

Dilatation and curettage of urinary bladder: A rarity

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Abstract

Twenty-eight-year-old female while undergoing a medical termination of pregnancy (MTP) encounter complete urethral loss and massive bladder curettage. After resuscitation, she developed continuous urinary leakage followed by progressive decline in urine output. Case is highlighted here because of the massive vesico-urethral trauma because of MTP, leading to permanent urinary diversion.

Key Words: Massive bladder curettage, obstetric trauma, permanent urinary diversion.

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INTRODUCTION

Unsafe abortion constitutes a major threat to the health and lives of women. In India, safe services are not available to all women. Literature revealed that out of all illegal abortions in the world, 13% occurs in India.^[1] Perforation of uterus, injury to the bladder and bowel, cervical tear and extension of pre-existing infection are well known complications during MTP but complete urethral loss and massive bladder curettage, leading to permanent urinary diversion has not yet been reported in the literature to the best of our knowledge.

CASE REPORT

Twenty-eight-year-old female, G4 P3 0 1 3, presented with a progressive decline in urine output for one

month, fever, nausea and vomiting for two weeks. Detailed questionnaire revealed that she underwent medical termination of pregnancy by dilatation and curettage by quack, three months ago followed by profuse urethro-vaginal bleeding, urinary ascites and shock for which she was managed conservatively with parenteral fluid, blood component therapy, per cutaneous abdominal tube drainage in a local nursing home. After recovery from shock, the patient noticed a continuous leakage of urine per vaginam for two months followed by progressive decline in urine output for which she consulted various nursing homes with no relief and then she was referred to us. Since first surgery was done by untrained para-medical person, details of which was not available. Available records and frequent questionnaire from attendants could reveal that she had incurred massive vesico-urethral trauma during MTP.

On examination, the patient was pale, no pedal edema. Bilateral kidneys were palpable with mild tenderness and the bladder was not palpable. Locally, only vaginal opening with scarred area at the site of urethral orifice seen, anterior vaginal wall was lacerated. Cystoscopy, even with pediatric scope was not feasible.

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Her hemoglobin was 7.2 gm%, TLC-8800/cmm, P67%, L27%, M4% E2%, blood sugar-84 mg%, blood urea-108 mg%, serum creatine-3.9 mg%, serum Na-134 mEq/l and K-5.8 mEq/l. USG-abdomen showed bilateral kidneys enlarged with gross hydronephrosis and both ureters dilated till lower end and a small fibrotic bladder. Plain X-ray of KUB Kidney, Ureter, Bladder region and Electrocardiogram showed no abnormality. Bilateral Percutaneous nephrostomy (PCN) were done under local anesthesia. Urine from bilateral PCN was cloudy, sent for culture sensitivity and the patient was put on antibiotic accordingly. When PCN urine culture report revealed no growth, 24 hour urine creatinine clearance from right kidney was 42 mg/ml/minute and from left kidney was 49 mg/ml/minute. After improving the general condition of the patient and when serum creatinine had returned to 1.2 mg%, bilateral antegrade pyelogram was done which showed the blind ending of ureters at lower end and no contrast in the bladder. Repeat sonography of KUB region showed that right kidney measures 10.2 × 4.5 cm in size and parenchymal thickness- 14 mm while left kidney measures 10.5 × 4.8 cm and parenchymal thickness- 15 mm. Both kidneys showed normal cortico-medullary differentiation. Moreover, there was good creatinine clearance from both kidneys, so intravenous urography IVU was omitted. Since there was no urethral opening, only scarring was present and further, bladder was a fibrotic remnant and non distensible on sonography, so voiding cystourethrography VCUG was not feasible. The patient was counselled for urinary diversion. She was neither willing to accept any kind of stoma, nor willing to perform clean intermittent catheterization CIC. She was planned for MAINZ II pouch. Pre-operatively, colonoscopy was done to exclude any bowel disease. She was given 300 cc saline enema to check for integrity of anal sphincter and one day prior to surgery, she received poly-ethylene glycol lavage. Under general anesthesia, she received single dose third generation cephalosporin just before induction and was explored through infraumbilical midline approach. Intra-operatively, both ureters were dilated and a fibrotic remnant of the bladder was present and anterior wall uterus was partially injured [Figure 1]. After identifying the rectosigmoid junction, colon was folded on itself, tagged with stay suture, detubularized by making inverted U-shaped incision (20 cm long) along antimesenteric border using cutting diathermy and posterior wall of the pouch was formed by closing in two layers. After making an incision in posterior peritoneum, right ureter was mobilized almost up to its midpoint. Left ureter was mobilized by incising along the line ofoldt. Both ureters were reimplanted on posterior wall lateral to midline, via a 4 cm long



Figure 1: Dilated ureters and injury to anterior wall of uterus.

submucosal tunnel using 5-0 Vicryl suture and were anchored on the posterior wall of the pouch. Both ureters were stented over 10F infant feeding tubes and brought out through anus by side of 30F flatus tube. After closing anterior walls of reservoir, pouch was fixed to periosteum of sacral promontory. Abdominal tube drain was inserted in pelvis. Flatus tube and infant feeding tubes were sutured to perianal skin. Post-op period remained uneventful. Abdominal tube drain and flatus tubes were removed on 4th post-op day. Infant feeding tubes were removed on 10th post-op day. Initially, she used to pass urine every 2-4 h, gradually day time frequency improved and she developed no nocturnal incontinence. At 3-year follow-up, serum electrolytes are normal and USG-KUB showed no dilatation of upper tract.

DISCUSSION

Bladder injury can occur from blunt and penetrating trauma, foreign body, pelvic surgery and obstetric trauma. Loss of bladder tissue from pelvic ischemia during obstructed labor is well known. Predisposing factors for obstetric trauma includes distended bladder, cephalopelvic disproportion, dystocia and improper use of forceps.

In our case, probable mechanism of injury is that untrained person, while doing MTP, entered through urethra, dilated it, curettage whole of the urethra, bladder and then injured partially anterior wall of uterus. Once she recovered from shock, she noticed urinary leakage, possibly because of urethra-vaginal fistulous communication.

At the time of initial massive insult to bladder, there was damage to bilateral ureteral orifice. Progressively, patient developed bilateral ureteral stricture. In due course of time, because of bilateral

ureteral obstruction, she developed uremic symptoms, bilateral hydronephrosis and raised serum creatinine. Progressive decline in urine output led to scarring and subsequent spontaneous closure of urethrovaginal fistula. Iatrogenic urethral trauma is not rare but vesico-urethral trauma after D and C is a rare condition. Research from PubMed did not reveal similar kind of complication. To the best of our knowledge, this kind of grave complication has never been reported in the literature.

Management of such a case is really a urological challenge. Different options include non continent cutaneous urinary diversion, continent cutaneous urinary diversion, ureterosigmoidostomy and its variant like sigma pouch (Mainz II). Each technique has its own advantages and disadvantages. Ileal conduit has the advantages of being simpler to perform and lowest complication but disadvantages of urostomy bag lifelong and added cost. Continent catheterizable stoma has its inherent complications and needs regular CIC.

Traditional operation for dealing with an irreparable bladder loss has usually been uretero-sigmoidostomy. Two most troublesome reported complications of uretero-sigmoidostomy are incontinence and pyelonephritis because of high rectal pressure (can reach in excess of 200 cm of water). Before contemplating ureterosigmoidostomy, it is essential to have normal anal sphincter control (can be assessed by giving 300 cc saline enema as a continence test). Both mechanical and antibiotic bowel preparation prior to surgery are essential components. The classic ureterosigmoidostomy, although superior to ileal conduit in longevity and appearance, does not allow for low pressure storage of urine.

Many of the disadvantages of classical ureterosigmoidostomy can be overcome by Mainz II pouch in which anterior colon is opened 12 cm distal and proximal to rectosigmoid junction, and a side-to-side anastomosis is made. Detubularization of bowel reduces force of colonic contractions and creates a low pressure system that does not predispose patients to development of hydronephrosis. Fixation of pouch to sacral promontory and the straight path of the ureter will prevent ureteral kinking. Ureters are mobilized bilaterally and transplanted into colon

through a 4-5 cm submucosal tunnel on each side. Apart from continuing need to monitor such patients for development of hyperchloremic metabolic acidosis and possibility of malignant polyps at the uretero-colonic implantation site, patients undergoing Mainz II procedure usually do well, and almost all have socially acceptable urinary continence and improved body image compared to patients undergoing urinary diversion using an ileal-conduit.

Main advantage of Mainz II pouch seems to be a significant decrease in mean and peak bowel contraction pressure.^[2] After ureterosigmoidostomy reported daytime continence ranges from 65 to 95% and night time continence from 88 to 95%, whereas the continence rates for Mainz II pouch are 98 to 100% which is undoubtedly due to low intracolonic pressure.^[3]

Long-term complications of Mainz II pouch are not known. Biochemical screening should include creatinine, urea, full electrolytes and acid-base studies of blood - monthly for the first year after surgery, thereafter twice a year for 5 years. Ultrasound of upper tract should be performed 6 monthly. Risk of carcinoma at the ureteral intestinal anastomosis is 5-13% during a 10-year period.^[4,5] Hence, close monitoring of pouch by colonoscopy, especially after first 5 years should be done.

The optimal technique in such patients remains to be determined; however, it is clear that salvage therapy of this type will continue to have a place in the management of such patients.

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