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Iatrogenic renal vascular injuries: what is the role of the interventional radiologist?

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Purpose: To demonstrate the role of interventional radiology in the treatment of iatrogenic renal vascular injuries using transcatheter embolization by reviewing our 6-year experience.

Material and methods: Our retrospective analysis consists of a total of 65 patients (38 M and 27 F) who underwent renal arterial embolization (RAE) for iatrogenic arterial kidney bleeding. Percutaneous nephrostomy (n=26), nephron-sparing surgery (n=20), percutaneous nephrolithotomy (n=10), surgical nephrectomy (n=6), and biopsy (n=4) were the iatrogenic cause. Estimated glomerular filtration rate (eGFR), renal function tests, hemoglobin, and hematocrit levels before and after embolization were recorded and compared.

Results: Diagnostic renal angiography revealed 40 pseudoaneurysms, 21 arteriovenous fistulas, 4 actively bleeding vessels, and 2 arteriovenous fistulas. Embolization was performed with microcoils, polyvinyl alcohol particles, embospheres, spongostan emulsion and Glubran plus Lipiodol. The technical success rate was 100%. No major complications requiring intensive care treatment were encountered during or after the procedures. No patient required emergency surgery or subsequent surgical treatment. No statistically significant differences in eGFR or renal function stage appeared after RAE.

Conclusion: Percutaneous treatment can be proposed as a first-line treatment in iatrogenic renal arterial injuries, resulting in a safe and effective procedure without significant change in renal function.