

Research Article

Dorsal slit preputioplasty for phimosis: a prepuce conserving surgery

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ABSTRACT

Background: Phimosis is narrowing of prepuce leading to non-retraction behind glans penis. Phimosis is physiological in majority of patients. Pathological phimosis gives rise to symptoms of urinary tract infection and balanoposthitis. Most of patients with phimosis are subjected to circumcision. Instead of circumcision, a conservative surgical approach preputioplasty can be done as a prepuce salvage procedure.

Methods: Patients suffering from urinary tract symptoms and persistent narrowing of phimotic ring and recurrent balanoposthitis were subjected to this prepuce salvage surgery. The dorsal slit preputioplasty was performed in these patients.

Results: All patients were operated under local anaesthesia in outpatient department. The mean operative time was 10 minutes. No major complication was seen in any of these patients. Oedema of prepuce, haematoma and mild inflammation was noticed in a small number of patients. But wound infection and disruption occurred in none of the patients. The wound healing was good in all the patients on two weeks follow up. On one month follow up the cosmetic results were very good as per patient satisfaction.

Conclusions: Dorsal slit preputioplasty is a simple procedure to perform without special equipment, less cost and less morbidity as day surgery procedure. This technique produces salvage of prepuce thereby conserving the sensations and functions inherent to prepuce.

Keywords: Phimosis, Preputioplasty, Dorsal slit, Prepuce salvage

INTRODUCTION

Phimosis is narrowing of the prepuce leading to non-retraction of the prepuce behind the glans penis. This is commonly seen in children due to adhesions between prepuce and glans penis. This type of phimosis is known as physiological. It is known as pathological when it becomes associated with recurrent urinary tract infection or balanoposthitis. The clinicians are unable to differentiate between the two types of phimosis.¹ Parents are much concerned about non retractile foreskin or prepuce. The anxious parents carry on the advice of clinician and are referred to surgeon or urologist. Majority of these referrals by clinicians end in circumcision. The operation of circumcision carries high rate of complications. It is necessary to redefine

indications of circumcision in pathological phimosis. Also it is necessary to have knowledge of conservative surgical techniques for treatment of pathological phimosis.² These techniques are safe and quick to perform as office or day surgery procedure.

Preputioplasty is minor plastic surgery procedure with a limited dorsal slitting on the narrow phimotic ring and transverse closure. This results in widening of the phimotic ring and results in retraction of the prepuce.³ In comparison to complete dorsal slitting of prepuce, this type of conservative dorsal slit preputioplasty has the advantage of quick healing with no or little V-shaped indentation. However if two lateral incisions are placed on narrow phimotic ring instead of one dorsal incision, there is no V-shaped indentation and cosmetic results are

better. It is advisable to do undermining of the subcutaneous tissue for correction of dog ear deformity on both ends of transverse shape stitch line. In plastic surgery technique, preputioplasty is done by Z-plasty or Y-V plasty techniques requiring a sophisticated technique. General surgeons may not be acquainted with these techniques, so a limited dorsal slit technique with transverse stitching is a practically feasible technique as day surgery technique.⁴ Researchers have replaced dexon suture instead of chromic catgut sutures with a few advantages like marginal reduction in infection of the wound.⁵ Sutureless preputioplasty has been practised now; the first method is use of bipolar electric cautery to achieve haemostasis, consequently healing occurs by secondary intention. In second method the wound is closed by using cyanoacrylate glue, the healing thus occurs by primary intention.⁵

In this conservative surgery of prepuce, the prepuce remains intact thereby preserving the fine touch receptors present on prepuce which is most sensitive. Glans on the contrary has pressure receptors only. The glands present prepuce help in lubrication and lysozymes present in the secretions protect against bacterial and viral infections.⁶ Preputioplasty has all these advantages of prepuce salvage. The present study was designed in adolescents and adults who were symptomatic or suffering from pathological phimosis with purpose to study preputioplasty performed under local anaesthesia as day surgery procedure, complications, cosmetic results and quality of life.

METHODS

The study was undertaken in outdoor patients in department of surgery in patients with age group 15 to 75 years of age.

Inclusion criteria

Patients suffering from urinary tract symptoms and persistent narrowing of phimotic ring and recurrent balanoposthitis

Exclusion criteria

Balanitis xerotica obliterans, Scarred prepuce

All the patients were in general surgery outpatient department suffering from narrowing of phimotic ring or phimosis (Figure 1). All patients suffering from phimosis who were candidates for conventional surgical procedure were included in this study dorsal preputioplasty except patients suffering from Balanitis xerotica obliterans for which circumcision was performed. A total of 38 patients were included in this study for dorsal slit preputioplasty. All these operations were performed by one surgeon on outdoor basis. This was performed under local anaesthesia using 2% Lignocaine solution. On dorsal midline of penis after local anaesthetic infiltration, an

incision is given on the narrow phimotic ring about 8 to 14 mm size (Figure 2). The prepuce is retracted back over the glans and its ease to retraction is seen. The narrow phimotic ring becomes broad resulting in easy retraction of prepuce over the glans. The prepuce becomes shorter by half the length of dorsal slit which is closed transversely (Figure 3). The mucocutaneous approximation was done using 3/0 chromic catgut (Figure 4). No dressing is used. After dorsal preputioplasty, a V-shape indentation is seen in these patients. It provides excellent symptomatic relief and patient can be sent home immediately. Oral postoperative analgesics and antibiotics are given. Patient is given bath after 48 hours and local antibiotic cream application is continued. The follow up observation was done for wound healing, inflammation and infection on third, seventh and fourteen day. After one month of dorsal preputioplasty, final assessment of cosmetic result was done.

RESULTS

In this study the dorsal preputioplasty was done in the patients of age group from 15-75 years of age. In younger age group patients persistent phimosis while in older age group recurrent balanoposthitis were the main indication of dorsal preputioplasty. All patients were operated under local anaesthesia in outpatient department. The mean operative time was 10 minutes. None of the patients required analgesic injection. Oral non-steroidal anti-inflammatory drugs are given in all the patients at home. None of the patient returned back due to pain, so oral non-steroidal anti-inflammatory provided adequate pain relief in all the patients. No major complication was seen in any of these patients. Oedema of prepuce was noticed in four patients out of 38 patients included in the study. Spontaneous resolution of this oedema occurred in all four patients with 72 hours. Bluish discoloration suggesting haematoma was noticed in two patients. Mild haematoma in both these patients resolved within a week. Mild inflammation also occurred in the six patients suffering from oedema and haematoma. But wound infection and disruption occurred in none of the patients. The wound healing was good in all the patients on two weeks follow up. On one month follow up the cosmetic results were very good as per patient satisfaction. Ten patients had obvious V-shape defect but all the patients were satisfied with prepuce retraction and salvage of skin.

DISCUSSION

Phimosis is common finding in new born, children and adults. Circumcision is advised conventionally to these patients. Circumcision is also performed for cultural or religious reasons in adolescence. This has raised the incidence of circumcision to 30% in population.⁷ Physiological phimosis can be treated by conservative method using steroid cream and retraction exercises. Children persisting with phimosis in adolescence and adults suffering from phimosis are candidates for

prepuceal surgery. If conventional surgery of circumcision is not advised, then a conservative surgical technique of the preputioplasty for prepuce salvage can be advised. Densely adherent prepuce to glans due to recurrent balanoposthitis and badly scarred prepuce are indications for circumcision.

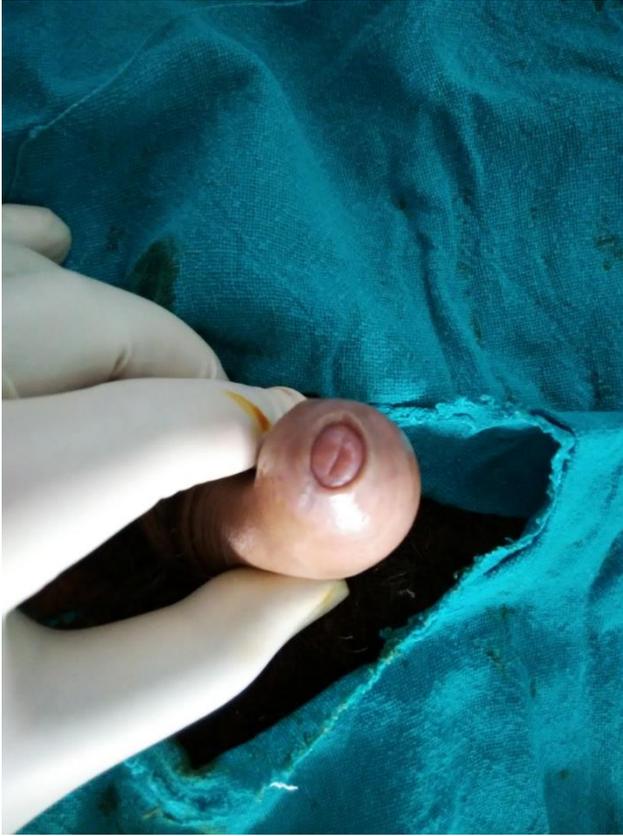


Figure 1: Phimosis.

Preputioplasty is a conservative surgical technique as compared to classical circumcision for treatment of phimosis. Dorsal preputioplasty gives excellent relief in symptoms. It is a plastic surgery technique which is used for salvage of prepuceal skin. Two types of procedures are recommended for preputioplasty; the first procedure is a dorsal slit with transverse closure and second is lateral incision technique. A single dorsal slit technique is done commonly due to its simplicity, less operative time of a few minutes, less cost, less morbidity and fast recovery as day surgery procedure. The lateral preputioplasty with two lateral incisions on prepuce has the cosmetic advantage.⁸ Dorsal preputioplasty has the advantage of minimum pain, fewer complications, less cost and a quick procedure with advantage that it can be performed as day surgery. This conservative surgical technique is a good alternative to traditional circumcision and produces prepuce salvage. The conservation of penile prepuce is important for sexual physiology and erectile function. This dorsal slit preputioplasty with transverse closure has been performed by many researchers due to its simplicity and excellent results as a day surgery procedure. The lateral preputioplasty is thought to give

better cosmetic results being devoid of dorsal V-shaped cleft.⁸ Further triple incision preputioplasty has been described.⁹

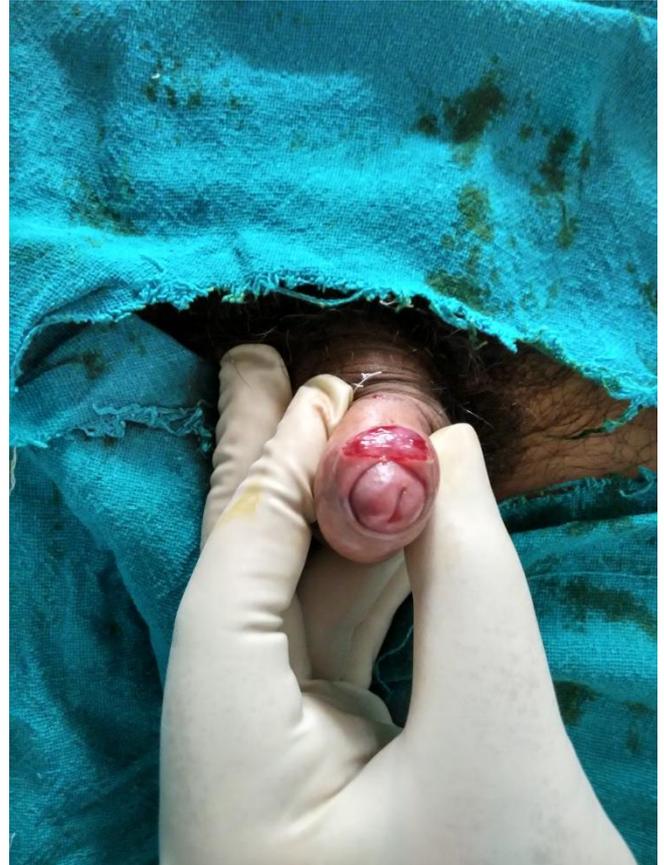


Figure 2: Dorsal slit incision.



Figure 3: Transverse closure of the dorsal slit.

Dorsal slit preputioplasty is standard procedure for prepuce salvage. In our series the results of dorsal slit preputioplasty were excellent and at par with other series in terms of the complications of oedema, haematoma, inflammation and wound disruption. A residual dorsal V-shape cleft is seen in most of patients in initial few weeks.¹⁰ The remodelling of this V-shape defect occurs in

a few months period in most of patients. Most of these patients are children, so with growth of a child also leads to obliteration of this defect. The final cosmetic results were very satisfactory to patients.¹¹ Frenuloplasty and meatoplasty may be required in certain patients but none of our patient was a candidate for adjunct procedures. The preputioplasty can be done by a technique of Y-V plasty but it is a complex plastic surgery technique. On the other side dorsal slit preputioplasty is a rapid day surgery technique which can be done by a general surgeon.¹²

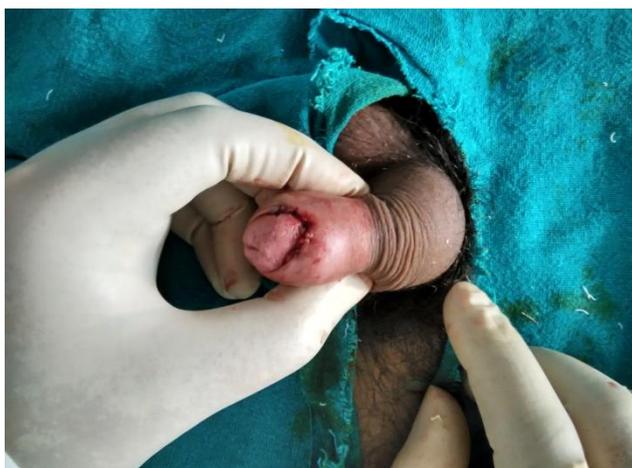


Figure 4: Preputioplasty completed.

The disadvantage the preputioplasty described is recurrence of phimotic band.¹³ Recurrence was not observed in our study group although follow up is short. The dorsal slit preputioplasty is simple technique for conservation of prepuce in patients with phimosis who are conventionally subjected to circumcision.

CONCLUSION

Phimosis particularly in children if physiological can be treated by conservative methods. The pathological phimosis due to balanitis xerotica obliterans or a badly scarred prepuce is best treated circumcision. Rest all patients of phimosis can be treated by less radical surgery called preputioplasty. Dorsal slit preputioplasty is a simple procedure to perform without special equipment, less cost and less morbidity as day surgery procedure. This technique produces salvage of prepuce thereby conserving the sensations and functions inherent to prepuce. The main indications were irretraceable prepuce, ballooning on voiding and recurrent balanoposthitis. The functional results were good in all the patients but two

patients were not satisfied with cosmetic results due to V-shape defect. In view of good results and patient satisfaction dorsal slit preputioplasty is a good alternative to circumcision.

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Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

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