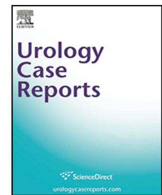
Urology Case Reports 20 (2018) 30–32

Contents lists available at ScienceDirect

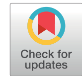
Urology Case Reports

journal homepage: www.elsevier.com/locate/eucr



Trauma and reconstruction

Urethral diverticulum repair using diverticulum wall: A new technique for preparing covering flap layer



Farzad Allameh, Amirreza Abedi, Mahmoud Yavar, Saleh Ghiasi, Amirhossein Rahavian*

Department of Urology, Shohada-e-Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Introduction

Urethral diverticulum has been reported in men and women but it is more common in women due to weaker supporting tissue of urethra. Most of urethral diverticulum are acquired and trauma is one of the causes[1] and proper surgical technique is very important to have good outcome. Here we use diverticulum wall as a supporting tissue for our technique.

Case report

The patient is a 17 years old boy, referred to Shohada-e-Tajrish hospital with post voiding dribbling for 2 months. In past medical history the patient had an admission in Intensive Care Unit (ICU) due to suicidal attempt and traumatized his urethra due to removing Foley catheter with the balloon. In retrograde urethrography (RUG) urethral diverticulum in proximal part of penile urethra was detected (Fig. 1). During the operation we incised the diverticulum and dissected the epithelium layer from the other diverticulum parts. Then closed the epithelium after trimming in parallel line with the urethra using absorbable and water tight sutures. We tried not to insert the needle through the urothelium margins. After closing the urothelium we decided to utilize the diverticulum wall as a supporting layer on our sutures and as you see in Fig. 2 this layer made a good coverage over the closed orifice of diverticulum and so there was no need to dissect for penile dartos flap. The excised diverticulum sent to pathology department and our colleagues reported congested urethral wall with fibrosis, edematous change and mild chronic inflammation. The patient discharged two days after surgery and there were no edema in penis and the wound had not any leakage. We remove the urethral Foley catheter after two weeks and the patient void normally without any problem. After 6 months the patient had no urinary symptoms and in follow up cystoscopy and RUG there was no stricture in urethroplasty site (Fig. 3). We visited the patient one year after the procedure and there was not any voiding problem and uroflowmetery showed normal pattern and good urine velocity.

Discussion

Urethral diverticulum is a outpouching of the urethra into the connective tissue layers that surround it. A few cases of urethral diverticula are congenital but most of them are acquired that can be caused by trauma and infection. Some common symptoms of urethral diverticulum include urgency, frequency and incontinency. Urethral diverticulum is a rare condition in men[1] but here we review some articles about urethral divertucula. El Ammari and his colleagues in 2012 presented a 42 year old paraplegic Arab man with a history of chronic clean intermittent catheterization (CIC) that followed with urine leakage through the urethral meatus, recurrent urinary tract infection and penoscrotal mass with impression of urethral diverticula, that underwent open diverticulectomy and primary urethroplasty with interposing penile dartos at the site of operation and in one year follow up patient was good.[2] In 2012 a retrospective study was done by Cinman and colleagues. In a period of 11 years, 22 men with acquired urethral diverticula were reviewed. Of the 22 patients, 12 (54.5%) men underwent urethral diverticulectomy and urethroplasty, 3 (13.5%) patients underwent ileal conduit urinary diversion and 7 (32%) were treated nonoperatively.[3]

Radojicic and et al. in 2014 used a method for operation of urethral diverticula as a complication of hypospadiasis repairing, termed 'pseudospongioplasty' that in this method two subcutaneous vascularized tissue wings as a result of de-epithelialization of excess skin used as folds for mechanical support of ventral wall of repaired urethra with acceptable outcomes.[4] Jang et al. applied buccal mucosa for reconstruction of urethral diverticula and overlying dartos fascia for supporting site of diverticulectomy that in 7 months follow up patient did not have any complaint.[5]

One of the key points of urethral diverticula surgical repairing is assembling a good supporting tissue on surgical site to minimize recurrence and complication rate. A vascularized tissue is the first choice for this purpose like our case but sometimes it is difficult to find a proper tissue, for example in large diverticula, so in this situation using an avascularized graft like buccal mucosal graft warranted good results because after a while this tissue was vascularized.[2–4]

* Corresponding author. Department of Urology, Shohada-e-Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
E-mail address: amirrahavian@yahoo.com (A. Rahavian).

https://doi.org/10.1016/j.eucr.2018.06.002
Received 9 March 2018; Received in revised form 25 May 2018; Accepted 5 June 2018
Available online 08 June 2018
2214-4420/ © 2018 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license
(http://creativecommons.org/licenses/BY-NC-ND/4.0/).

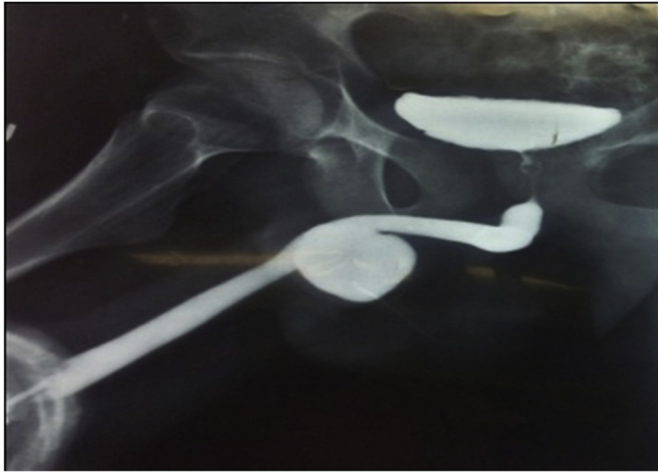


Fig. 1. Retrograde urethrography before operation that revealed diverticulum at proximal part of penile urethra.

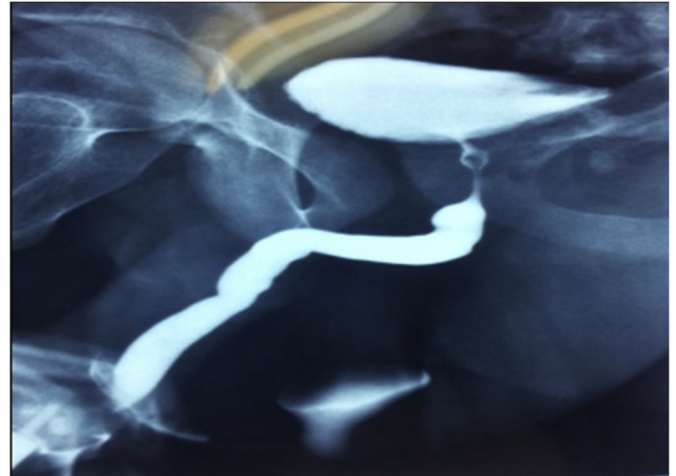


Fig. 3. Retrograde urethrography which was done 6 months after operation.

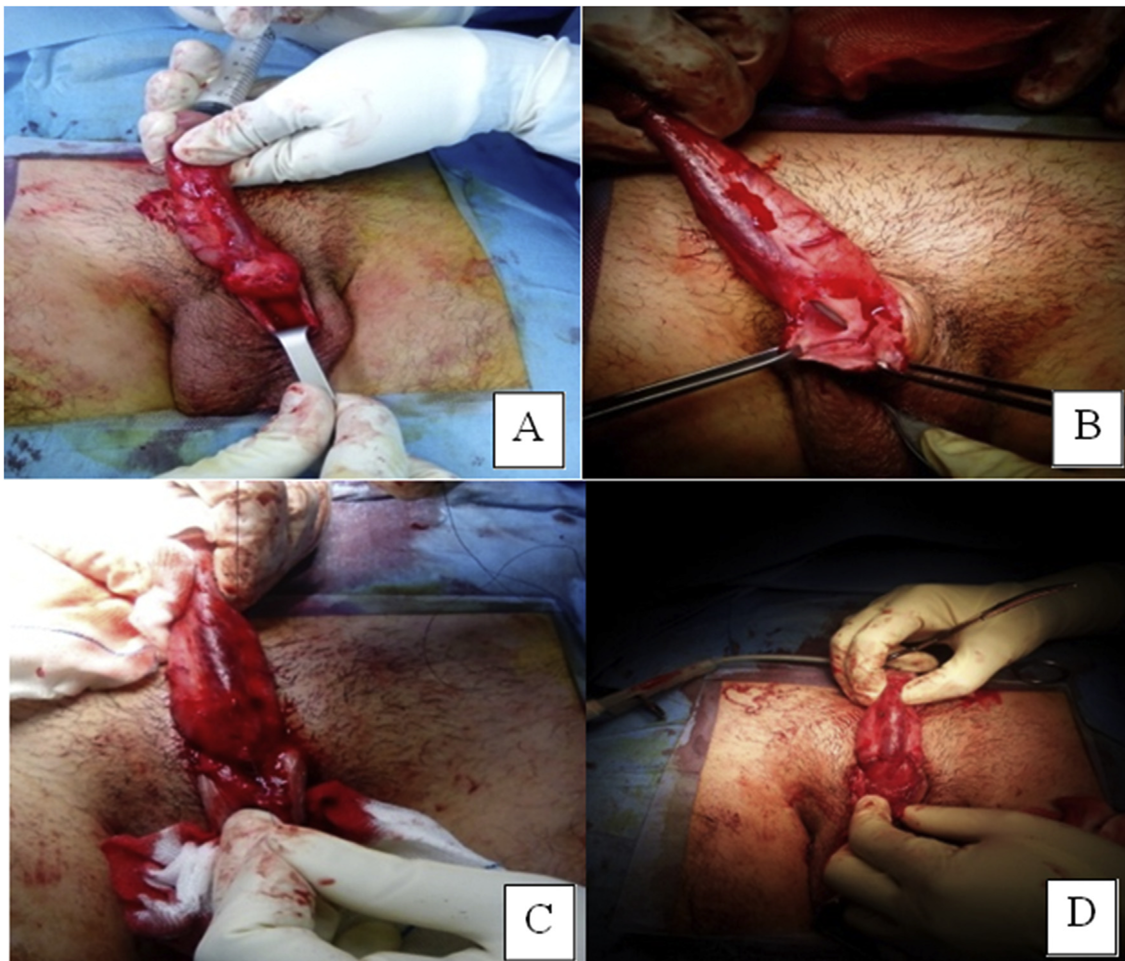


Fig. 2. Operation steps, A: Finding the location of diverticulum at proximal part of the penile urethra. B: Performing incision in diverticula and separating the urothelium in diverticulum wall. C: Closing the diverticulum orifice. D: Interpose the rest of diverticulum wall as a supporting flap over the site of urethroplasty.

Conclusion

We try to show a new technique for creating supporting flap layer for covering urethroplasty site which has the advantage of minimal dissection during surgery and good post operation outcomes.

References

1. Bote SM, Gite VA, Nabi Siddiqui AK, Patil SR, Nikose JV. Acquired male urethral diverticulum: report of two cases. *Arch Int Surg.* 2016 Jul 28;6(1):54–56.
2. El Ammari JE, Riyach O, Ahsaini M, Ahallal Y, El Fassi MJ, Farih MH. Acquired urethral diverticulum in a man with paraplegia presenting with a scrotal mass: a case report. *J Med Case Rep.* 2012 Nov 21;6:392.
3. Cinman NM, McAninch JW, Glass AS, Zaid UB, Breyer BN. Acquired male urethral diverticula: presentation, diagnosis and management. *J Urol.* 2012 Oct;188(4):1204–1208.
4. Radojicic ZI, Perovic SV, Djordjevic ML, Vukadinovic VM, Djakovic N. 'Pseudospongioplasty' in the repair of a urethral diverticulum. *BJU Int.* 2004 Jul;94(1):126–130.
5. Jang TL, Blunt LW, Yap RL, Brannigan RE, Gonzalez CM. Large urethral diverticulum presenting as a scrotal mass: urethral reconstruction with ventral onlay buccal mucosa. *J Urol.* 2004 Jan;171(1):351–352.