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# Giant Urethral Stone Successfully Removed Via Urethroscopy

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**Abstract** Presented is a case report of an impacted large urethral calculus. The stone was lodged in the prostatic urethra and was successfully removed endourologically with the assistance of an ultrasonic lithotriptor. We describe a practical and effective therapeutic approach to the treatment of impacted urethral calculi.

*Key Words* : Giant urethral calculi, Ultrasonic lithotriptor, Urethroscopy

The majority of urethral calculi in the male consist of stones expelled from the bladder into the urethra.[1] A stone's progress through the normal urethra may be arrested in the prostatic urethra (41.2%), the bulb (18.8%), the anterior portion of the perineal urethra (28.4%), or the fossa navicularis (11.3%).[2]

Recent advances in endourology have made the removal of stones utilizing the urethroscope possible.[1] The successful endourologic removal of a giant urethral stone is reported.

## Case Report

A 63-year-old man presented with a compliant of decreased urinary force and difficult urination. He had a past history of bladder rupture due to a traffic accident 30 years ago. Physical examination revealed a moderately enlarged prostate with a stony hard induration in the left lobe.

Prostatic tumor markers (PAP, PSA, and r-Sm) were within normal limits. A radiograph showed a shadow of thin calcification measuring 2.0×1.5 cm under the publs (Fig.1).

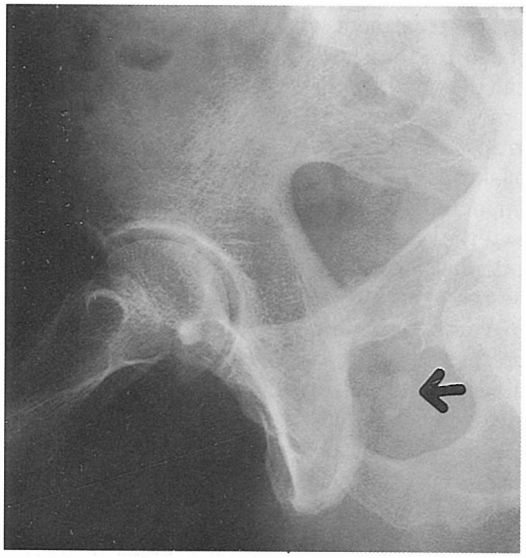

Fig. 1 Plain radiograph shows a calcified shadow (2.0×1.5 cm ) under the pubis, suggesting a urethral stone lodged in the prostatic urethra or a prostatic stone.

DIP revealed normal kidneys but the urinary bladder was hypertrophied. Retrograde urethrocystography (UCG) showed a urethral stone or a prostatic stone measuring 2.0×1.5 cm at the prostatic urethra (Fig.2). Urethroscopic evaluation (17 Fr.) disclosed an impacted urethral stone at the prostatic urethra; no urethral stricture was observed (Fig. 3).

Under epidural anesthesia, an ultrasonic lithotriptor was introduced through a 21 Fr. ureterorenoscope, and the urethral stone was crushed into several parts. Each fragment was removed with grasping foreceps. The stone could not be pushed back into the bladder to be crushed. A vasectomy was performed concomitantly to prevent the development of epididymitis. The procedure lasted 2 hours and 50 minitues. The postoperative course was uneventful. One week after the operation, the patient was dischanged. The analysis of the stone revealed mainly calcium phosphate and ammonium magnesium phosphate.

## Discussion

The treatment of urethral stones is influenced by the size, shape and position of the calculus and by the status of the urethra.[3] At times, a stone in the anterior urethra can be grapsed and removed by the forceps or stone basket.[4] When a large stone has been impacted for a long time in the urethra, an external urethrotomy may be required.[1] A calculus lodged in the fossa navicularis can be removed by meatotomy.

A urethral stone impacted in the prostatic urethra usually can be pushed back into bladder and then crushed. However, when the stone is large and fixed in the urethra, as in the case presented, it may be removed surgically via the prineal or surapubic route. External urethrotomy of the penile urethra has an associated risk of postoperative fistula formation.[1]

Transurethral ultrasonic lithotripsy with the ureterorenoscope was appiled for the urethral stone removal in our case. We consider this procedure to be a practical treatment of impacted urethral stones, especially in those patients who are poor-surgical risks.

There are two types of lithotriptor available at present. The first is the electronic lithotriptor, otherwise referred to as the " electro-hydraulic stone disintegrator." The second is the ultrasonic lithotriptor the electronic lithotriptor and the ultrasonic lithotriptor are both used in a similar manner, except that the ultrasonic lithotriptor must

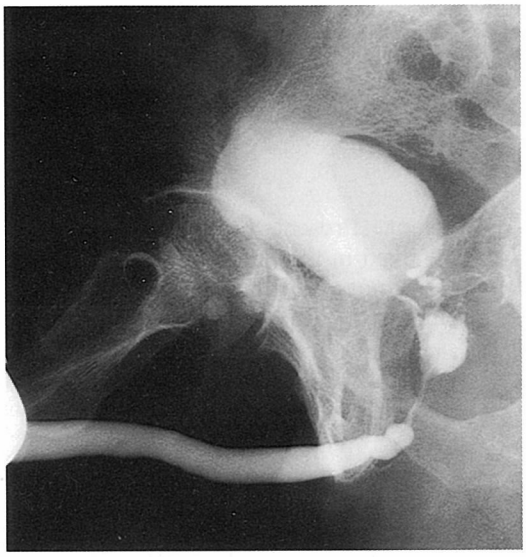

Fig. 2 Retrograde urethrocystogram shows a urethral stone or a prostatic stone without urethral stricture.

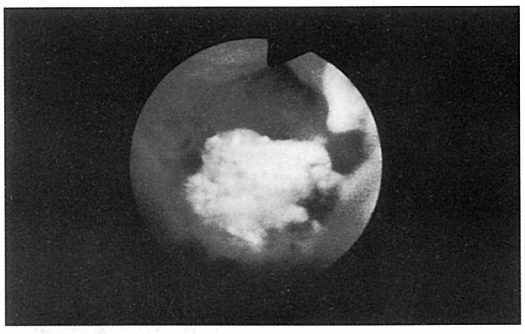

Fig. 3 Urethroscopy confirms an impacted urethral stone at the prostatic urethra.

be kept in contact with the stone to have any fragmenting effects. The electronic lithotriptor should be held approximately 1 mm away from the stone to be fractured. Also, the operator has to remember that the electronic lithotriptor can damage the urethral mucosa easily with a spark or stone fragmented. However the ultrasonic lithotriptor itself does not harm the urethral mucosa. For there reasons, the ultrasonic lithotriptor is the preferred device to be used for the treatment of urethral stones. Another advantage is that the ultrasound litrotriptor facilitates evacuation of the crushed stone fragments immediately following the break up of the stone, thus keeping the field clear for the operator. Our recent successful endoscopic removal of a giant stone impacted at the prostatic urethra supports the therapeutic utility of the ultrasonic lithotriptor for the nonivasive treatment of the impacted urethral stone.

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