Case Report

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Giant Staghorn Ureteral Calculus

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Key Words

Ureteral calculi
Urinary calculi
Pyelonephritis
Bifid ureter

Abstract

We are reporting a young female who presented with a history of right flank pain and urinary tract infection off and on. On investigation, she was found to have a giant **fork-shaped** ureteral calculus in a bifid ureter. Since her ipsilateral renal unit was nonfunctioning, nephroureterectomy was performed. Such a case of giant staghorn ureteral calculus in a bifid ureter has never been reported in the world literature.

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Introduction

Patients with duplex ureters have a higher incidence of urinary tract infection than those without a duplex system [1]. Partial obstruction at the site of junction may lead to stasis, infection and subsequently to the formation of stone. Giant ureteral stones as such are rare [2] and no single case of giant ureteral calculus in a bifid ureter is reported in the literature.

Case Report

A 33-year-old female was referred to us with a history of right flank pain off and on for 15 years. She also had a few attacks of UTI in the past 2-3 years. General physical examination was unremarkable except that the patient was frail. On abdominal examination, two longitudinal, cylindrical hard masses were felt in the right iliac fossa and right flank. X-ray KUB demonstrated a fork-like radiopaque shadow in the right flank and pelvic area (fig. 1). Urinalysis demonstrated WBC 10-20/HPF and the presence of bacteria. Urine culture grew *Escherichia coli*. Blood profile and renal function tests were within normal limits. An intravenous urogram revealed a nonvisualized right kidney and a normal-functioning left kidney. Renal dynamic scan (99mTc DTP A) revealed a left normal-functioning renal unit, whereas the right renal unit demonstrated very poor perfusion.

Fig. 1. Plain X-ray KUB showing a fork-like radiopaque density.

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Discussion

Usually, ureteral calculi originate in the kidney and then pass into the ureter. Primary ureteral stones may form in association with some anomaly of ureter [3]. Once stone is lodged or stuck at any point in the ureter, it may keep increasing in size unless passed spontaneously or with intervention. Some stones can also assume enormous proportions [2]. In incomplete duplication of the ureter, to and fro peristalsis of urine from one collecting system to the other may occur. This results in stasis and pyelonephritis and is more pronounced when there is distal Y-junction, when bifid limbs are wide or when the Y-junction is large [1]. The stasis and pyelonephritis persisting for a long duration must have led to formation of this giant staghorn calculus in both

components of a partially duplicated ureter. Giant ureteral calculi have been reported in the past [2], but none in a bifid ureter.

Fig. 2. Giant staghorn ureteral calculus, measuring 26 cm in overall length, whereas each prong (arrow) measured 16 cm in length.

and slow tracer concentration. The differential renal function on renal dynamic scan was 6 and 94% in the right and left kidney, respectively. Right nephroureterectomy was performed. The right kidney was full of pus and mucoid-like material, and the bifid ureter was found to contain a giant staghorn calculus (fig. 2). It weighed 120 g and each prong of the giant staghorn ureteral calculus measured 16 cm in length, whereas the overall length was 26 cm. Histo-pathological examination of the kidney revealed pyonephrosis and chronic pyelonephritis. A 2-year follow-up of the patient was uneventful.

References 1 Bauer SB, Perlmutter AD, Retik AB: Anomalies of the upper urinary tract; in Walsh PC, Retik AB, Stanley FA, Vaughan ED (eds): Campbell Urology, ed 6. Philadelphia, Saunders, 1992. vol 2, pp 1406-1410.

Sabnis RB, Desai RM, Bradoo AM, Puneekar SV, Bapat SD: Giant ureteral stone. J Urol 1992;148:861-863.

Drach GW: Urinary lithiasis: Etiology, diagnosis and medical management; in Walsh PC, Retik AB, Stamey FA, Vaughan ED (eds); Campbell Urology, ed 6. Philadelphia, Saunders 1992. vol 3, pp 2137-2138.