Acute Renal Failure due to Bilateral Ureteral Hematomas Complicating Anticoagulant Therapy

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Dear Sir,

Patients receiving oral anticoagulant therapy may develop flank pain and gross hematuria. These symptoms usually correspond to intraluminal ureteral blood clot formation, and to intrarenal or perirenal hematomas. Retroperitoneal bleeding responsible for ureteral compression is uncommon [1] and exceptionally leads to bilateral ureteral obstruction and acute renal failure (ARF) [2]. Submucosal hemorrhage of one ureter without ARF has been anecdotally reported [3]. We describe the case of a patient who received oral anticoagulation, and developed transient obstructive ARF due to submucosal hemorrhage of the two ureters. A 65-year-old woman had taken warfarin for 5 years after placement of an aortic valve prosthesis. Six days prior to admission, she had a pharyngitis treated by amoxicillin and paracetamol. Physical examination showed tonsillitis but was otherwise normal. Laboratory results were as follows: serum creatinine 88 $\mu\text{mol/l}$, prothrombin activity level 19%, hemoglobin level 12.5 g/dl, leukocyte count $9 \times 10^6/\text{l}$, and platelet count $403 \times 10^9/\text{l}$. Penicillin G and metronidazole were given in combination with warfarin. One week later, the patient developed vomiting, lumbar pain and oliguria without bladder distension. Serum creatinine was 359 $\mu\text{mol/l}$, prothrombin activity 8% and hemoglobin level was unchanged. There was a mild proteinuria with microscopic hematuria (10V/ml). Urine cultures were sterile.

Fig. 1. CT scan without contrast enhancement. Hyper-dense thickening of the pelvic wall (arrow).

A renal sonogram showed moderate bilateral hydronephrosis. CT scan without contrast enhancement showed enlarged kidneys and an extensive hyperdense thickening of the pelvic and ureteral wall, with narrowing of the ureteral lumen (fig. 1). Oral anticoagulation was stopped, intravenous vitamin K was given and prothrombin activity rose to 68%. Diuresis resumed within 24 h and lumbar pain disappeared spontaneously. Serum creatinine rapidly normalized. A second CT scan with contrast enhancement and urography (fig. 2) confirmed the intramural defects of the pelvica-lyceal system and of both ureters, contrasting

with their enlarged diameter (10 mm). Three weeks later, an intravenous urography and a CT scan showed normal excretory urograms (fig. 3). Reversible acute renal failure due to obstructive uropathy is a rare complication of oral anticoagulant therapy. In our patient, extensive bilateral ureteral compression was due to submucosal hemorrhage, a very unusual finding in this setting [2, 3]. Diagnosis was promptly made by a CT scan, leading to a stop of anticoagulants and to subsequent full renal recovery. This case also recalls that many drugs may enhance oral anticoagulant activity, including metronidazole.

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Fig. 2. Intravenous urography. Bilateral submucosal hematomas of the pelvicalyceal system (arrows) with narrowing of the ureteral lumen.

References

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Fig. 3. Three weeks later, the excretory urogram is normal.

166

Kolko/Kiselman/Russ/Bacques/ Ureteral Hematomas after Anticoagulant
Kleinknecht Therapy