



MULTIPLE VESICLE CALCULI RESULTING IN INCARCERATED PROCIDENTIA

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(ABSTRACT) **Background:** Complete prolapse of the uterus creates an hourglass deformity of the bladder and results in compression of lower ureters. Long-standing prolapse with chronic bladder infection can result in formation of bladder stones. These may result in large and multiple bladder calculi producing acute incarceration and obstructive uropathy. The cause is urinary stasis or altering voiding dynamics. A total of 22 case reports were found in English literature. Timely management of prolapse can reduce the morbidity and improve the outcomes. **Purpose of Study:** To report an extremely rare case of multiple bladder stones in a patient of irreducible fourth degree urogenital prolapse. **Case History:** A 70 years old woman presented with complains of something coming out of vulva since 10 years. She had local pain, increased urinary frequency and inability to hold urine for a long time and incomplete evacuation, painful urination. OH - P3 L1 D2. O/E - Cervix was lying outside vulva, vaginal mucosa parchment like, scaly & oedematous, big cystocele, rectocele & enterocele present. Crepitations present on palpating anteriorly, multiple stone could be appreciated inside cystocele, prolapse was irreducible. Preoperative X-ray of lower pelvis & upper thighs suggestive of vesicle calculi outside pelvis in prolapsed bladder. **Management:** Multidisciplinary approach taken with urosurgeon. Under anaesthesia the prolapse could be reduced after considerable efforts. Cystoscopy showed multiple bladder stones with gravel. Open cystolithotomy performed. 47 Stones removed from bladder cavity. Total abdominal hysterectomy with B/L salpingo-oophorectomy & vault suspension followed by anterior colporrhaphy, Mc calls culdoplasty and vault suspension with high uterosacral suspension and vault closure via vaginal route & posterior colpoperniorrhaphy was performed. Patient recovered completely.

KEYWORDS : Procidentia, Incarcerated, Vesicle Calculi, Prolapse Uterus

BACKGROUND:

Genitourinary prolapse is a common entity in women rarely needing emergency intervention. The incidence of pelvic organ prolapse (POP) surgery ranges from 1.5 to 1.8 per 1000 women years and peaks in women aged 60-69(1). The prolapsing uterus descends and creates a downward traction on the uterine arteries that drags the lower ureters & bladder trigone out of the pelvis(2).

Complete prolapse of the uterus also creates an hourglass deformity of the bladder and results in compression of lower ureters between the medial borders of genital hiatus and the uterus. Long-standing prolapse with chronic bladder infection can result in formation of bladder stones. These may result in large and multiple bladder calculi producing acute incarceration and obstructive uropathy. Formation of bladder stones due to massive uterovaginal prolapse can complicate the picture. The stones stiffen the bladder and vaginal walls, making an otherwise manageable genital prolapse case into one that is irreducible and painful(3). The subsequent chronic end-organ effects, such as hydronephrosis, urinary obstruction and acute urinary tract infection, make this challenging case more urgent, and requires careful, multidisciplinary planning. A total of 22 case reports were found in English literature (4) and other few cases elsewhere. Timely management of prolapse can reduce the morbidity and improve the outcomes.

AIMS AND OBJECTIVE:

To report an extremely rare case of multiple bladder stones in a patient of irreducible procidentia.

Case History:

A 70 years old postmenopausal woman presented with complains of something coming out of vagina since 10 years. The patient's complains were more related to pain in the perineal area along with increased urinary frequency and inability to hold urine for a long time and incomplete evacuation. Due to these complaints, she was very reluctant for optimal water intake. She used to go for urination around

10-15 times in the day time and approximately 2-3 times during nighttime. These complaints had a profound effect on her quality of life. There were no complaints of stress urinary incontinence (SUI). She was multiparous (P3 L1). Her general condition was average. Abdomen was soft, no lump, no tenderness. On local examination, cervix was lying outside vulva, for around 6 cm, vaginal mucosa was parchment like, scaly & oedematous, huge cystocele, enterocele and rectocele present, external os was almost obliterated due to oedema. Crepitations present on palpating anteriorly, multiple stone could be appreciated inside cystocele, uterus size not made out, prolapse was irreducible due to stones & oedema, tenderness present due to chronic condition (Fig 1).

Patient could not be assessed for occult SUI. As per POP -Q classification it was Stage IV. All baseline investigations were sent. Her hemoglobin was 9.7g/dl, R/M- 10-15 pus/ HPF, Urine culture showed no growth, renal function and rest blood investigations were WNL.

Preoperative X-ray of lower pelvis & upper thighs suggestive of vesicle calculi outside pelvis in prolapsed bladder (Fig. 2). On USG the same findings were corroborated along a post voidal urine of 180 cc. CECT KUB with urogram was suggestive of cystocele, multiple vesicle calculi, bilateral moderate hydronephrosis, with prolapsed uterus.

The infected, parchment like, scaly dried vaginal mucosa was a challenge for the surgery. The oedema subsided after MGSO4 application for two weeks, still it was irreducible (Fig 3). Multidisciplinary approach with senior urosurgeon was chosen. She was taken for surgery after preoperative work-up. Peroperatively, cystoscopy was performed by urosurgeon which showed multiple calculi of varying sizes along with sand like stone particles after reduction of prolapse under anesthesia. The plan further was to insert DJ stents in both the ureters, however only left ureteric stenting was possible, right ureteric stenting could not be performed as it was

obscured by multiple stones Abdominal cystolithotomy was performed because of better delineation of bladder and ureteric anatomy via abdominal route and less chances of fistula formation and ureteric injury. Cystotomy was performed with midline vertical incision, stones ranging from 2 mm- 40 mm with gravel removed from bladder cavity(Fig. 4). Bladder closure done in two layers following which total abdominal hysterectomy with bilateral salingo ophorectomy done followed by abdomen closure. After this anterior colporrhaphy, Mc calls culdoplasty and vault suspension with high uterosacral suspension and vault closure via vaginal route & posterior colpoperniorrhaphy was performed.

Patient stood the procedure well with average blood loss. Postoperative course was uneventful. Patient was discharged on day 10 with silicon Foley's catheter in situ along with catheter care instructions. Self retaining Foley's catheter and DJ stent was removed on day 21. She had normal bladder function, there was no SUI. She could not be assessed for occult SUI, due to presence of irreducibility.

DISCUSSION:

Uterovaginal prolapse is very commonly seen in gynaecological practice. Long standing pelvic organ prolapse causing urinary stasis, urethral kinking coupled with chronic infection are the predisposing conditions for stone formation. Procidentia with multiple bladder calculi causing incarceration is extremely rare, making management complex with perioperative challenges. Whether to perform hysterectomy and cystolithotomy as one stage or two stage procedure can be a common dilemma. The choice should be made according to the clinical scenario.

In this case hysterectomy by abdominal route was a better option. Although initially it appeared difficult because it was not possible to reduce the uterus. Hence preoperatively, the plan was to proceed by vaginal route, but under anaesthesia it could be reduced after some efforts. By abdominal route, there is better delineation of bladder and ureteric anatomy and less chances of fistula formation and ureteric injury. Due to abdominal approach, there was less handling of vaginal mucosa, which was in poor condition.

Anterior colporrhaphy, Mc calls culdoplasty and vault suspension with high uterosacral suspension and vault closure done via vaginal route followed by posterior colpoperniorrhaphy. Apical suspension was performed vaginally because anterior colporrhaphy & posterior colpoperniorrhaphy which was done vaginally, could have disturbed the apical suspension done abdominally.

It is prudent to improve the health of the vaginal mucosa preoperatively by antibiotics & local dressing with MgSO₄, to minimize problems due to fragility of vaginal tissue, difficulty in identifying required planes, intraoperative oozing & postoperative healing.

Cases are reported where bladder stone was not considered in the differential diagnoses due to the rarity of the conditions. Neither it was picked up in CT scan as bladder was not seen out of the lower limits of the scanned area. The diagnosis was made only intraoperatively(3).

Vesical calculus may be removed through a vaginal or suprapubic incision or by extracorporeal shockwave lithotripsy. Open cystolithotomy allows easier removal of the stones, minimizes subsequent vesicovaginal fistula formation and less associated morbidity(5). As per the literature review, vaginal hysterectomy and transvaginal cystolithotomy has been performed in 2 cases. The probability of fistula formation after vaginal approach cystolithotomy was of some concern to surgeons, leading them to avoid the vaginal approach. The majority were done transabdominally with open cystolithotomy. One researcher reported transurethral cystolithotomy. The transvaginal cystotomy is the most minimally invasive method, but it has the additional risk of ureteral injury and difficulty in removing stones. Transabdominal cystolithotomy poses less theoretical risk of ureteral injury or fistula formation after the repair, but wound healing may be compromised due to exposure to the chronically infected bladder(4). Transvaginal cystolithotomy, uterus-sparing Lefort colpocleisis is also reported for such cases(6).

Rajasri et al report that in a similar case, they applied packs of Magnesium Sulphate along with Glycerin for a week. However, the prolapse could not be reduced. Then ordinary table sugar along with

salt in sterile gauze was applied to the prolapse twice a day. After 5 days of application, the prolapse was reduced (7).

CONCLUSION:

A high index of suspicion of bladder calculi with meticulous clinical examination can make a diagnosis even before imaging. The fact that bladder stones were identified in other cases with uterine prolapse impromptu at the operating table was certainly due to lack of clinical judgment. This case reemphasizes the value of clinical diagnosis vis a vis imaging modalities. A plain x-ray including pelvis & upper thighs can easily clinch the diagnosis.

A well planned multidisciplinary approach and transabdominal cystolithotomy with hysterectomy with repairs is a reasonable approach towards multiple vesicle calculi with incarcerated procidentia.



Fig 1: Incarcerated Prolapsed Uterus



Fig 2 : Pre operative x ray - Of Lower pelvis & upper thighs suggestive of vesicle calculi outside pelvis in prolapsed bladder



Fig 3 : Oedema reduced after sumag dressing for two weeks



Fig 4 : Almost 47 calculi removed from bladder, ranging from 2 – 40 mm & gravel

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