Case Report

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Iliac Artery-Ureteral Fistula Associated with an Indwelling Ureteral Stent

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Key Words

Fistula

Iliac artery-ureteral fistula

Stent

Abstract

We report on a patient with an ureteroiliac artery fistula, which developed after double J stenting. The stent was introduced because of unilateral hydronephrosis 2 months after a Wertheim-Meigs operation preceded by cesium application. The presenting symptom of gross hematuria was initially misjudged to originate from the kidney. The diagnostic difficulties in this case are discussed.

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Introduction

Gross hematuria will not be associated directly with an ureteroarterial fistula. However, the increasing use of indwelling ureteral stents may cause this potentially catastrophic situation to appear with greater frequency in urological practice.

Case Report

A 34-year-old female was admitted in June 1988 for asymptomatic unilateral obstructive uropathy. Interstitial cesium irradiation followed by a Wertheim-Meigs operation for stage IB carcinoma of the cervix had been performed 2 months previously. Evaluation revealed right-sided hydronephrosis secondary to a ureteral stop at the level of the sacroiliac joint. A 7-french polyethylene ureteral stent was placed without difficulties and exchanged 3 months later. Three weeks later she presented with macroscopic hematuria and mild right flank pain. Hemoglobin was 93 g%, blood clotting tests were normal. Ultrasound examination showed multiple clots in a slightly dilated right pyelocaliceal system as well as in the bladder. After clot evacuation cystoscopy showed no abnormalities. The double J stent was removed over a guide wire. Retrograde ureteropyelography showed filling defects in the pelvis suggesting blood clots. A detailed angiographic evaluation suggested bleeding out of a

Fig. 1. Right occlusive ureterogram shows clots but no iliac artery-ureteral fistula.

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small artery in the central part of the kidney. Aortography and bilateral iliac arteriography showed no abnormalities. Highly selective embolization of the suspicious area was performed. Within 24 h however massive hematuria recurred and an emergency translumbal right

nephrectomy was done. The next morning massive hematuria recurred so a fistula between the common iliac artery and the ureter was suspected. An occlusive ureterogram failed to visualize the fistula (fig. 1), as did angiography of the right iliac artery. However, on clinical grounds a laparotomy was performed. After clamping the right common iliac artery, the iliac interna and externa, the 2-cm-thick blood filled ureter was opened and a fistula between the bifurcation of the common iliac artery and the ureter diagnosed. It was oversewn with 5-0 ticon and the remaining ureter resected. A biopsy taken from the fibrotic tissue around the ureter showed no signs of malignancy. The patient could be discharged after 14 days without any further hematuria.

Discussion

Stent placement in an obstructed ureter in a patient shortly after major pelvic surgery is increasingly being carried out to gain some time for recovery. The main reason for such a treatment plan may be a poor condition of these patients making an operation at that time hazardous. Leaving a stent in a ureter is however not without danger, especially in ureters jeopardized by recurrent tumor, ischemic fibrosis, chronic infection, or previous radiotherapy [1]. Ureteroarterial fistula were documented at first when right-sided ureteral catheters were positioned to relieve obstruction associated with pregnancy. In these cases pressure necrosis of the catheter-ized ureter by the gravid uterus was believed to contribute to the formation of a fistula [2]. It is well known that the relatively rigid polyethylene stents may irritate the ureter [3]. The pulsations of the iliac artery transmitted through an already compromised ureter to a stiff intralu-minal foreign body can readily produce necrosis. When ureteral stenting is necessary for a longer period, it is

therefore advisable to use small and soft silicone stents. Ideally the stent material should be pliable and the patient should be free of infection and ischemia.

The diagnosis of ureteroarterial fistulas can be difficult. Retrograde ureterography will not be of much help in a patient whose fistulous tract is temporarily closed by clots in the ureter or the fistulous opening. Arteriography may demonstrate the site of the fistula only if it is performed during an episode of active bleeding. In our patient the diagnosis was made on the basis of exclusion of other diagnoses since massive hemorrhage recurred after nephrectomy. Gross hematuria will not be associated directly with a ureteroarterial fistula. It should, however, be on the differential diagnosis list in the case of hematuria in patients with an indwelling ureteral stent.

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