

## Successful Percutaneous Embolization of a Renal Arteriovenous Fistula Following Renal Biopsy

Sydney Benchetrit MD<sup>1,4</sup>, Jacques Bernheim MD<sup>1,4</sup>, Igal Griton MD<sup>2,4</sup>, Miriam Verner MD<sup>3,4</sup>, Eugene Kots MD<sup>2,4</sup> and Ze'ev Korzets MBBS<sup>1,4</sup>

<sup>1</sup>Department of Nephrology and Hypertension, and Units of <sup>2</sup>Interventional Radiology and <sup>3</sup>Ultrasound Imaging, Sapir Medical Center, Kfar Saba, Israel

<sup>4</sup>Affiliated to Sackler Faculty of Medicine, Tel Aviv University, Ramat Aviv, Israel

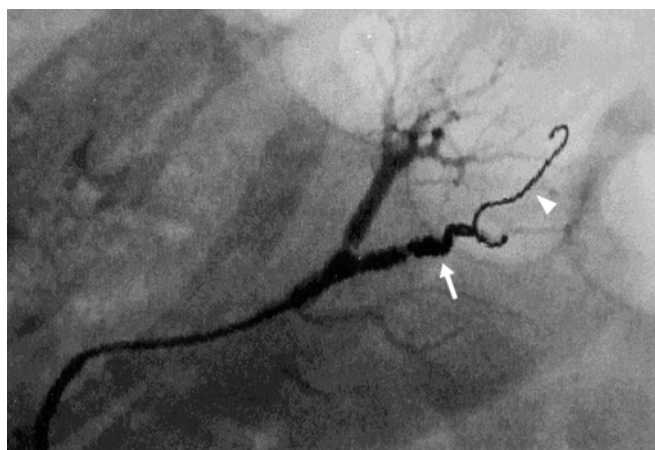
IMAJ 2005;7:277

A 24 year old woman underwent an elective kidney biopsy for the evaluation of microhematuria and non-nephrotic range proteinuria. Coagulation profile (activated partial thromboplastin time and prothrombin time), bleeding time, renal function and blood pressure were all within normal limits. An ultrasound-guided kidney biopsy using an automated needle was performed in the lower pole of the left kidney and two tissue specimens were removed. An immediate post-biopsy color duplex sonography was without abnormality. The initial 30 hours after biopsy were unremarkable. However, thereafter, the patient complained of left flank pain, palpitations and shortness of breath. On examination, she was found to be tachycardic (108/minutes), hypotensive (96/60 mmHg) and tachypneic (36/min). Marked conjunctival pallor and left flank tenderness were present. There was no evidence of macroscopic hematuria. An urgent blood count showed a fall from baseline of 4 g/dl of se-rum hemoglobin (12.2–8.2 g/dl).

Renal angiography of the left kidney was performed, demonstrating a large arteriovenous fistula in the inferior pole [Figure 1]. Selective embolization with 3 mm diameter coils of the feeding arterial branch successfully closed the arterio-



**Figure 1.** Arterial phase of renal angiography showing a peripheral artery feeding a large intrarenal vein (arrow).



**Figure 2.** Post-embolization angiogram with the coils in place (arrowhead). One of the coils has remained unwound (arrow). The previously demonstrated vein is now no longer visible.

nous fistula [Figure 2]. Following the procedure and after transfusion of three packed red blood cell units, the patient's

condition stabilized. She was discharged 2 days later with a hemoglobin concentration of 11.8 g/dl. Closure of the arteriovenous fistula was confirmed on a repeat color duplex ultrasound.

Symptomatic arteriovenous fistula is usually considered a rare (incidence of 0.4%) and late major complication of kidney biopsy [1]. It may, however, present acutely as severe bleeding. It is of note that our patient developed hemorrhagic shock 30 hours after biopsy, strengthening the view that a minimum observation period of 24 hours post-biopsy is required [1]. Selective renal embolization is today the therapeutic procedure of choice in such cases, or indeed in any other causation of bleeding after renal biopsy [2].

### References

1. Whittier WL, Korbet SM. Renal biopsy: update. *Curr Opin Nephrol Hypertens* 2004;13:661–5.
2. Manno C, Strippoli GFM, Arnesano L, et al. Predictors of bleeding complications in percutaneous ultrasound-guided renal biopsy. *Kidney Int* 2004;66:1570–7.

**Correspondence:** Dr. S. Benchetrit, Dept. of Nephrology and Hypertension, Meir Hospital-Sapir Medical Center, Kfar Saba 44281,

Israel. Phone: (972-9) 747-2517

Fax: (972-9) 741-6918

email: sydneybe@clalit.org.il