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Case Series: Multiple Vesicle Calculi in Genitourinary Prolapse

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ABSTRACT

Genitourinary prolapse is one of the major entity in urogynecology. It massively affects quality of life. Prolapse occurring with concomitant multiple vesicle calculi is not a very common occurrence. Only a few case reports have been reported in literature so far. 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. In this case series we aim to report three cases of multiple vesicle calculi in genitourinary prolapse. In first case there are two bladder stones in a postmenopausal patient. Second case describes multiple vesicle calculi in an incarcerated prolapse. In third case, there were multiple vesicle calculi in a vault prolapse patient.

INTRODUCTION

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). Genitourinary prolapse is one of the major entity in urogyencology. It massively affects quality of life. Prolapse occurring with concomitant mutlipe vesicle calculi is not a very common occurrence. Only a few case reports have been reported in literature so far. A total of 22 case reports were found in English literature (3) and other few cases elsewhere.

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(4). 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. Timely management of prolapse can reduce the morbidity and improve the outcomes.

In this case series we aim to report three cases of multiple vesicle calculi in genitourinary prolapse. In first case there are two bladder stones in a postmenopausal patient. Second case describes multiple vesicle calculi in an incarcerated prolapse. In third case, there were multiple vesicle calculi in a vault prolapse patient.

CASE 1:

A 62 year woman reported to OPD with complains of something coming out of vulva since 8 years. She was P4 L4, all deliveries were vaginal. She was postmenopausal since 10 years, with no history of any medical disorder.

General examination was within normal limit. On local examination– cervix was lying outside vulva, no decubitus ulcer, third degree cystocoele was present along with enterocoele. On palpation there were two seperate hard structure/ lump/mass palpable

inside the cystocoele with smooth margins, each of 2 cms in size, freely mobile, Uterus retroverted, normal size, fornices free. Clinical impression – Third degree UV prolapse with cystocoele, enterocele & bladder stone. Prolapse was reducible.
Her plain X ray of pelvis in prolapsed state confirmed two bladder stone.
Open cystolithotomy done and two stones removed. Her total abdominal hysterectomy with bilateral salingoopherectomy was done followed by abdomen closure. After this anterior colporrhaphy, culdoplasty and vault suspension with uterosacral suspension and vault closure was done via vaginal route. Suprapubic catheter was placed for 21 days and removed. She stood the procedure well.

Figure 1a: Picture showing pre-operative X- ray pelvis of the patient

Figure 1b: Picture showing two bladder stone retrieved in surgery

CASE 2:

A 70 years old postmenopausal woman presented with complains of something coming out of vagina since 10 years. with pain in the perineal area, increased urinary frequency and inability to hold urine for a long time with incomplete evacuation. no complaints of stress urinary incontinence(SUI). She was P3 L3. 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 cystocoele, enterocoele and rectocoele present, external os was almost obliterated due to oedema (Figure 2a). Crepitations present on palpating anteriorly, multiple stone could be appreciated inside cystocoele, uterus size not made out, prolapse was irreducible due to stones & oedema, tenderness present due to chronic condition.
All baseline investigations were sent. Her urine R/M- 10-15 pus/ HPF and culture was sterile. Preoperative X-ray of lower pelvis & upper thighs was suggestive of vesicle calculi outside pelvis in prolapsed bladder(Fig. 2b). On USG the same findings were corroborated along a post voidal urine of 180 cc.

The infected, parchment like, scaly dried vaginal mucosa was a challenge for the surgery. The oedema subsided after magnesium sulfate application for two weeks, still it was irreducible. She was taken for surgery Peroperatively, cystoscopy was performed by urosurgeon, after reduction of prolapse under anesthesia, which showed multiple calculi of varying sizes along with sand like stone particles (Figure 2c. Cystotomy was performed with midline vertical incision, stones ranging from 2 mm- 40 mm

with gravel removed from bladder cavity (Figure 2d). Bladder closure done in two layers following which total abdominal hysterectomy with bilateral salingoopherectomy 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 colpoperniorrhapy 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.

Figure 2a: Prolapse uterus

Figure 2b: X ray pelvis of patient showing multiple stones in a prolapsed state

Figure 2c: Cystoscopic view of Baldder calculi

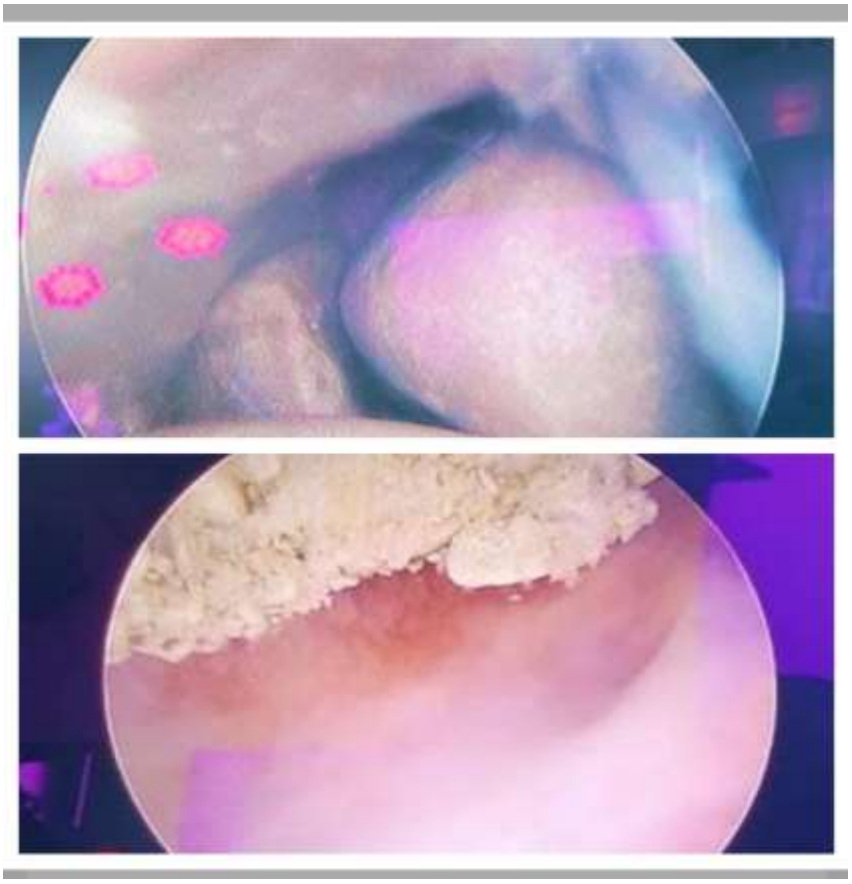

Figure 2d: Vesicle calculi specimen retrieved

CASE 3:

Patient was ,83 years female, P5 L5, H/O abdominal hysterectomy 28 years back, with cystocoele and third degree vault prolapse She was complaining something coming out of vulva since 15 years, pain in abdomen, burning & increased frequency of micturition since 5 months, Known case of hypothyroidism, no other medical disorder.

O/E – vault was lying outside vulva, no decubitus ulcer, cystocoele, (no rectocoele. On palpation there were crepitations all over the cystocoele with smooth margins, keratinization on ant surface, vaginal walls oedematous & infected, irreducible prolapse.

Clinical impression – Irreducible third degree vault prolapse with cystocoele & multiple bladder stones. Prolapse was irreducible due to oedema & infection.

Daily vault dressing done with magnesium sulfate ointment & betadine lotion, antibiotics given after which the oedema subsided & vault was reducible.

X ray pelvis with upper half of thighs showed multiple small vesicle calculi in the cystocoele(Figure 3a). Patient was taken up for surgery after preop antibiotic for urinary tract infection and optimizing the patient. Preopereative cytoscopy was perfomed which revealed multiple blackish calculi of varying size, the biggest one was of pebble size and smaller one of size of grain.

Open cystolithotomy with suprapubic catheter insertion and vault suspension done through sacrocolpopexy. Patient stood procedure well with huge improvement in her quality of life score.

Figure 3a - X ray pelvis of patient showing multiple stones in vault prolapse

Figure 3b - Cystoscopic view of Baldder calculi

Figure 3c- Vesicle calculi specimen retrieved

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 first two cases, 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. Also the vault suspension could be done in a more efficient way.

Anterior colporrhaphy, Mc calls culdoplasty and vault suspension with high uterosacral suspension and vault closure was done via vaginal route followed by posterior colpoperniorrhapy. Apical suspension was performed vaginally because anterior colporrhaphy & posterior colpoperniorrhapy 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(4). Hence it utmost important to get an imaging with pelvis 'inclusive of upper thighs' where bladder calculus with prolapsed uterus is clinically suspected.

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(3). 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 with multiple vesicle calculi with incarcerated procidentia.

COMPLIANCE WITH ETHICAL REQUIREMENTS

Informed Consent was obtained from patients

CONFLICTS OF INTEREST: There is no conflict of interest amongst authors

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