

CASE REPORT

doi: 10.5455/medarch.2023.77.493-495

MED ARCH. 2023; 77(6): 493-495

RECEIVED: OCT 12, 2023

ACCEPTED: NOV 25, 2023

Department of Urology, Faculty of
Medicine Universitas Brawijaya, Saiful
Anwar General Hospital Malang, Indonesia

Corresponding author : Paksi Satyagraha.
Department of Urology, Faculty of
Medicine Universitas Brawijaya, Saiful
Anwar General Hospital Malang,
Indonesia. E-mail: uropas.fk@ub.ac.id.

Complex Complicated Posterior Urethral Stricture with Contracted Bladder and Prostatorectal Fistula: How Do We Manage It?

Athaya Febriantyo Purnomo, Paksi Satyagraha, Kurnia Penta Seputra

ABSTRACT

Background: Posterior traumatic urethral strictures due to PFUI have a wide variety of complication, such as erectile dysfunction, incontinence, bulbar urethral necrosis, and fistula. Bulbar urethral necrosis caused by inadequate blood supply for bulbar urethra, fistula developed by many surgical attempts done by inexperienced surgeon worsen the patient's condition, low vascular capability manifested as erectile dysfunction as well, and long term catheterization causes contracted bladder. This condition deteriorates the function and quality of life. Therefore this is very challenging condition to treat. **Case Presentation** Thirty-years-old man presented with the chief complaint of urine leakage from rectum and cutaneous fistula since 9 years ago. Patient also come with complex PFUI, iatrogenic bulbar urethral necrosis, erectile dysfunction with EHS score of 1, contracted bladder, and prostatorectal fistula. Patient underwent eight various surgical procedures including open surgery and internal urethrotomy previously. We performed cystoprostatectomy and fistula repair transabdominally. Continent cutaneous stoma ileal neobladder with Mansoura approach was performed afterwards. Patient was counselled and educated on how to do clean intermittent self-catheterization, patient was fully satisfied with his bladder function which increase quality of life. **Conclusion:** In this case of BUN with contracted bladder and prostatorectal fistula, continent cutaneous stoma is an option to improve patient's quality of life. PFUI could be treated with high success rate if treated properly from the beginning, more intervention by inexperienced surgeon could deteriorate success rate and also quality of life.

Keywords: Bulbar Urethral Necrosis, Complex PFUI, Continent Cutaneous Stoma, Contracted Bladder, Prostatorectal Fistula.

1. BACKGROUND

Pelvic fractures can cause urethral injuries in about 15-30% of patients (1-3). The most common site of injury is at bulbomembranous junction. Another less common site of injury in adults is the prostates membrane junction, which when compared to children this is where the injury usually occurred. Because of the nature of the injury, the bladder along with the prostate and membranous urethra are displaced cranially. Many suspected substances like TGFB1 had a role in urethral stricture process (4). The goal of surgery is to achieve a tension-free bulbomembranous anastomosis. Anastomotic urethroplasty remains the gold standard management for pelvic fracture urethral injury (PFUI) (5).

PFUI can cause other serious complications such as bulbar urethral necrosis. Previously, it was classified as a "long gap" in the urethra or "unsalvagable" after several failed urethroplasty attempts.5 Bulbar urethral necrosis is the result of pelvic fractures and repeated transection attempts on repair procedures, which cause partial or complete loss of bulbar urethra due to inadequate blood supply after urethral transection (5). In 1986, Turner Warwick described this event as spongionecrosis of the bulbar urethra (6). This spongionecrosis can occur due to over-mobilization of the distal urethra, concomitant hypospadias, and extensive spongiofibrosis caused by repeated previous surgical procedures of the bulbar urethra (6). Consequences of inadequate blood supply for bulbar urethra, then fistula developed by many surgical attempts done by inexperienced surgeon and low vascular capability

© 2023 Athaya Febriantyo Purnomo, Paksi Satyagraha, Kurnia Penta Seputra

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

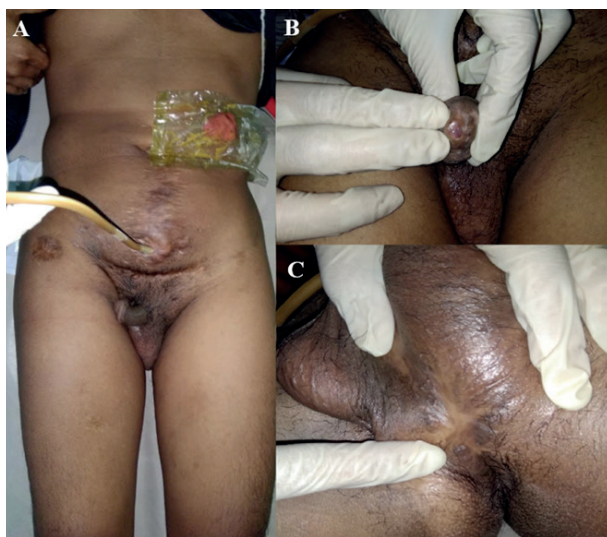


Figure 1 : The clinical condition of the patient first come. A) A left hemiabdominal stoma with a 15 cm diameter mid-suprapub post-operative scar with a 20Fr catheter attached. The postoperative scars of Pfannenstiel are 10 cm long. B) The glans penis appears lichen sclerosus. C) Perineum is found fistula (+)

manifested as erectile dysfunction as well. Long term catheterization also causes contracted bladder (1,2).

Management options for complex PFUI cases are still very diverse, depending on the individual patient's problem. Most cases of bulbar urethral necrosis cannot be performed anastomosis urethroplasty due to inadequate urethral length for the procedures (5,6).

2. OBJECTIVE

Thus, bulbar urethral necrosis and its complications are still become the problem for patients to get the best management, so that exposure is required and discussion of the case, so that it is necessary for urologists to be familiar in dealing with PFUI cases with reconstructive urology approach.

3. CASE PRESENTATION

Thirty-years-old man presented with the chief complaint of urine leakage from rectum and fistula since 9 years ago indicated complex PFUI with iatrogenic bulbar urethral necrosis (BUN), erectile dysfunction with Erection Hardness Score (EHS) score of 1, contracted bladder, and prostatorectal fistula. He had history of road traffic accident and abundant diverse surgical procedure.

Patient underwent eight various surgical procedures from previous referral hospital. Open cystostomy had been done in January 2009 continued with panendos-

copy and internal urethrotomy in 2011 that causes prostatorectal fistula. Bladder repair was done in June 2013, then patient underwent internal urethrotomy, vesicolithotomy, and cystostomy closing however patient could not spontaneously urinate, then redo open cystostomy had been done afterwards. This prolonged catheterization leads to contracted bladder. Moreover many various surgical procedures that had been done leads to inadequate blood supply consequences such as bulbar urethral necrosis and erectile dysfunction. Patient then referred to Saiful Anwar General Hospital.

In physical examination we found stoma in left hemiabdomen, 15cm midline post-operative scar on cystostomy 20 Fr and 10cm of Pfannenstiel post-operative scar, lichen sclerosus (+), and fistula on perineum. Urinalysis showed urinary tract infection with increased urine pH and leucocyte. From penile USG Doppler, arterial insufficiency suggestive to bulbar urethral necrosis was found. We performed panendoscopy and obliterated and prostatorectal fistula with internal opening at left lateral distal of verumontanum was found. We performed cystoprostatectomy and fistula repair trans-

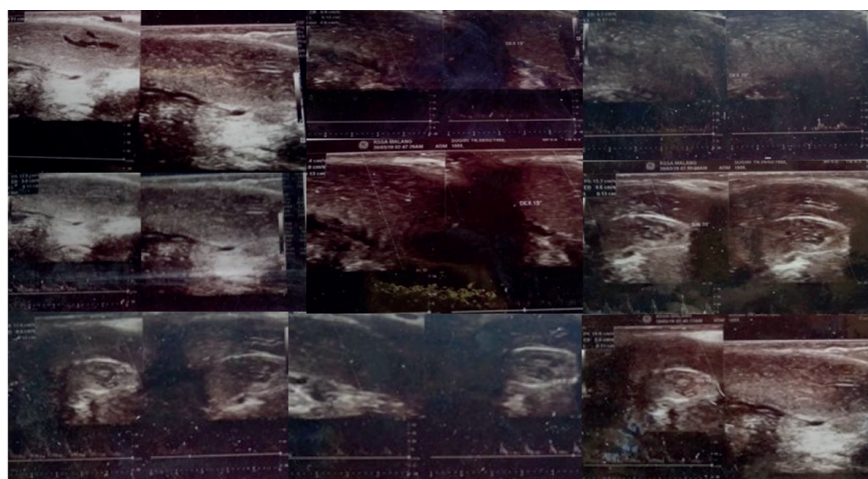


Figure 2. Penile USG Doppler found arterial insufficiency

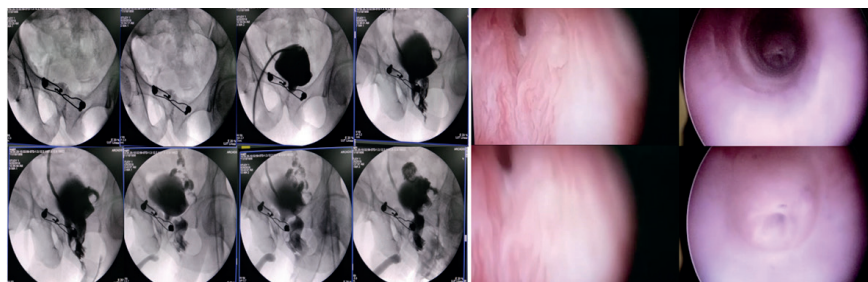


Figure 3. Bipolar Voiding Cystourethrography (left) and Panendoscopy (right) of patients showing total stenosis of the urethra pars bulbosa and prostatorectal fistula whose mouth is left lateral to the distal verumontanum.

abdominally. Continent cutaneous stoma with ileal neobladder was performed afterwards.

After cystoprostatectomy, the continent cutaneous urinary diversion procedure was performed. A continent cutaneous reservoir uses a low pressure tubularized chamber formed with a functional mechanism designed to prevent involuntary discharge from urine

flow. Mansoura technique in this operation consist of embedding a tapered ileal segment within a serous lined tunnel provides several distinct advantages. Continence is then provided by a passive mechanism derived from the tubular resistance of the tapered ileal segment as well as a dynamic mechanism. The mucous lining of the continent outlet tolerates the trauma of and provides a natural lubricant for intermittent catheterization. The continent outlet is enveloped within a serous lined tunnel which prevents any tendency for fistula formation that is used in this case (7).

The reservoir is distinguished by the type of valve mechanism made can be catheterized or not, and the intestinal segments used. The advantage offered from this diversion of urine is its ability to control urine output, but must require clean intermittent self-catheterisation (CISC) through the stoma both to excrete urine and mucous irrigate. This continent cutaneous urine diversion is still used in non-functional urethral conditions such as in the case of this bulbar urethral necrosis or intraoperative urethral margins that orthotopic urine diversion cannot be done.

On the 14th day evaluation of treatment, diagnostic procedures were performed in the form of cystography and splintography as shown in Figure 6. Good results are obtained and the patient is satisfied with the creation of a new urinary tract.

Patient was counselled and educated on how to do CISC, patient was fully satisfied with his bladder function which increase quality of life. Patient was satisfied with the result. Quality of Life follow up in first month patient life was back to normal ever since, urinate can be controlled by CISC, social life was normal. Third and sixth month of operation patient satisfied for normal bladder function life he has.

4. CONCLUSION

In the case of complex PFUI, we cannot predict for what conditions the patient may came looking for help. Surgeon should be ready of any condition. It is necessary to communicate what is the best option and hope of the patient. In this case of complex PFUI with its complications such as bulbar urethral necrosis with erectile dysfunction, contracted bladder, and prostatorectal fistula, continent cutaneous stoma is an option to improve patient's quality of life. PFUI could be treated with high success rate if it was treated properly from the beginning, more intervention by unexperienced surgeon could deteriorate the success rate and also the quality of life.

- **A Acknowledgement:** This study is supported by the Universitas Sumatera Utara
- **Author's Contribution:** All authors have critically reviewed and approved the final draft and responsible for the content and of the manuscript.
- **Conflicts of interest:** There are no conflicts of interest.
- **Financial support and sponsorship:** None.

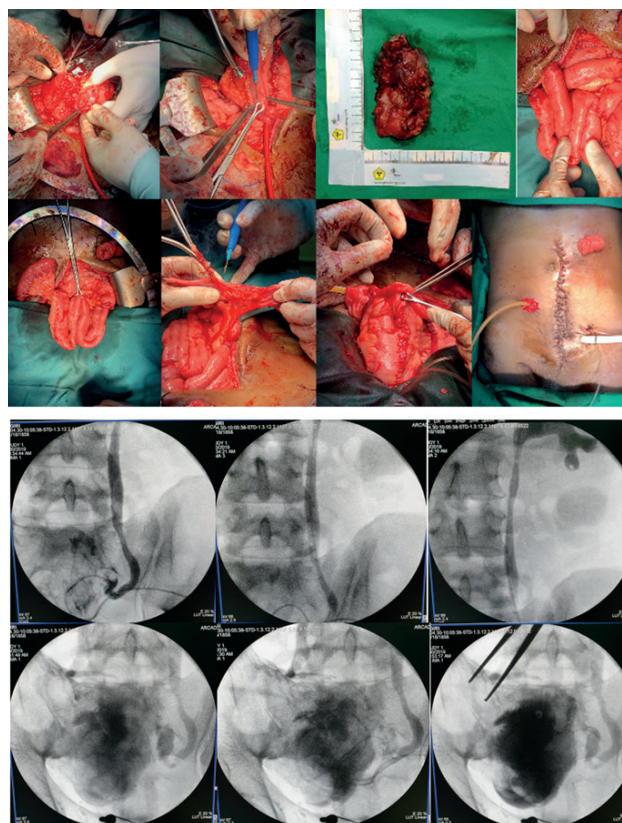


Figure 4. Cystoprostatectomy and Continent Cutaneostomy Ileal Neobladder Procedure Intra Operative and Post Operative. Followed by Cystographic and Splintographic procedures in patients.

REFERENCES

1. Doiron RC, Rourke KF. An overview of urethral injury. Canadian Urological Association Journal. 2019 Jun;13(6 Suppl4):S61.
2. Horiguchi A. Management of male pelvic fracture urethral injuries: Review and current topics. International Journal of Urology. 2019 Jun;26(6):596-607.
3. Joshi PM, Desai D, Kulkarni SB. Bulbar urethral necrosis. Textbook of male genitourethral reconstruction. 2020:345-51.
4. Satyagraha P, Alluza HHD, Indradiputra IMU, Purnomo AF, Nurhadi P, Anita KW, Yueniwati Y, Permatasari HK, Purnomo BB. TGF-B1 Effects on Total Collagen of the New Zealand Rabbit's Urethral Wall (*Oryctolagus cuniculus*) in Animal Models of Urethral Stricture. Medical Archives. 2023 Jun; 77(3):189-193. Doi: 10.5455/medarh.2023.77.189-193.
5. Kulkarni SB, Surana S, Desai DJ, Orabi H, Iyer S, Kulkarni J, Dumawat A, Joshi PM. Management of complex and redo cases of pelvic fracture urethral injuries. Asian Journal of Urology. 2018 Apr 1;5(2):107-17.
6. Kulkarni SB, Joshi PM, Hunter C, Surana S, Shahrour W, Al-hajeri F. Complex posterior urethral injury. Arab journal of urology. 2015 Mar 1;13(1):43-52.
7. Abol-Enein H, Salem M, Mesbah A, Abdel-Latif M, Kamal M, Shabaan A, Ghoneim M. Continent cutaneous ileal pouch using the serous lined extramural valves. The Mansoura experience in more than 100 patients. The Journal of urology. 2004 Aug;172(2):588-91.