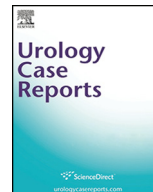




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Endourology

“Mirror” ureteric colic caused by proximal ureteric calculus in massively hydronephrotic kidney

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A B S T R A C T

Patients with ureteric calculi usually present with ipsilateral “loin to groin” pain. Rarely ureteric colic may present with contralateral pain, which is referred to as “mirror pain”. We report the case notes of a rare presentation of contralateral ureteric colic or “mirror pain” secondary to a ureteric calculus. A comprehensive literature review was also conducted.

“Mirror pain” or contralateral ureteric colic is rare. Urologists should be aware of this unusual clinical presentation and appreciate that upper urinary tract calculi can cause pain on the contralateral side.

Introduction

Ureteric calculus is a common and one of the most painful urological disorder.¹ Approximately 8–12% of the population will develop a urinary calculus during their lifetime and recurrence rates approach 50%.^{1,2} The classical presentation of acute ureteric colic is sudden onset, colicky flank pain radiating to the groin, ipsilateral to the calculus.³ Rarely, ureteric colic may present with contralateral pain to the side of the calculus. We report the case notes of a rare presentation of contralateral ureteric colic or “mirror pain” secondary to a ureteric calculus.

Case report

A 47-year-old male presented with a 1-day history of sudden onset left flank pain radiating to his left groin, suggestive of ureteric colic. There was no history of previous renal colic. On examination there was no left loin tenderness. Urinalysis showed microscopic haematuria. Initial plain abdominal Xray covering the kidney, ureters and bladder (KUB) demonstrated a 2cm opacification at the level of the intervertebral disc between the 2nd & 3rd lumbar vertebrae on the left side (Fig. 1). An initial diagnosis of left ureteric colic secondary to this presumed calculus was made and the patient was referred for urological management. Subsequent imaging by non-contrast computerized tomography (CT) of the abdomen and pelvis unexpectedly demonstrated gross hydronephrosis of the right kidney secondary to obstruction from a 2cm calculus actually found to be in the proximal right ureter (Fig. 2). The CT scan and an intravenous pyelogram (Fig. 3) also confirmed that

the left ureter and pelvicalyceal system were normal with no calculi present. The degree of hydronephrosis of the right kidney meant that the pelvi-ureteric junction and proximal ureter containing the calculus were displaced across the midline and located to the left of the great vessels.

In view of the poor function of the right kidney, the patient went on to have an open nephrectomy and stone removal. A plain KUB Xray done after surgery showed that the opacification at L2-L3 was no longer present. The patient's symptoms resolved following surgery.

Discussion

Ureteric calculi are common, affecting approximately 10% of the population.¹ The classical presentation is with acute ureteric colic – a characteristic colicky flank pain of sudden onset, radiating to the groin, ipsilateral to the calculus.³ In acute ureteric colic, the pain results from a number of pathophysiological factors: a direct increase in intraluminal pressure of the collecting system, resulting in the physical stretching of nerve endings in the lamina propria,³ smooth muscle contraction and spasm trying to move the stone down the ureter,⁴ increased production of lactic acid, mucosal irritation and chemoreceptor activation.⁵

As for other types of visceral pain, radiation or referral of pain can occur based on shared innervation.⁵ Thus, ureteric colic can mimic various other painful conditions such as acute cholecystitis, appendicitis, diverticulitis or cystitis.⁵ Rarely, ureteric colic may present with contralateral pain, which has been referred to as “mirror pain” – with three cases described in a Canadian case series.⁴ It has been postulated

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Fig. 1. KUB X-Ray showing calculus at L2-3 on the left.



Fig. 3. IVP showing 2cm opacification overlying normal left ureter.

that mirror pain in upper urinary tract calculi can be explained on the basis of the complex plasticity of the CNS which permits viscerosomatic convergence on both anatomic and physiologic planes.⁴

Conclusion

In our case, the probable explanation for the contralateral pain was that the proximal ureter containing the impacted calculus was displaced across the midline secondary to gross hydronephrosis of the right kidney. The necessity of careful radiological evaluation for accurate diagnosis and appropriate management is clearly highlighted.

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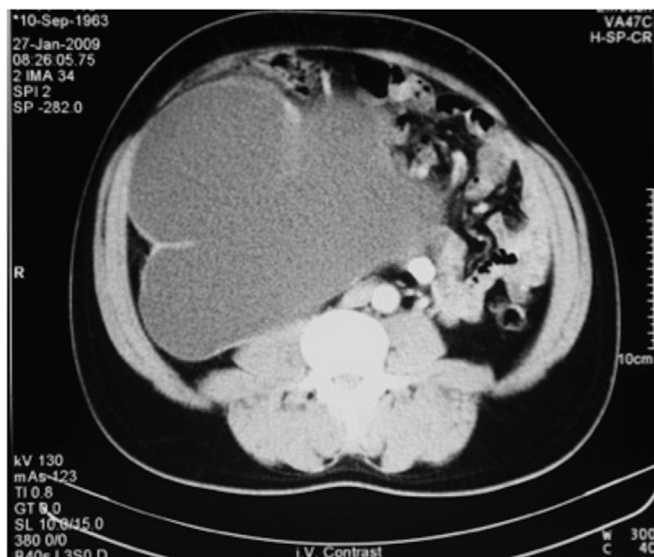


Fig. 2. Non-contrast CT showing grossly hydronephrotic right kidney with a proximal ureteric calculus displaced across the midline.