Introduction

Partial or complete ureteral disruption is often caused by trauma, but can also be a consequence of surgical or other diagnostic procedures. The spontaneous rupture of the ureter is a rare condition, but the most frequent cause is a concrement in the pyelon or ureter. Typical signs for this condition are the absence of renal parenchymal damage, perirenal collection of urine, and absence of haematoma that are always detected in dorsal or medial perirenal space in case of...
trauma.\textsuperscript{1-3} After administration of contrast medium, the leakage and extravasation of contrast is always present. In case of the complete disruption, the contrast material is never seen distally from the site of the rupture, in contrast to the partial disruption where the contrast medium is always seen distally.\textsuperscript{3-5}

For the differentiation of the disruption type, it is important to make also excretory urography and CT examination with contrast medium in addition to anamnestic or clinical data. We thus have more data on contrast position, haematoma or renal parenchyma damage. The disruption caused by trauma always presents the damage of renal parenchyma and the perirenal haematoma. CT examination is also important in following the position of the contrast and that of the urinoma.\textsuperscript{6-8}

**Case report**

R. N., a 40-year-old woman, was hospitalised because of pain attacks, starting 2 weeks earlier, presenting as a renal colic. The day before hospitalisation, the pain was very strong, with colic characteristic in the area of the left hemiabdomen. Later on, the attack suddenly stopped. Clinical examination detected painful areas at the level of the left kidney and in the left hemiabdomen.

Laboratory examinations were normal, except for a great number of fresh erythrocytes in the urine.

Conventional radiological examination of urotract showed an anorganic concrement with the size of $8 \times 4$ mm large, at the level of the transversal processus of the L3 on the left (Figure 1).

Excretory urography was made with contrast medium (Telebrix 380, 60 ml). The right kidney was normal, but in the left one, the dilatation of the canal system, including the cups with necks and pyelon, was found. The leakage of the contrast medium from pye-
loureteric passage in the distal direction along the psoas muscle to the pelvis was also present on the left side. The renal parenchyma on the left was intact (Figure 2).

A conventional CT examination of the abdomen showed the dilatation of the canal system of the left kidney with the extravasation of the contrast medium into the medial and dorsal part of the left perirenal space, and also into the medial and partially ventral part of the peripyleal space. After the introduction of contrast medium, the left ureter shows opacification (Figures 3a, b, c, d). On the distally transverse scans, the contrast medium was seen along the psoas muscle to the pelvis. The findings in the right kidney were normal.

During surgical exploration, a large amount of liquid was found in a perirenal space and along the left ureter and psoas muscle. The site of spontaneous rupture was found at the level of the pyeloureteric junction; the ureter, though, was not completely disconnected from the pyelon. The concrement was extracted through this part of the ureter and surgical suture was made.

All control laboratory examinations were normal. At the control excretory urography performed 5 days after surgical treatment, the dilatation at the middle of the canal system of the kidney was seen, but there was no more signs of the leakage of the contrast.

Figure 3. CT finding: (a) dilatation of the canal system of the left kidney, with the contrast leaking into the medial and dorsal perirenal space, without any sign of the trauma of the kidney or perirenal haematoma; (b) and (c) the contrast found in the medial part of the kidney and pyelon; d) the contrast in the ureter dispersed distally along the psoas muscle and also in the periuretral space.
Partial spontaneous rupture of the ureter is an extremely rare condition, mostly caused by ureteral stone. The rupture of the ureter and the pyelon with or without the rupture of the kidney can sometime occur as a result of blunt trauma. Such condition can be caused also by surgical or diagnostic ureteral procedures.

The CT image of blunt renal trauma showed the presence of extravasation, laceration and haematoma of renal tissue with perirenal haematoma. Contrary to traumatic disruptions, partial spontaneous and complete disruptions of the ureter have a characteristic CT image after contrast medium applications. This image shows an intact renal parenchyma, the absence of the perirenal haematoma and predominately perirenal fluid collection. At the complete disruption of the ureter caused by trauma the opacifications of the ureter oriented distally from the rupture were not observed, whereas those oriented distally along the psoas muscle is present.

In partial spontaneous disruption of the ureter, the contrast medium in the ureter is seen distally from the site of the rupture and as extravasation along the psoas muscle.

References