The Forgotten Double J Stent
Case Report of a Multifractured Ureter Stent

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Key Words
Kidney
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Abstract
An 81-year-old male patient was admitted to hospital because of macrohematuria. The clinical examination revealed a multifractured double J stent which had been placed 17 months before in another clinic because of hydrenephrosis. In the reported case, a combined endoscopic and open surgical management was necessary to remove all fragments from the renal pelvis, the ureter and the bladder. Occlusion, encrustation and migration are among the most frequent risks of ureter stenting. The breakage of the stent, however, is a rare but severe complication. Therefore, patients should generally be controlled by sonography every 2 months and when malfunction of the stent is suspected, a cystogram should follow. In general, a stent exchange should be performed after 12 months.

Case Report
An 81-year-old male patient was admitted to our hospital because of painless macrohematuria. During the past 14 years, the patient had two transurethral resections of a bladder tumor and subsequent radiation (60 Gy). In February 1988, the patient was admitted to another hospital due to pain in the right loin. B-scan ultrasound examination revealed an ectasis of the renal pelvis, the serum creatinine had increased to 200 µmol/l. Another bladder tumor resection was refused so that only a double J stent was inserted. Seventeen months later, the patient was admitted to our clinic. A primary sono-graphic examination displayed a renal pelvis dilatation up to 2.5 cm with a typical stent reflex in the renal pelvis. The plain radiograph examination (fig. 1) showed the following findings.

The endoscopic diagnostic procedure revealed a bladder tumor relapse. Due to the fragility of the stent fragments and the patient’s decreasing general condition, a combination of percutaneous endoscopic and open surgical management had been necessary to remove all pieces of the broken stent (fig. 2). Prior to the transurethral tumor resection, the stent fragment in the bladder was extracted. The final urogram (intravenous pyelogram) made before discharge from hospital showed a decreasing dilatation of the right renal pelvis and improved values for the serum creatinine (160 µmol/l).

Comment
Due to the widely spread usage of indwelling catheters, the number of possible complications has increased. Usually, the stent exchange or extraction is done endo-scopically, so that only in a few cases an open surgical management will be indicated.

The fractured stent is a rare complication. Two of the 3 cases described by LeRoy et al. [1] had stone material associated with the used fractured stent segments. The catheters were left in place up to 22 months. Mardis et al. [2] observed some stent fractures in very torturous ureters, but only after prolonged use. Therefore, the authors recommend the stent exchange every 6 months. On the contrary, Gibbons et al. [3] reported that one stent had been indwelling for nearly 4 years without any loss of function. A material analysis of our double J fragments had revealed polyurethane as stent material, which is not surprising because nearly all of the available

Fig. 1. A fourfold-fractured double J stent, which was inserted 17 months before.
Fig. 2. Seven fragments which were removed out of the ureter and the renal pelvis.

stents suitable for long-term drainage are made of polyurethane.

In our case, the patient did not come to the regular clinical examinations so that the time of the stent breakage is not known. The macrohematuria as the reason for the admission to our clinic is probably due to the bladder tumor. Therefore, the discovered stent fracture was an accidental finding. The inspection of the stent fragments

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revealed moderate encrustations. The fractures of the stent were always found in the perforated areas.
Patients with long-term double J drainage of the ureter should be controlled by sonography every 2 months and when renal pelvis dilatation is discovered, a cystogram should follow. In general, a stent exchange should be performed after 12 months.

References
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