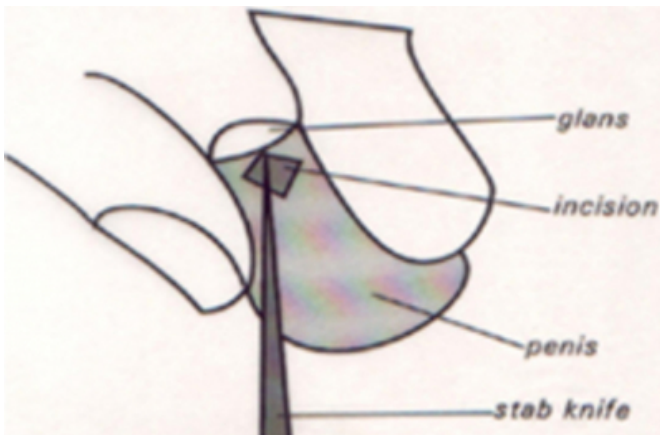


Figure 4

Figure 4: Incision completed on both sides and prepuce retracted completely

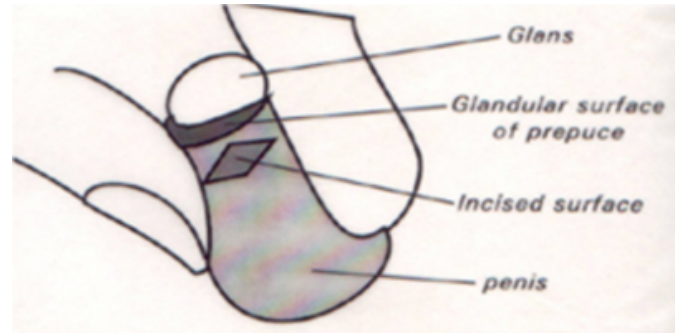


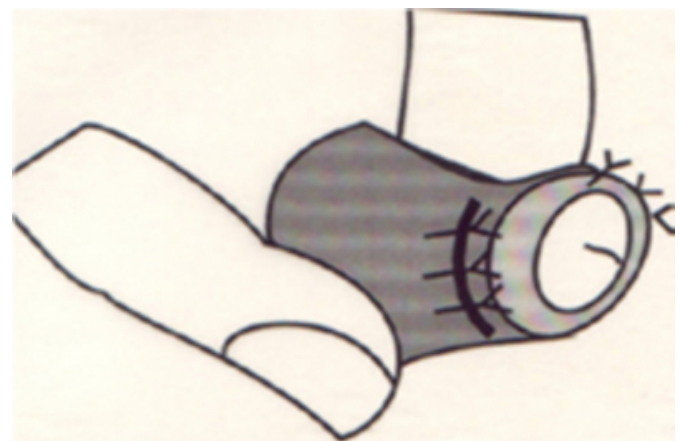
Figure 5

Figure 5: Repair completed on one side



Figure 6

Figure 6: Repair completed on both sides and final appearance



Patients were sent home after they had passed urine. Parents were advised to report immediately if bleeding, gross oedema, retention of urine or severe pain occurs. Patients were followed on the third postoperative day for infection,

bleeding and paraphimosis (in preputial plasty). Boys with preputial plasty were taught to retract the foreskin regularly after application of local antibiotic ointment 3 times a day for a month. The day on which they wore pants was noted. The next follow-up was done at 3 months, and cosmetic results were assessed according to parents' satisfaction. In cases of preputial plasty, retractibility, adhesion and other complications were noted.

RESULTS

Patients with a phimosis and secondary preputial scarring underwent circumcision and patients with a primary symptomatic phimosis underwent bilateral lateral slit preputial plasty; results in both groups were compared. Circumcision was associated with more bleeding, infection and retention of urine. All the children in the preputial plasty group were able to wear pants on the 2nd day without any discomfort while it took 3-5 days for the children in the circumcision group to do the same. Six cases of preputial plasty had preputial oedema that subsided in three days time. Only one patient had paraphimosis following preputialplasty, which was due to negligence to slide back the foreskin by the mother. Two patients had skin excess and two patients had adhesion in the circumcision group (Table I). At 3-month follow-up, no patient had recurrence in the preputial plasty group. There was no scarring or poor outcome in preputialplasty as compared to circumcision. Significantly better cosmetic results were observed in patients who had undergone preputial plasty as compared to circumcision as perceived by the parents (Table II). There was no need for overnight stay in both of these procedures since all patients were operated under local anesthesia.

Figure 7

Table 1: Complications of both procedures

Complications	Bilateral lateral slit preputial plasty (n= 70)	Circumcision (n= 50)
Bleeding	2 (2.9%)	6 (12%)
Retention of urine		4 (8%)
Overnight stay		
Infection		4 (8%)
Preputial edema	6 (8.6%)	
Adhesion		2 (4%)
Skin excess		2 (4%)
Paraphimosis	1 (0.7%)	

Figure 8

Table 2: Cosmetic results according to parental satisfaction in both procedures

Study	Excellent	Good	Poor
Circumcision (n= 50)	24 (48%)	24 (48%)	2 (4%)
Bilateral lateral slit preputial plasty (n= 70)	54 (77%)	16 (23%)	

DISCUSSION

Unnecessary removal of human tissue should be avoided, foreskin being no exception. Non-retractibility of the prepuce is a physiological condition of the newborn male infant with high tendency towards spontaneous resolution during growth. Scarred prepuce develops due to recurrent infections or balanitis xerotica obliterans, and this stiff skin is not suitable for preputial plasty and invariably responds best to formal circumcision. The proponents of routine neonatal circumcision extol the advantages of preventing cancer of the penis, facilitating penile hygiene, decreasing the incidence of sexually transmitted diseases (specifically genital herpes) and a reduction in the incidence of cancer of the cervix.⁸ However, the presumed prophylactic benefits of circumcision in prevention of carcinoma of penis and cervix are yet to be proved.⁴ Childhood circumcision has an appreciable morbidity in terms of frequent minor and rare major complications like septicemia, life-threatening haemorrhage, denudation of the penile shaft, circumcision of hypospadiacs, osteomyelitis and lung abscess. Circumcised men may have to live with its surgical complications such as skin tags, penile curvature due to uneven foreskin removal, pitted glans, partial glans ablation, prominent/jagged scarring, amputation neuromas, fistulas, severely damaged frenulum, meatal stenosis, and excessive keratinisation of glans. In addition, severing of erogenous sensory nerve endings in the foreskin during infancy leads to atrophy of non-stimulated neurons in the brain's pleasure centre during the critical developmental period and has a much greater impact on adult sexuality. Circumcision also ablates junctional mucosa that appears to be an important component of the overall sensory mechanism of the human penis.^{1,9} Specific physical problems reported included glans insensitivity, need for excess stimulation to enable ejaculation and insufficient residual shaft skin to accommodate full-untethered erections. Circumcised men complain of irritation of the exposed glans as it is exposed to clothing during normal activity. Therefore, circumcision should not be recommended without a significant medical reason.^{10,11}

A more conservative approach is recommended in those symptomatic patients with non-retractile foreskins when the purpose is to achieve retraction of a narrow foreskin.¹² Several alternatives to circumcision have been proposed, aimed at widening the prepuce to allow easy retraction and better hygiene, while retaining the normal cosmetic appearance of the penis. Different varieties of preputial

plasties like ventral incision and excision of dorsal skin, four-V-flap repair, limited dorsal slit preputial plasty, triple incision plasty, Z-plasty and multiple Y-V plasty have their advocates.^{13,14,15,16,17,18} Dorsal split preputial plasty involves division of both fibrous ring and dorsal prepuce leading to an edematous and hyper-trophic ventral prepuce and a poor cosmetic result. Single plasty techniques tend to give cosmetically unsatisfactory results with an apparent cleft deformity. Multiple incision plasty techniques, though giving better cosmetic results, are said to spread the deformity around the circumference. These, however, along with the more complicated V-Y- or Z-plasty and helicoid plasty techniques, have failed to gain popular acceptance because of the complexity of the procedures.^{17,18} We have developed lateral slit preputial plasty as a preferred technique for primary phimosis with the hope to conserve histologically normal tissue and to place it in an anatomically correct manner.

Bilateral lateral slit preputial plasty is a simple, safe and easy operation; particularly, the avoidance of the frenular artery and the dorsal vein area of the penis make it quick with few complications even in inexperienced hands. In our study, its success is evident by the absence of serious bleeding problems, minimal postoperative morbidity and the high level of parental satisfaction. Therefore, the saving of foreskin is justified by avoidance of hospital stay and good cosmetic outcome at the expense of minute bleeding and self-limited preputial edema. This procedure saves the foreskin in a boy that has its own function and can be used later in cases of hypospadias, epispadias and avulsion injury to the penis.

The strength of this study is that it provides an alternative to a very common problem, which has lots of psychological and functional implications. A limitation of the study is that this alternative operation cannot be used in all cases of phimosis and only patients with primary symptomatic phimosis can undergo bilateral lateral slit preputial plasty. Apart from this, cosmetic outcome was assessed by parents, which will be subjective and may have some element of bias.

CONCLUSION

Large numbers of patients might benefit from a bilateral lateral slit preputial plasty when presenting with a symptomatic phimosis in the absence of significant scarring of the prepuce. It avoids the unnecessary loss of the foreskin,

the importance of which is only now beginning to emerge. Bilateral lateral slit preputial plasty should be the preferred surgical treatment in primary symptomatic phimosis. It is an easy, safe, cosmetically and functionally more acceptable day-care procedure than circumcision. Paraphimosis and recurrence do not occur with bilateral lateral slit preputial plasty if performed accurately and followed regularly.

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