Late Arterovenous Fistula after Partial Nephrectomy in Solitary Kidney

Alessandro Crestani*, Marta Rossanese, Mattia Calandriello, Gianluca Giannarini and Vincenzo Ficarra

1Department of Urology, University of Messina, Italy
2Urology Unit, Academic Medical Centre Hospital “Santa Maria della Misericordia”, Udine, Italy

Introduction
While the vast majority of patients with renal masses present with unilateral disease, ~3% of patients are diagnosed with synchronous bilateral renal masses [1]. However, the optimal treatment strategies for patients presenting with synchronous bilateral renal masses remains unknown. The decision to perform bilateral procedures on the same day or in staged procedures is often based on surgeon preference. Operating on both kidneys on the same day has the potential benefits of eliminating the morbidity and risks of two separate operations; however, there is a potential risk of increased peri-operative surgical complications and significant detriments to renal function [2-3]. Main postoperative complications of partial nephrectomy are represented by urine leakage, arterovenous fistula/pseudoaneurysm. The timing of these complications is generally limited to the perioperative period. Here in we describe a case of late occurring pseudoaneurysm after imperative right partial nephrectomy.

Case Presentation
A 69 year-old man presented to our department for incidental diagnosis of bilateral renal masses; left side 8.6 cm and right side 5.4 cm (Figure 1). The PADUA score was 13 and 12 for the left and right renal mass respectively. The patient has not any significant comorbidity. The serum creatinine was 1.32 mg/dL and the estimated Glomerular Filtration Rate (eGFR) was 53 mL/min. A mercaptoacetyltriglycine (MAG-3) diuretic renography showed a split renal function of 70% for the right side and 30% for the left side. The patient underwent a concomitant left radical nephrectomy and right partial nephrectomy. The operative time was 300 min, the estimated blood loss was 800 mL and there were no intraoperative complications. The postoperative period was characterized by transitory acute kidney insufficiency and the patient was discharged on postoperative day 12 with a serum creatinine 1.68 mg/dL and an eGFR of 42 mL/min. The specimen analysis showed a clear cell renal cell carcinoma Fuhrman grade 3 stage pT2a for the left side and clear cell renal cell catcinoma Fuhrman grade 3 stage pT1a for the right side. The patient underwent regular follow up evaluation according to EAU guidelines with abdomen ultrasound every 3 mo and CT scan every 6 mo. After 2 years CT scan showed a 5 cm left arterovenous fistula (Figure 2). After multidisciplinary evaluation of clinical case patient underwent an arteriographic study of right renal vessel that confirmed the pseudoaneurysm and an embolization of the tributary artery branch. An abdomen CT scan...
performed 1 week after the procedure showed the absence of the arterovenous fistula with a good perfusion on the renal parenchyma (Figure 3). The serum creatinine increased only until 1.9 mg/dL with an eGFR of 37 mL/min. After 1 year the follow up is still negative and CT scan does not show any pseudoaneurysm.

Conclusion

Late arterovenous fistula is a rare complication after partial nephrectomy that may occurs in bleeding and affects renal function especially in solitary kidney. Radiological approach for its treatment is feasible in expert hands.

References