Case Report

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Ultrasonic Diagnosis and Transurethral Incision of Ureterocele with Hydronephrosis

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Key Words

Ureterocele
Transurethral incision
Ultrasound diagnosis of ureterocele

Abstract

In a 65-year-old woman with right-sided loin pain, ultrasonography revealed a grossly dilated and obstructed right pyelogram due to a 50-mm ureterocele. After transurethral lateral incision of the ureterocele, there was complete recovery without vesicoureteric reflux. Ultrasonography is advantageous in diagnosing acute urinary-tract obstruction, and transurethral incision is useful in the acute treatment of ureterocele.

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Introduction

Usually, the diagnosis of ureterocele (UC) is obtained by an intravenous pyelography (IVP) showing the dilatation of the distal ureter which is surrounded by a 'cobra-head' halo, representing the bladder wall, or by cystoscopic demonstration of the peristaltic waves in the protruding cystic mass [1]. UC may obstruct the ureter and even the bladder outlet, causing urinary retention [2–3]. Infections, often chronic or recurring, pain and hematuria are, however, the most common symptoms. UC is seldom acutely diagnosed and treated.

We present a case with a very large UC with a pyonephrosis, demonstrated by an acute ultrasonographic examination and immediately treated by transurethral incision. The kidney function was normal thereafter, and no reflux to the ureter was seen.

Case Report

A 67-year-old woman without previous urologic problems; 16 years ago, she had undergone bilateral salpingo-oophorectomy because of benign cysts on the ovaries. For a fortnight, she was having intermittent pain in the right iliac fossa radiating to the right loin, accompanied by fever up to approximately 39 °C. Treatment with sulfamethizole was instituted by her general practitioner. The day before admittance to the hospital, she complained about fractionated micturition and stranguria, but no dysuria or frequency.

At arrival she was in pain and very tender by palpation in the right loin. A urine test (Nepheur®) showed a major infection, urinary

growth later showed *Escherichia coli* species, sensitive for ampicillin. Blood creatinine was normal, 104 µmol/l. Suspecting a pyonephrosis on the right side, intravenous ampicillin was given. A plain X-ray did not show any concretions. An acute ultrasonographic scanning

revealed a severe hydronephrosis on the right side and the diameter of ureter was 3.4 cm. In the bladder, a UC measuring 5 cm was found (fig. 1). Cystoscopy in local anesthesia confirmed the big UC located in the right side of the trigonum area, but the ostium could not be seen. The UC was completely drained by an 8-mm-long transurethral diathermic incision in the lateral part of the roof. A bladder catheter was left for 24 h. On the following day, an IVP was performed showing that the hydronephrosis had almost disappeared and that there was no sign of duplex systems. The patient was discharged on the fourth day with ampicilline for another 3 days. Four months later she was well, the urine was sterile and no signs of reflux were found by an mictiocycturethrography (MCU).

Conclusion

In the presented case, an ultrasonographic examination was made primarily because a pyonephrosis was suspected and percutaneous nephrostomy could be made if necessary. An IVP at that time would have shown the obstruction, but probably not the reason, because of the delayed and weak secretion of the contrast medium. It is obvious that UC without total obstruction can only be visualized ultrasonographically if the examiner waits until the UC is filled with urine by the peristaltic waves in the ureter [4]. Ultrasonography is superior to IVP in duplex systems in the kidney or ureter, if the UC-affected segment has a deteriorated function, and for

216

Waaddegaard/Miskowiak/Stage

Fig. 1. Ultrasonic examination of UC with hydronephrosis. a Severe dilatation of calyces and proximal ureter, b Dilated middle ureter. c UC (arrow) to some extent surrounded by urinary bladder, d Dilated distal ureter and UC surrounded by urinary bladder.

diagnosing UC in utero [5, 6]. However, in some cases of severe obstruction, the renal pelvis may be undilated and ultrasonography fails. The UC has been traditionally treated by neoimplantation of the ureter [7] or by transurethral incision or excision in the acute phase, followed by final open surgery later [8–11]. We therefore performed an MCU in the presented case of a large UC, but it is noticeable that no reflux, deterioration of kidney function, or other complications occurred after a simple lateral incision [8, 9]. This indicates that not only the small- or medium-sized UC can be transurethrally incised with success.

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