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Case Report on Rare Procedure: Re Do Boari Flap for Recurrent Ureteric Stricture

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Abstract

Introduction

Boari flap is a reliable technique to reconstruct ureteral defect regardless of their site. The most common complication after initial boari flap is recurrent ureteric stricture. The recurrent ureteric stricture after initial Boari flap is very rarely managed with re-do boari flap with only two cases done by one author from the same centre making our case the third one.

Case Presentation

We report a case of 33-year-old female patient who had iatrogenic ureteric injury during the third caesarean section which was managed with ultrasound guided Right percutaneous nephrostomy tube insertion on third post-operative day followed by initial boari flap after two and half month of injury. Subsequently, the patient put on stent exchange for one year after initial boari flap for recurrent at which time re-do boari flap was done.

Clinical Discussion

Despite technical difficulties due to adhesion arising from prior surgery, re-do Boari flap was performed, using an open approach after transacting the stenotic segment above the level of the previous flap and ureter was re-implanted to a newly formed Boari flap. Patient is symptom free at second, third- and fourth-month post operatively on follow up with no hydronephrosis on ultrasound.

Conclusion

Re-do Boari flap for recurrent ureteric stricture after prior Boari flap has good outcome but studies with large volume of patient with longer duration of follow up is recommend. Re-do Boari flap for recurrent Boari flap anastomotic stricture, without the use of a bowel segment or augmentation, hence avoids both long term and short complications associated with bowel use.

Keywords: Boari Flap, Hydronephrosis, Re Do Boari Flap, Recurrent Ureteric Stricture, Ureteric Injury

1. Introduction

Iatrogenic ureter injury most commonly occurs during gynaecologic surgery with abdominal hysterectomy being the most common cause of injury with a potentially devastating complication. The Boari bladder flap procedure is a reliable technique to reconstruct ureteral strictures regardless of site with most common reported complication of the procedure being recurrent stricture formation. Re-do Boari flap for recurrent ureteric stricture after prior Boari flap is one urologist's surgical options with good outcome even if the procedure less commonly reported. Boari-flap ureteral re-implantation as a sort of urinary bladder reconstruction permits restoration of the urinary tract and allows for successful kidney transplantation salvage for patient with post-transplant ureteral stenosis [1-3].

Herein, we present a case, where re-do Boari flap reconstruction was performed to manage recurrent ureteric strictures after initial boari flap. To our knowledge, there are only two cases managed with re-do Boari flap in literature as mode of ureteric stricture repair after recurrence of stricture following initial boari flap [4].

2. Case Presentation

We report a case of 33-year-old female patient who was managed with Boari flap for iatrogenic ureteric and Re-do Boari flap was done again after 1 year of initial boari flap for stricture of initial boari flap. The patient underwent 3rd caesarean section for indication of previous caesarean section with intra-operative diagnosis of placenta percreta which was adherent all the way to the bladder mucosa. As the patient was torrentially bleeding it was compelling to do partial hysterectomy and mass ligation was done to control the bleeding to salvage the patient. On 3rd post-operative day ultrasound study revealed Right moderate hydronephrosis for which ultrasound guided Right PCN placed and kept there for two and half months at which ante grade pyelogram was done. The ante grade pyelogram showed contrast passing up to level of pelvic brim but it does not enter bladder. (Figure1) At this time exploration was decided and patient explored through previous pfannestein

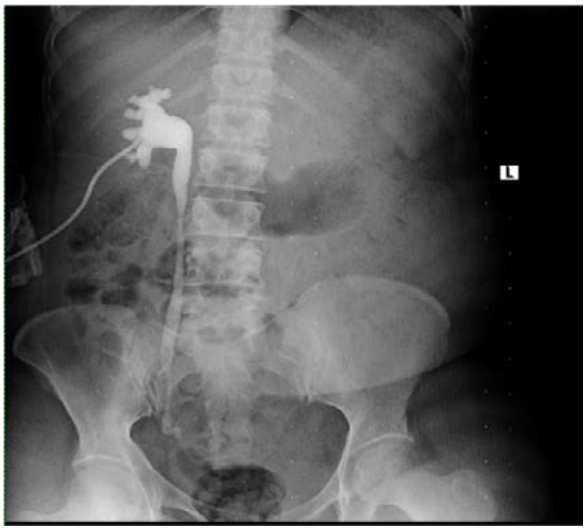

Figure 1: Ante Grade Pyelogram Demonstrating Right Side Hydronephrosis Without Passage of Contrast into The Bladder Before Initial Boari Flap

After two and half month of initial hysterectomy patient was prepared and exploration done with intra operative finding of though inflammatory adhesion between lower abdominal wall, urinary bladder and appendix with loculated abscess pocket with suture ligation of right ureter. At this time appendectomy, bladder debridement and boar flap repair of right ureter over DJ stent which was removed after six weeks of surgery. After removal of DJ stent patient was having right flank pain which was relieved by reinsertion of DJ stent and subsequently patient has twice DJ stent exchange as she was having flank when stent is removed. After one year of initial boari flap repair CT urography was done and it showed right moderate hydrouteronephrosis with cortical enhancement with contrast and with dilated ureter with distal abrupt tapering. (Figure 2)

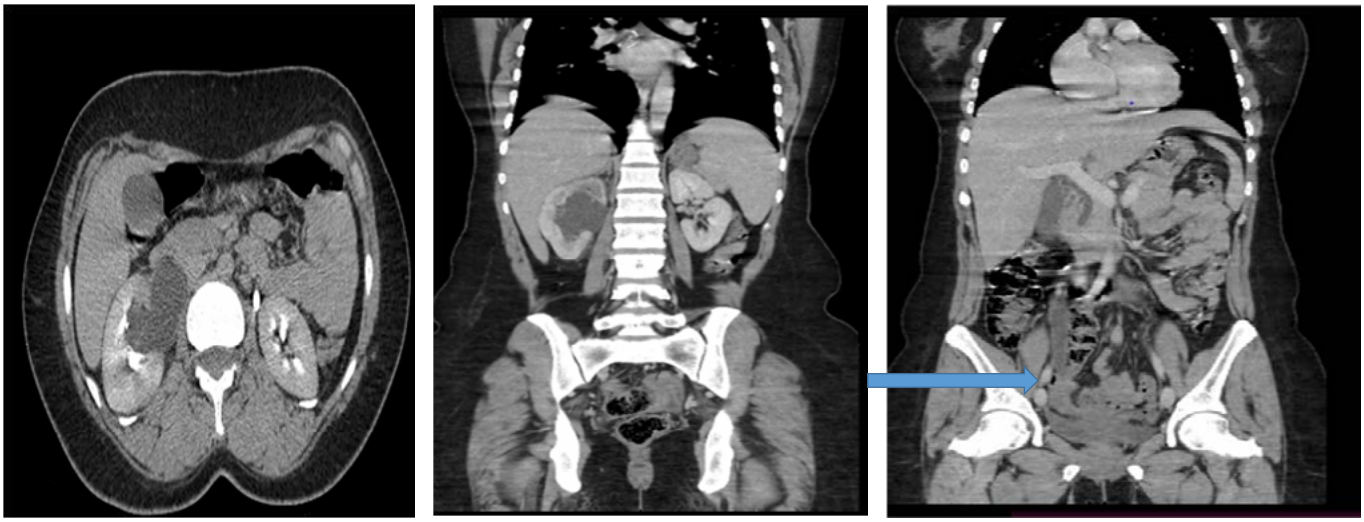

Figure 2: CT Urography Before Re-Do Boari Flap Demonstrating Right Moderate Hydrouteronephrosis With Cortical Enhancement with Contrast on Axial Image (A)And Coronal Image (B) With Dilated Ureter and Distal Abrupt Tapering on Coronal Image (C) With Blue Arrow Demonstrating Site of Taper

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incision with intra operative finding of extensive adhesion between lower abdominal wall and urinary bladder with one-centimetre stricture at site previous anastomosis between boari flap and ureter with dilated proximal ureter. At this time strictured segment was resected and re-anastomosis between ureter and boari flap was done over DJ stent and pelvic drain was kept.

2.1. Postoperative Course

At first post-operative day patient started sips, pelvic drain removed on second post-operative day and patient was discharged home on fourth post-operative day. At fourteenth post-operative day patient was seen at referral clinic and transurethral catheter remove and the patient has no compliant with clean surgical scar. Post-operatively, stent was removed at first month and patient is symptom free at second, third and fourth post-operative month with normal abdominal ultrasound.

3. Discussion

The options available to treat a large ureteric defect are transureteroureterostomy, psoas hitch, Boari flap, ileal segment replacement for the lost ureter and renal auto transplantation. Boari flap is a reliable technique to reconstruct ureteral defect regardless of their site. Renal mobilization with downward nephropexy is a useful adjunctive maneuver for proximal strictures when boari flap is used for proximal ureteric stricture. The most common complication is clearly recurrent stricture formation, resulting from either ischemia or excessive tension on the anastomosis [2,3].

The number of reported patients treated with a Boari flap is not significant, yet the results are excellent if a well vascularized, tension-free flap is used especially there is very scarce literatures on use of re-do boari flap for failed previous ureteric stricture repair. Despite technical difficulties in dissecting and exposing the previously boari flap site due to extensive adhesion between lower abdominal wall and urinary bladder and taking into consideration the patient's relatively normal bladder volume, re-do Boari flap was performed, using an open approach: the healthy ureter was transacted above the stenotic segment at the level of the previous flap. The ureter was re-implanted to a newly formed Boari flap, which was harvested again from the bladder wall. This technique of re-do Boari flap for recurrent Boari flap anastomotic stricture, without the use of a bowel segment or augmentation, hence avoids both long term and short complications associated with bowel use [5,6].

- Acronyms and Abbreviations
- CTU-computed tomography urography
- DJ stent-double J stent
- PCN-percutaneous Nephrostomy

4. Conclusions

Re-do Boari flap for recurrent ureteric stricture after prior Boari flap is one urologist's surgical options with good short-term outcome but studies with large volume patient with longer duration of follow up is recommend it as alternative procedure for patients with recurrent ureteric stricture after initial boari flap repair.

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Data Availability Statement
available upon request of corresponding author if necessary

Conflict of Interest
The authors declare no conflict of interest

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