Absence of Ejaculate a Manifestation of Urethral and Bladder Calculi Associated with a Supra-Pubic Catheter: Case Report and Review of the Literature

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Article ID: WMC002843
Article Type: Case Report
Submitted on: 01-Jan-2012, 08:41:09 PM GMT    Published on: 02-Jan-2012, 09:29:57 AM GMT
Article URL: http://www.webmedcentral.com/article_view/2843
Subject Categories: UROLOGY
Keywords: Absence, Ejaculate, Supra-Pubic, Catheter, Spina Bifida, X-ray, Ultra-Sound Scan, Cystolitholapaxy, Nephroscope, Lithoclast.

How to cite the article: Venyo A. Absence of Ejaculate a Manifestation of Urethral and Bladder Calculi Associated with a Supra-Pubic Catheter: Case Report and Review of the Literature. WebmedCentral UROLOGY 2012;3(1):WMC002843

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Source(s) of Funding: None

Competing Interests: None
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Abstract

Background: Spontaneous / Non surgical induced diminution of the volume of ejaculate leading to complete absence of /or retrograde ejaculation can be distressing to both the male patient and his partner.

Aims: To report the presentation, investigation and management of a new onset of absence of ejaculate in a patient with a long-term supra-pubic catheter To review the literature on “absence of ejaculate” and complications of supra-pubic cystostomy

Case Report: A 48-years-old man presented with a history of gradual reduction in the volume of his ejaculate culminating in complete absence of his ejaculate over a period of 2 years. He also had episodes of bleeding per urethram during coitus. He was born with spina bifida and has had neurogenic bladder with incontinence through- out his life and because of this he had had a supra-pubic catheter for 5 years which kept him dry.

Clinical examination revealed a palpable lump on the ventral aspect of his penis near the tip of his penis. He had plain X-ray of abdomen and pelvis which revealed 4 calculi in the urinary bladder and calculi in the prostatic urethra. Ultrasound scan of renal tract and pelvis revealed echogenic foci which was reported as possibly within the base of the urinary bladder. Flexible cystoscopy was attempted and this revealed a calculus which was stuck in the urethra.

Rigid cystoscopy was done and the distal and proximal urethral calculi were pushed into the bladder. With aid of a nephroscope, lithoclast lithotripsy and retrieval of all the calculi were done.

His ejaculation returned to normal and the bleeding per urethram stopped.

Conclusions: This case should remind all practitioners of the fact that a new onset of absence of ejaculate in a patient with a long-term supra-pubic catheter may be the first symptom of calculi in the urethra and bladder.

Perhaps, once every six months or at least once a year ultrasound scan of the renal tract should be performed electively in order to detect the presence of vesical calculi complicating long-term supra-pubic catheter before symptoms develop.

Introduction

About 25% of patients with long-term supra-pubic catheter develop bladder calculi and urinary leakage through the urethra occurs in 10% of patients with long-term supra-pubic catheter. A case of complete absence of ejaculate related to the use of long-term supra-pubic catheter and stones in the urinary bladder and urethra is reported with a review of the literature.

Case Report

A 48-years-old man was referred to the urology unit because he had been bleeding intermittently per urethral during coital activities. His main complaint was that of minimal ejaculation bordering on dry ejaculation for 2 years in view of this he asked his General Practitioner to refer him for investigation in order to get an explanation for absence of ejaculate during sex.

He was born with spina bifida and he has had neurogenic bladder through-out his life. Up to the age of 43 years he was using incontinent pads and he had urinary tract infections on and off up to the age of 43 years. At the age of 43 years he was referred to a urologist because he was fed up with his problem of incontinence and the fact that he had to use incontinence pads all the time. He had a general and abdominal examination at that time and these were essentially normal. He had a number of investigations which were reported as follows:

- Full blood count – normal
- Serum urea and electrolytes – normal
- Bone profile – normal
- Liver function test – normal
- Urine analysis – normal
- Urine microscopy – normal (nothing significant)
- Urine culture – normal (no growth)
- Intravenous urography – essentially normal with normal urinary bladder and both upper renal tracts were normal with no hydronephrosis but only minimal dilatation of the left renal pelvis.

The options of management of his neurogenic bladder were discussed including: long-term urethral catheter; long-term supra-pubic catheter; and an artificial
After considering his management options he opted for a long-term supra-pubic catheter. A supra-pubic catheter was inserted which was initially changed in the hospital and subsequently the responsibility of the supra-pubic catheter changes was transferred to the district and he was discharged to be referred back in the event of any subsequent problems.

Between the ages of 45 and 46 years he was seen by the rehabilitative medicine consultant because of erectile dysfunction, back pain as well as weakness of his left lower limb. He had a MRI scan lumbo-sacral spine which did not show any evidence of cord compression, although there was disc herniation at L4/L5 level which was just catching the L5 root on the left side. The scan also showed degenerative changes of the vertebral column in addition to the original spina bifida. He received physiotherapy and was given analgesia (tramadol 50 mg qds). With regard to erectile dysfunction he initially took sildenafil which was effective but this was associated with severe indigestion and heartburn therefore his medication was changed to Cialis 20 mgs which did not give him any significant side effects.

He was seen again by a urologist when he complained of dry ejaculation and was told that supra-pubic catheter would not cause dry ejaculation.

At the age of 46 years he was referred back to the urologist because he felt something in his urethra and he was listed for flexible cystoscopy to rule out a urethral stricture or bladder outlet obstruction but he did not turn up for the procedure because he did not want the procedure.

Between the ages of 46 years and 48 years he had noticed that the volume of his ejaculates had gradually reduced during sexual activities to the point of dry ejaculate. He was referred to another urologist (at the age of 48 years; 4 years after insertion of his initial supra-pubic catheter insertion). His general examination was unremarkable. His supra-pubic catheter site looked normal. Examination of his penis revealed lump in the subcutaneous region on the ventral aspect of the penis in line with the urethra. It was felt that this lump could be a calcified foreign body. In view of this he was listed to have flexible cystoscopy to confirm the nature of the foreign body which after confirmation would be removed under general anaesthesia. A number of investigations were also requested and these were reported as follows:

- **Full blood count** – normal
- **Serum Urea and electrolytes** – normal
- **Urine culture and sensitivity** – normal
- **Plain abdominal X-ray and X-ray of pelvis** (see illustrations 1 and 2) - showed 4 calculi in the urinary bladder; calculi in the area of the prostatic urethra/proximal urethra.

A flexible cystoscopy was attempted but the scope could not be passed beyond a stone which was stuck in the distal urethra. He therefore under-went cystoscopy and cystolitholapaxy under general anaesthesia. The findings were as follows: There was an impacted stone in the anterior urethra which was pushed back into the urinary bladder. Cystoscopy showed multiple large bladder stones. Using a nephroscope and Lithoclast master all the stones were completely fragmented; and all the fragments were washed out. A urethral- catheter was left in situ for overnight drainage and this was removed prior to his discharge on the 1st post-operative day. His supra-pubic catheter was also changed.

His post-operative recovery was unremarkable; there was no further bleeding per-urethram during sex and his ejaculation returned to normal.

**Discussion**

Calculi in the urinary bladder usually present as lower urinary tract symptoms, haematuria, urinary tract infection or retention of urine.

Absence of ejaculation may be due either to retrograde ejaculation or lack of emission (no expulsion of semen through the vas deferens into the posterior urethra [1]. Vascular or neurogenic abnormalities, bladder neck surgery, drug therapy, or retroperitoneal surgery as well as rare cases like psychologic disturbances may account for absence of ejaculation [1].

Retrograde ejaculation is diagnosed if more than five to ten sperm per high power field are identified in the post-ejaculate urine specimen. [1]

It has been suggested that:

- Tran-sultrasonography should be performed to evaluate the seminal vesicles and ejaculatory ducts in cases of lack of emission in which a clear factor is not identified. [1]
- Ductal obstruction, chromosomal abnormalities, varicoceles, and idiopathic causes may account for azoospermia, [1]
- Ductal obstruction may occur at any level, from the ejaculatory duct to the vas deferens and epididymis as well as efferent ductules. This may be congenital (e.g. congenital absence of vas deferens) or acquired (e.g. vasectomy). Other causes of azoospermia include: gonadotrophic drugs (e.g. chemotherapy or
Adverse effects of radiotherapy. [1]
Absence of ejaculation may be caused by:
(1) Drugs;
(2) Surgery;
(3) Vascular;
(4) Occlusion;
(5) diabetes mellitus;
(6) Psychogenic disturbances.
The presence of vesical calculi varies from completely asymptomatic to symptoms of suprapubic pain; dysuria; lower urinary tract symptoms of intermittency, urinary frequency, hesitancy, nocturia; and retention of urine [2].
Parents of children with vesical calculi may notice priapism and occasional enuresis [3].
Other common signs of vesical calculi include: terminal gross haematuria, and sudden termination of voiding with some degree of associated pain referred to the tip of the penis, scrotum, perineum, back or hip. The discomfort may be dull or sharp and is often aggravated by sudden movements and exercise. Assuming a supine, prone, or lateral head-down position may alleviate the pain initiated by the stone impacting on to the bladder neck by causing it to roll back into the bladder.
Less specific signs of vesical calculi include: microscopic or gross haematuria, pyuria, bacteriuria, crystalluria, and urine cultures that demonstrate urea-splitting organisms.
Su and associates [4] suggested that a history of prior pelvic surgery should be sought in all patients, especially when synthetic materials were implanted. Urethral stones are commonly associated with urinary tract calculi and underlying diverticulum or urethral stricture [5].
Urethral calculi represent less than 1% of all urinary stone disease. Giant urethral calculi are extremely rare [6]. The majority of urethral calculi occur in males and rarely in females [7].
Depending upon the site of origin, urethral stones are classified as primary or migrating.
Primary urethral calculi are associated with urethral abnormalities such as:
Urethral stricture,
Urethral diverticulum,
And foreign body.
Secondary urethral calculi are more common than primary stones and have migrated from higher up in the urinary tract [8].
Urethral calculi are mainly composed of struvite, calcium phosphate, or calcium carbonate. Primary urethral stones do not cause acute symptoms, while migrant stones may present as acute urinary retention, dysuria, dribbling, or sometimes sepsis in the presence of infection [8].
Management of urethral calculi varies according to the site, size, and associated urethral disease. Retrograde manipulation into the urinary bladder followed by litholapaxy or lithotripsy is a suitable procedure for small urethral calculi. Anterior urethral calculi can be removed with instillation of 2% lignocaine, ventral meatotomy or urethroscopic method [9].
It has been suggested that Giant urethral calculi should be treated with open surgery [10].
In urethral stones associated with stricture, urethral stone retrieval removal and urethroplasty are preferable [11].
The treatment of choice for an impacted, large calculus in the bulbar urethra is perineal urethrotomy with urethroplasty [10].
The management of urological problems in patients with spina bifida can be challenging. Urological complications of spina bifida are often major a source morbidity for these patients [12].
Previous studies on suprapubic cystostomy in patients with neuropathic bladder reported accelerated renal deterioration and lower urinary tract complications, including stones, recurrent infections and blocked catheters. Hackler [13] reported that suprapubic cystostomy maintained for more than five years caused as much renal damage as the intraurethral catheter retained for more than twenty years. Therefore, Hackler recommended that in spinal cord injury patients, suprapubic cystostomy should be used only temporarily after urethral, ureteric or bladder surgery. In contrast, recent investigations in which patients were managed with anti-cholinergics, frequent catheter changes and bladder washing, demonstrated similar morbidity profiles to patients practicing clean intermittent catheterisation [14].
Literature on safety issues involved in long-term care of suprapubic cystostomy in spinal cord injury patients is rare. Review of 118 patients with neurogenic bladder managed with suprapubic cystostomy revealed that some complications occurred frequently [15]. Thirty of 118 patients (25%) developed bladder calculi and urinary leakage through the urethra was present in eleven patients (10%). A few rare and unusual complications of suprapubic cystostomy have been documented in the literature. Heterotopic bone formation was observed in the pubic region after suprapubic cystostomy and chronic urine leak [16]. Hourglass deformity of urinary bladder is another very unusual late complication of suprapubic cystostomy in persons with neuropathic bladder. Documented possible reasons for development of hourglass bladder in spinal cord injury patients include:
traction applied to dome of urinary bladder by Foley catheter.
balloon when suprapubic catheter is taped tightly to anterior abdominal wall for several months; un-coordinated contractions of detrusor muscle; Chronic cystitis leading to hypertrophy of bladder wall [17].

Dangle and associates [18] reported a patient, who developed a neurogenic bladder secondary to multiple sclerosis, and who was managed with a suprapubic catheter. The patient presented with migration of suprapubic catheter into left ureteric orifice, which resulted in left hydronephrosis and obstructive uropathy.

Some other reported complications associated with the use of supra-pubic catheter include:

- Urinary tract infection
- Stones in urinary bladder
- Renal calculi
- Haematuria

Neoplastic changes in the urinary bladder, at the site of cystostomy, or in the supra-pubic tract [19], [20]

Management of the urological problems associated with spina bifida can be difficult and may include the use of anticholinergic drugs, intermittent self catheterisation (ISC), insertion of supra-pubic catheter or surgical intervention to allow urinary diversion [21]. It has been suggested that increased fluid intake; weekly changes of indwelling catheters, if intermittent self catheterisation (ISC) is not possible and regular ultrasonic screening to pick up stone formation at an early stage, may help the burden of these problems [22], [23].

Vesico-cutaneous fistula secondary to bladder calculi are rare. Only 4 cases have been reported in the literature [24], [25], [26], [27].

Predisposing factors to bladder stone formation include:

- Bladder outflow obstruction
- Urinary stasis
- Recurrent urinary tract infection

Foreign bodies (for example long term supra-pubic catheter or long term urethral catheter in urinary bladder) [28]. (All of these may be observed with spina bifida patients).

It has been stated that good control of the predisposing factors to bladder calculus formation can dramatically reduce the risk of developing bladder calculi, but especially in cases where this is difficult, a high index of suspicion, regular urological review and timely ultrasound scan can prevent the development of both the bladder calculus and the complications [27].

Conclusions

This case should remind all practitioners of the fact that a new onset of absence of ejaculate in a patient with a long-term supra-pubic may be the first symptom of calculi in the urethra and bladder. Perhaps, once every six months or at least once a year ultrasound scan of the renal tract should be performed electively in order to detect the presence of vesical calculi complicating long-term supra-pubic catheter before symptoms develop.

References


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Acknowledgement

Acknowledgement to the patient who gave a clear history who has no objection to lessons learnt from his management being used anonymously to educate practitioners if it would help in the future management of other patients.
Illustrations

Illustration 1

Plain abdominal X-ray showing supra-pubic catheter in situ and four calculi in urinary bladder

Illustration 2

Plain X-ray of pelvis showing supra-pubic catheter in situ and four calculi in urinary bladder as well as calculi in prostatic (proximal urethra)
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