Transradial superselective embolization of large renal angiomyolipoma: technique and initial results

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Objective

Transradial access has been shown to be a safe and feasible alternative to transfemoral access in coronary and non-coronary interventions, with lower risk of bleeding complications, earlier patient mobilization and better patient's satisfaction. We describe our experience in using transradial approach for super-selective embolization of large (>4cm) renal angiomyolipoma (AML).

Materials and methods

Retrospective analysis of 15 consecutive patients who underwent transradial embolization of large (>4cm) renal AML from January 2019 to May 2020. Volumetric analysis of AML was performed before and after embolization to calculate the percentage volume reduction on Vitrea™ workstation.

Technique

Vascular access: Left radial access with 5Fr Glidesheath Slender

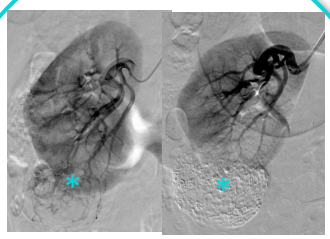
Catheter selection: 120cm 5Fr TIG catheter/125cm 5Fr MPA1 catheter for renal artery cannulation; 2.1/2.4Fr Merit Maestro microcatheter for super-selective cannulation of AML feeding artery

Embolization agent: 75% ethanol-lipiodol mixture

Haemostasis: Patent haemostasis with compression device (TR Band, Terumo).

Post-procedure care: Patient were allowed **immediate mobilization after procedure**. Patients were assessed hourly for hand perfusion. Hemostasis device was removed 4 hours after the procedure.

Set-up



Angiogram before and after superselective embolization of renal AML (asterisks). Note the preservation of normal renal parenchymal perfusion.

Results

Demographics and indications

15 patients (M:F 3:12)
Median 59 (IQR 55 – 64)
Large size (n = 14),
Large size + hematuria (n = 1)
Median AML size: 6.3 cm (IQR 5.1 – 7.6 cm)
Median AML volume: 67.0 cm^3 (IQR 42.1 – 88.7 cm^3)

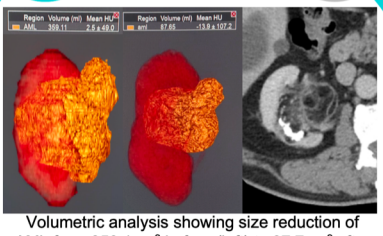
Median length of hospital stay

1 day (range, 0-2 days)

Technical success rate

93.3% (n = 14)

(Failed superselective cannulation in 1 patient due to severe vasospasm of AML feeding artery)



Volumetric analysis showing size reduction of AML from 359.1cm^3 before (left) to 87.7cm^3 after embolization (middle). Follow up CT showing residual fat component of the AML and evidence of lipiodol uptake (right).

Feasibility of radial access

100% access success rate
0% access site crossover rate
Median radial artery internal diameter: 2.2mm (IQR 1.9 – 2.5 mm)

Median AML volume reduction*

52.4% (IQR 35.6% - 60.4%) at a median imaging follow up of 6.1 months

*Follow up imaging available in 10 patients at the time of study

Complication

0% access site complication
1 patient developed post-embolization syndrome

Conclusion

Superselective embolization of large (> 4cm) renal angiomyolipoma is safe and feasible using transradial approach, allowing early patient mobilization and better patient comfort.