

Objective

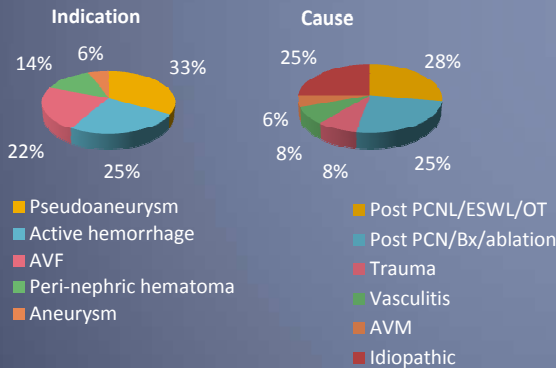
Renal artery embolisation (RAE) is a common and effective procedure for the treatment of various diseases. The usual indication is renal angiomyolipoma (AML) related. This review would focus on case series of RAE with other indications, technique and discussion on challenging cases in Hong Kong East Cluster Hospitals.

Materials and Methods

A total 33 patients underwent 36 RAE from 1 January 2015 to 30 June 2019 in my cluster hospitals were included. Patient's demographics, indications, diagnosis, procedural details and outcomes were retrieved from database, retrospectively reviewed and analysed. Literatures related to RAE were searched and reviewed.

Result

	Mean (range) age (years)	Sex	Institution	Urgent	Elective	Reprocedure
Mean (range) age (years)	61 (27-82)					
Sex		Single branch				
Male	26	Multiple branches				
Female	10	Main renal artery				
Institution		Accessory renal a.				
PYNEH	35	Embolic agent				
RH	1	Coil				
Urgent	33	Mean Coils (range)				
Elective	3	Particles or glue				
Reprocedure	2	Both				



Discussion

There are numerous embolisation materials, which could be broadly classified as resorbable or non-resorbable materials.

Synthetic gelatin sponge is a biodegradable material and resorbed within 3 weeks to 3 months. It is well tolerated but the final volume and distribution are difficult to predict.

Polyvinyl foam, biological glue and metallic coil are relatively common non-resorbable materials used in my center. Polyvinyl foam is ideal to exclude cortical lesion. Pseudoaneurysm or arteriovenous fistula are appropriate to be embolised by metallic coils. Hemorrhage and arteriovenous malformation (AVM) are suitable to be occluded by biological glue.

Occluders and detachable balloons are ideal for AVM and pedicular aneurysms but they are less common in my center.

Reference

Loffroy R et al. Transcatheter arterial embolization in patients with kidney diseases: an overview of the technical aspects and clinical indications. Korean J Radiol. 2010 May-Jun;11(3):257-268. Epub 2010 Apr 29.
 Ginat DT et al. Transcatheter renal artery embolization: clinical applications and techniques. Tech Vasc Interv Radiol. 2009 Dec;12(4):224-239

Case 1 Left Renal Aneurysmal AV fistula

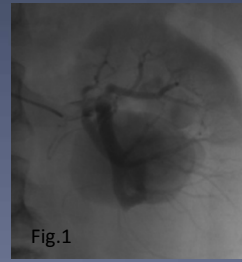


Fig.1

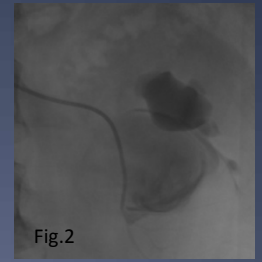


Fig.2

Fig.1: Left renal angiogram shows the aneurysm.

Fig.2: Cannulation to the feeding artery using 5Fr catheter.

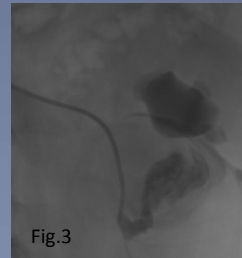


Fig.3

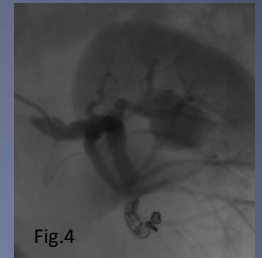


Fig.4

Fig.3: Coils embolisation in this feeding artery.

Fig.4: Completion angiogram shows complete cessation of flow to the aneurysm in post-procedure angiogram.

Case 2: Left High-flow Renal Arteriovenous Fistula

Fig.5: A large AVF arising from upper pole of L kidney with bulbous dilatation of the vessel just proximal to the fistula. L renal vein is markedly dilated.

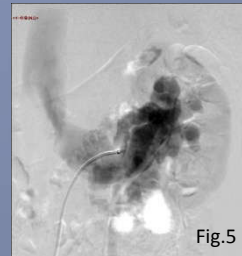


Fig.5

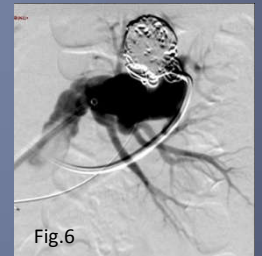


Fig.6

Fig.6 & 7: Attempted to coil the fistula from renal artery but fail to anchor the wall as high flow. Through-and-through wire technique is attempted to track from venous side to arterial side but unsuccessful due to acute angulation. The bulbous dilatation was finally successfully entered through venous side with tri-axial access established and was packed by 6 coils.



Fig.7



Fig.8

Fig.8: Complete obliteration of the fistula with preservation of most of the renal arterial branches in post-procedure DSA.