Urethral fistula following circumcision: salvaged by buccal mucosa graft urethroplasty

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Abstract Fistula following circumcision and at times accompanied by disfigurement of the glans penis is a common problem in our country, where a large number of circumcision is performed by untrained professionals. These complications may have profound negative psychological impact on the growing child. Herein, we report the successful closure of such fistula using buccal mucosa, which occurred following circumcision (for phimosis) in a 15 year old boy. This resulted in the disfigurement of the glans penis with a distal urethral fistula. The fistula was managed by dorsal onlay buccal mucosa graft urethroplasty (BMGU). The patient has excellent cosmesis at 6 months followup with a good urinary stream. This technique can give better results than those, where skin grafts or local flaps are used for fistula closure. BMGU is a versatile technique with good long term results. The cosmesis and functional results are satisfactory and help in improving the self esteem and sexual function in the years to come.

Keywords Techniques · Buccal mucosa · Circumcision · Fistula · Phimosis

Introduction

Circumcision is primarily performed for religious purpose in our country; at times it is also carried out for complications like phimosis. Due to lack of proper health care and trained staff in rural areas; many a times, circumcision is performed by untrained professionals. This may result in complications like disfigurement of the glans penis or fistula which may go unreported. These complications may have negative psychological impact on the growing child and may even lead to loss of self esteem and problems of sexual inadequacy afterwards.

Most of the times, the fistula is repaired by primary closure after excising the redundant skin. Other options are skin grafts or flaps (if available) but the functional and cosmetic results are mostly unsatisfactory. Buccal mucosa graft urethroplasty (BMGU) can prove useful in such situations and perhaps give better results. Herein, we report the successful closure of a fistula by BMGU, which had occurred following circumcision.

Surgical technique

A 15-year-old boy underwent circumcision for phimosis at a rural setup 3 years back. Following the operation he had partial loss of glans penis with a distal urethral fistula (>1 cm) [Fig. 1a]. Due to this problem he also had splaying of urinary stream. His parents were concerned regarding his future sexual function. He had consulted physicians at a local hospital and was then referred to us for further management.

Procedure

Appropriate hematological and radiological investigations were performed in the pre-operative period; fitness for

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anesthesia was assessed. The buccal graft was harvested from the inner cheek under local anesthesia as per our technique; rest of the procedure was performed under epidural anesthesia [1]. Fistula was identified by passing a malleable metallic bougie [Fig. 1b]. A circumcoronal incision was given below the coronal sulcus and the penile skin was degloved by blunt dissection above Buck's fascia. Urethra was identified and exposed distally in the midline. Another incision was given on the dorsal urethra in the midline and the urethra was separated above the corpora. The graft was placed in this groove and sutured to the adjacent urethra using continuous 5-0 monofilament poliglecaprone-25 suture [Fig. 2a]. A silastic 14 French Foley catheter was placed and the urethra was closed using the same absorbable sutures [Fig. 2b]. Penile skin was stitched using absorbable sutures. A firm dressing was applied and the patient was placed on anti-erection drug (Diazepam) along with antibiotics and analgesics in the post-

operative period. The dressing was removed after 48 hours [Fig. 3a]. The patient was discharged on 3rd postoperative day and advised to attend the outdoor patient department (OPD) for further treatment. The catheter was removed after 2 weeks in the OPD and the patient was instructed to come for follow-up at regular intervals.

Results

The postoperative urinary stream is good and splaying of urine has stopped. The shape of the glans following this procedure is satisfactory and the patient seems happy with the results. At 6 months follow-up, the results are consistent; the urine flow rate continues to be good and the caliber of the stream is satisfactory. The glans has acquired a rounded (almost normal) shape resulting in good postoperative cosmesis [Fig. 3b].

Fig. 1 (a) Preoperative appearance of the penis. (b) Fistula being delineated

Fig. 2 (a) Buccal mucosa graft applied as dorsal onlay. (b) Closure of the urethra over Foley catheter

Fig. 3 (a) Early postoperative appearance. (b) Cosmetic appearance at 6 months follow-up

Discussion

The major advantage of using buccal mucosa is its ease of harvest and cosmesis since the donor site is inside the mouth and the patient does not have to worry about scars in the postoperative period. Oral healing is excellent and majority of the patients are able to resume normal diet within 48–72 hours of operation. The results of BMGU are excellent in cases of hypospadias and stricture of the urethra [2]. Now it has surpassed all other graft materials to become the most sought after graft in these conditions. Some surgeons have used buccal mucosa in complicated cases following circumcision and have achieved good results [3]. Others have used it alone or in combination with Snodgrass technique in cases of reoperations for glans disfigurement and stricture of the urethra and have achieved satisfactory long term results [4, 5].

Skin graft shrinks after a while and there is the problem of scar at the donor site. Many a times, penile or preputial skin is already scarred or consumed as evident in this case. Skin flaps from adjacent areas have been used in such cases but they have their own problem of high failure rate, disfigurement and distortion of the curvature of penis.

BMGU is perhaps better than Snodgrass technique in this particular situation since it creates a wider lumen leading to better voiding stream and reduces the chance of restenosis. Cosmetic appearance seems superior. Buccal mucosa provides a scaffold for the local tissues to heal and thus gives good results. In our institute we have used BMGU for fistulae and stricture in many patients and continue to get consistent and satisfactory results in majority of our patients.

Conclusion

BMGU is a versatile technique which has stood the test of time. It should be preferred over skin grafts and flaps and perhaps even Snodgrass technique for complicated cases such as this one. Since such cases are less, it would be difficult to conduct a three-arm trial comparing buccal mucosa to skin grafts/flaps to Snodgrass repair to know the ultimate outcome. Therefore, the surgeon must use his or her discretion and try any technique which he or she is confident with and which he or she believes can give the best results to the patient concerned.

Conflict of interest The authors do not have any disclosable interest

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