

## Radiological Embolization in Kidney Trauma

Mohamed Trigui\*, Ahmed Chaabouni, Ahmed Samet, Hazem hachicha Smaoui walid, Omar Kammoun, Brahim Mejdoub, Mseddi med amin, Rebai Nouri, Fourati Mohamed and Hadj slimen Mourad

Academic hospital, Habib Bourguiba, SFAX, Tunisia

### Abstract

**Objective:** To show the interest of renal embolization in traumatic contexts and to discuss the choice of the technique and the agent of embolization according to the lesion assessment.

**Material and methods:** Descriptive monocentric retrospective study collecting 10 patients for whom 11 renal embolization were performed in the vascular room of the medical imaging department of the CHU Habib Bourguiba in Sfax from 2000 to 2019. All the patients were referred from the urology department.

**Result:** 7 men and 3 women with average age: 38 years old (15-62 years old)

### Introduction

Interventional radiology has become over the last decades an essential therapeutic alternative in the management of renal haemorrhage. Indeed, renal embolization is now the treatment of choice in certain traumatic pathologies.

### Case Presentation

11 embolization were performed (one patient underwent embolization twice). The reason for hospitalization was macroscopic hematuria in all cases, associated with lumbar pain in 7 cases secondary in all cases to a road accident. Four of our patients were admitted in a state of shock, suppressed by vascular filling. Abdominopelvic CT scan was performed in all cases. The indication for embolization was AAST grade 5 blunt renal trauma in 5 cases (1 case on a large angiomyolipoma).

3 cases of kidney trauma opened by stabbing vascular lesions of arteriovenous fistulas and/or post-traumatic false aneurysms in the 2 other cases. The embolization agents used were spongel alone in 2 cases, spongel followed by coils in 2 cases, coils alone in 3 cases, microbeads followed by coils in 2 cases and microbeads alone in 1 case.

Lumbar pain during the act was noted in 5 of our patients, having improved under analgesic treatment.

---

**Citation:** Mohamed Trigui, Ahmed Chaabouni, Ahmed Samet, Hazem hachicha Smaoui walid, Omar Kammoun, Brahim Mejdoub, Mseddi med amin, Rebai Nouri, Fourati Mohamed and Hadj slimen Mourad. *Radiological Embolization in Kidney Trauma. Int Case Rep Jour. 2022;2(8):1-4.*

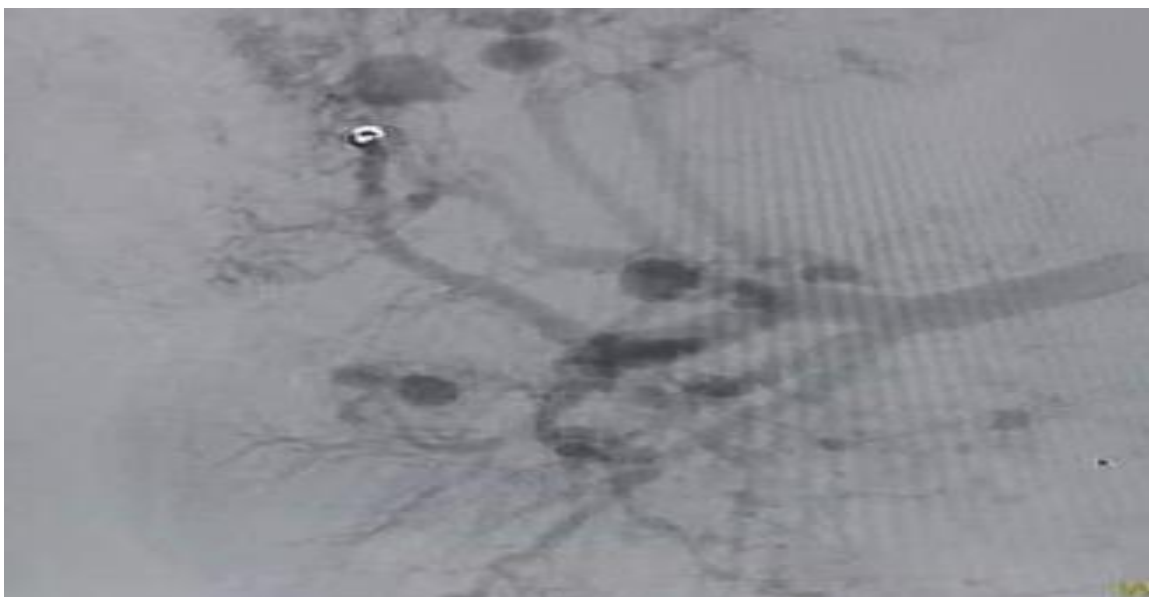
**Received Date:** 26 October, 2022; **Accepted Date:** 10 November, 2022; **Published Date:** 14 November, 2022

\***Corresponding author:** Mohamed Trigui, Academic hospital, Habib Bourguiba, SFAX, Tunisia, E-mail: [mohamedtrigui047@gmail.com](mailto:mohamedtrigui047@gmail.com)

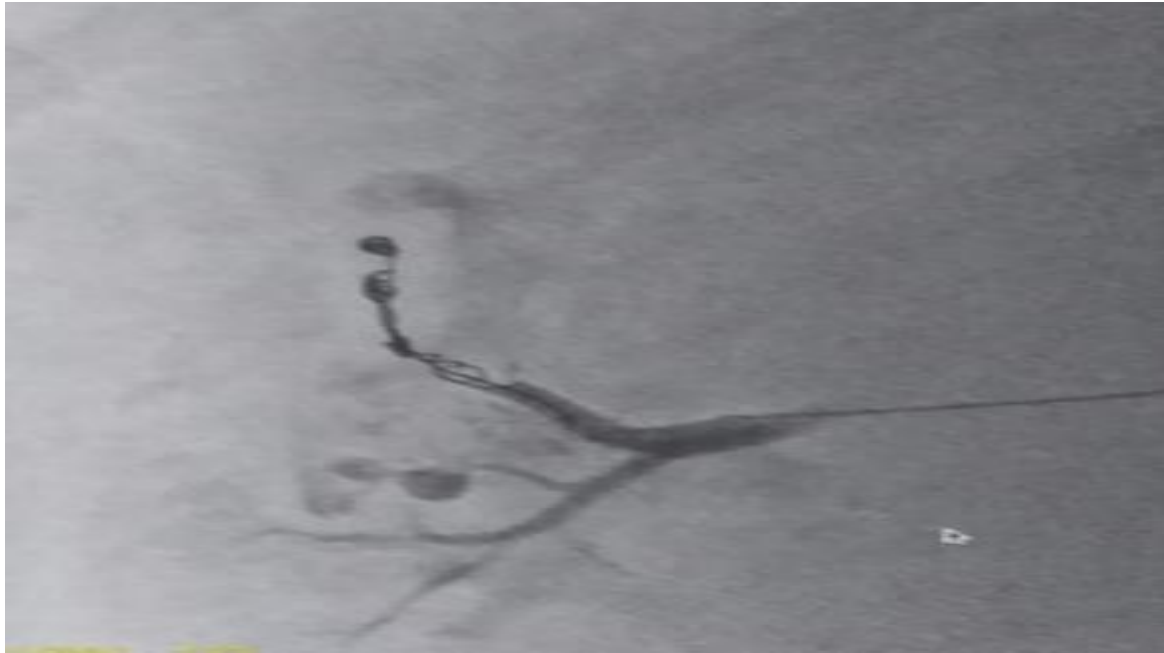
We noted a technical and clinical success in 9 cases out of 10. The case of clinical failure which required a nephrectomy is related to a technically incomplete embolization. Post embolization syndrome was observed in 3 patients.(Figure 1-3)



**Figure 1:** Presence of a large renal mass with a predominant fatty component with extravasation in the arterial phase of product associated with a large perirenal hematoma on an angiomyolipoma discovered by chance following the trauma.



**Figure 2:** Angiography: presence of an aneurysm with extravasation of the product obstructed by a coil in an interlobar arterial branch.



**Figure 3:** Selective arterial embolization: use of microparticles and coil.

### Discussion

Criteria for angiography and embolization in patients with renal hemorrhage include persistent bleeding from a renal segmental artery with or without parenchymal laceration; unstable condition with grade 3-4 lesion, arteriovenous fistula, or pseudoaneurysm; persistent macroscopic hematuria and/or rapid decrease in hematocrit.[1]

Embolization equipment should be selected based on the site, the size and flow pattern of the vessels to be occluded, the availability of equipment, and the experience of the interventional radiologist. Percutaneous angiography with selective coil embolization is the initial treatment of choice for renal arterial bleeding. A superselective embolization as distal as possible is mandatory, at least at the level of the interlobar arteries, to limit parenchymal losses as much as possible. This can usually be achieved using microcatheters and microcoils as embolic agents.[2]

The main disadvantage of coil embolization is that more than one coil is usually required for adequate occlusion, which increases the cost and time of the procedure. Liquid embolic agents can be very helpful. Cyanoacrylates offer the advantage of low viscosity for easy injection through small catheters. The use of NBCA glue is of particular interest in hemodynamically unstable patients and in cases of underlying coagulopathy, as it provides better hemostasis than other embolic agents.[3]

### Conclusion

Renal embolization is currently emerging as a minimally invasive technique for treating post-traumatic hematuria with good results and a low rate of complications.

### References

1. [Loffroy R, Chevallier O, Gehin S, Midulla M, Berthod PE, Galland C, et al. Endovascular management of arterial injuries after blunt or iatrogenic renal trauma. Quant Imaging Med Surg. 2017;7\(4\):434-42.](#)
2. [Bent C, Iyngkaran T, Power N, Matson M, Hajdinjak T, Buchholz N, et al. Urological injuries following trauma. Clin Radiol. 2008;63\(12\):1361-71.](#)
3. [Chow SJD, Thompson KJ, Hartman JF, Wright ML. A 10-year review of blunt renal artery injuries at an urban level I trauma centre. Injury. 2009;40\(8\):844-50.](#)