Use of a Duodenoscope in the Management of a Ureteral Calculus in a Patient with Ureterosigmoidostomy (Mainz Pouch II; Rectosigmoid Pouch)

Mainz pouch II (modified ureterosigmoidostomy) is an established technique for permanent urinary diversion in patients with congenital malformations or acquired diseases of the bladder [1]. If urolithiasis occurs, an effective and minimally invasive therapy is mandatory. Extracorporeal shock-wave lithotripsy and surgical procedures are frequently used treatment strategies [2]. Retrograde endoscopic management is an alternative option, which has been reported rarely.

We report here the case of a 24-year-old man, who had undergone ureterosigmoidostomy at the age of 12 months due to bladder exstrophy. The follow-up was unremarkable until the patient's current presentation with acute right flank pain. The ultrasound examination revealed right-sided hydronephrosis, and computed tomography identified a 6-mm ureteral calculus. During sigmoidoscopy, both ureteral ostia were located at a distance of 15 cm from the anal verge, with a normal macroscopic appearance. Urine drainage was identified only at the proximal ostium (Figure **1**). The "dry" distal ostium was therefore intubated using a duodenoscope with a conventional endoscopic retrograde cholangiopancreatography (ERCP) catheter. A retrograde ureterogram was obtained by injecting contrast medium, revealing the 6-mm concrement in the distal ureter (Figure **2**). A Dormia basket was inserted and the calculus extracted (Figure **3**).

To our knowledge, this is the first reported case of successful extraction of a ureteral calculus using a duodenoscope in a patient with Mainz pouch II. Fitzgerald et al. report successful management of a ureteral calculus in a patient with ureterosigmoidostomy by retrograde sigmoid endoscopy with a 21-Fr cystoscope, in combination with intracorporeal lithotripsy [3]. Costamagna et al. successfully managed 19 of 24 ureteroileal complications in patients with ileal pouches using a duodenoscope. A ureteral calculus was removed in one patient [4].

Figure **1** Endoscopic image of the proximal ureteral ostium, with urine draining into the Mainz pouch II.

Figure **2** The retrograde ureterogram, obtained by injecting contrast medium after intubating the ostium with an endoscopic retrograde cholangiopancreatography catheter, shows the ureteral calculus.

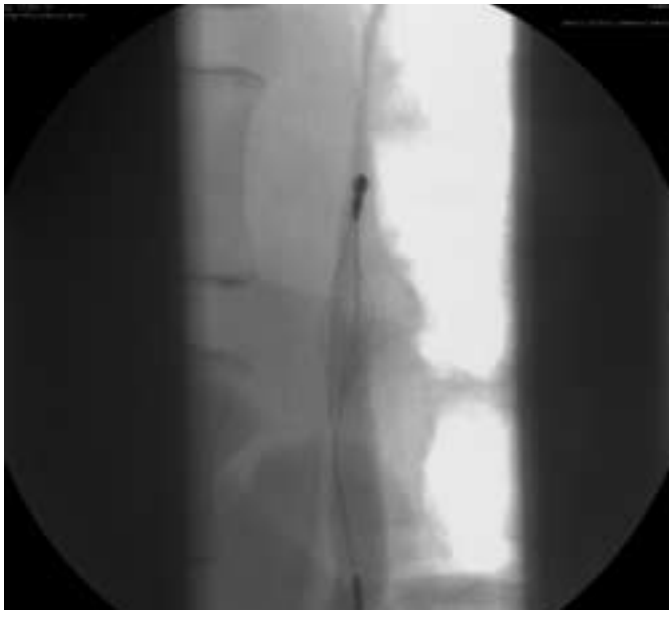

Figure **3** Retrograde ureterogram, showing the Dormia basket in the ureter.

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Retrograde endoscopic management of ureteral calculi is thus a simple technique, which is minimally invasive and provides good access to the distal ureter in patients with ureterosigmoidostomy.

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