

L. Wilson · A. B. Patel

## Renal colic during sexual intercourse: a unique presentation

Received: 3 June 2005 / Accepted: 12 January 2006 / Published online: 14 February 2006  
© Springer-Verlag 2006

**Abstract** The average lifetime risk of renal stones has been reported to be in the range of 5–21%, and the majority of patients have recurrent stones (Tiselius et al. in Eur Urol 40:362–371, 2001). The peak incidence is between the fourth and fifth decades, and therefore generally active and working adults are most affected. Stones are usually formed in a calyx, and become symptomatic if they move to obstruct the upper urinary tract. In the majority of cases, there is no specific action which causes stone movement from a non-obstructing to an obstructing position. We present the first ever case report in the literature of an episode of renal colic *during* sexual intercourse. The role of percussion therapy and postural drainage are well established following shock-wave lithotripsy (SWL) to enhance passage of lower pole stone fragments (Brownlee et al. in J Urol 143:1096, 1990), and it may well be the result of similar principles of motion and body positioning which caused the patient to present in this manner.

**Keywords** Stones · Colic · Lithotripsy

### Case report

A 36-year-old man presented to the Casualty Department of East Surrey Hospital, complaining of left renal colic the onset of which occurred *during* sexual intercourse. There were no preceding symptoms, and the history was entirely typical. Pain radiated from loin to the groin, was severe and the patient could not get comfortable. Clinical examination revealed a distressed patient with mild flank tenderness. Abdominal and

genital examination was unremarkable. Midstream urine revealed isolated microscopic haematuria. Intravenous urogram revealed low grade left hydroureteronephrosis secondary to a 3-mm distal ureteric stone. The patient was treated conservatively with oral diclofenac, and discharged, to be followed up in outpatient clinic.

### Discussion

Renal calculi are a common occurrence in modern society, with a lifetime risk in men of 2–3% [1]. Calculi are most commonly composed of calcium, combined with oxalate, phosphate, or a combination of other minor constituents. While there are many risk factors for calculi formation, a specific causative agent or identifiable biochemical abnormality is rare [2]. For this reason, specific preventative medical treatment is seldom possible or successful for calcium related stones.

Renal colic is severe, disabling, and terrifying for the patient in the first instance, as it was in this patient. Renal colic occurs when a calculus moves to obstruct the urinary tract, commonly at the pelviureteric junction, pelvic brim, or vesicoureteric junction. The causes of pain related to ureteral colic are the strain on muscular nerve endings and mucosa, which is caused by the increase in ureteral intraluminal pressure resulting from lithic obstruction and the production of lactic acid due to smooth muscle spasm [3]. Percussion therapy and postural drainage with the patient prone have been used to aid the passage of stone fragments from the kidney to the bladder after shockwave lithotripsy (SWL) treatment [4]. In this case, the principles of motion and body positioning may have precipitated movement of the calculus from a non-obstructing position in the kidney to an obstructing position in the ureter, causing the patient to present when he did. On the other hand, it may have been bad luck.

In addition, the biohumoral aspects of sexual intercourse may well be implicated. The role of alpha adrenergic receptors (ARs) in lower urinary tract

L. Wilson  
Great Ormond Street Hospital, London, UK

A. B. Patel (✉)  
Center for Stones Prevention, Institute of Urology  
and Nephrology, 3rd Floor Charles Bell House,  
67-73 Riding House Street, W1W 7EJ, London, UK  
E-mail: amitpat99@aol.com

symptoms (LUTS) has been explored in the literature. Indeed AR antagonists are an established treatment for benign prostatic hyperplasia (BPH) associated LUTS [5]. Several studies have addressed the role of ARs in ureteral physiology. Data obtained from animal and human models indicate that  $\alpha$  and  $\beta$ ARs are present in the ureter [6, 7], with opposing effects on the ureteral smooth muscle contraction. The non-selective agonist noradrenaline increases ureteral smooth muscle tone and peristaltic frequency, indicating that  $\alpha$ AR-mediated contractile activity overrides the relaxing effects induced by the  $\beta$ AR stimulation.

This is reflected in the advent of medical expulsion therapies (MET) in the treatment of distal ureteic calculi (the  $\alpha$ AR antagonist tamsulosin has been shown to have an efficacy similar to ureteroscopy in the expulsion of distal ureteric calculi [8]).

With the adrenergic surge associated with sexual intercourse, stimulation of ARs within ureteric smooth muscle in association with changes in body positioning may well induce an episode of renal colic.

Sexual intercourse has multiple possible hazards, including cardiovascular, respiratory, infective, traumatic, and psychological complications. This is the first case report of renal colic occurring during sexual intercourse.

## References

1. Menon M, Resnick MI (2003) Urinary lithiasis: etiology, diagnosis and medical management. In: Walsh PC, Retik AB, Vaughan EDV Jr, Wein AJ (eds) *Campbell's urology*, 8th edn. WB Saunders, Philadelphia
2. Caramia G, Di Gregorio L, Tarantino ML, Galuffo A, Iacolino R, Caramia M (2004) Uric acid, phosphate and oxalate stones: treatment and prophylaxis. *Urol Int* 72(Suppl 1):24–28
3. Weiss RM (2002) Physiology and pharmacology of the renal pelvis and ureter. In: Walsh PC, Retik AB, Vaughan ED, Wein AJ (eds) *Campbell's urology*, 8th edn. vol 1, Sect. 3, Chap. 11, WB Saunders, Philadelphia, pp 377–407
4. Pace KT, Tariq N, Dyer SJ, Weir MJ, D'A Honey RJ (2001) Mechanical percussion, inversion and diuresis for residual lower pole fragments after shock wave lithotripsy; a prospective, single blind, randomised controlled trial. *J Urol* 166:2065–2071
5. Roehrborn CG, Schwinn DA (2004)  $\alpha_1$  adrenergic receptors and their inhibitors in lower urinary tract symptoms and benign prostatic hyperplasia. *J Urol* 171:1029–1035
6. Lee JZ, Tillig B, Perkasch I et al (1998) Effect of  $\alpha_1$  adrenoceptor antagonist on the urodynamics of the upper and lower urinary tract of the male rat. *Neurourol Urodyn* 17:213–229
7. Park YC, Tomiyama Y, Hayakawa K et al (2000). Existence of a  $\beta_3$  adrenoceptor and its functional role in the human ureter. *J Urol* 164:1364–1370
8. Dellabella M, Milanese G, Muzzonigro G (2005) Randomised trial of the efficacy of tamsulosin, nifedipine and phloroglucinol in medical expulsive therapy for distal ureteral calculi. *J Urol* 174:167–172