RENAL ANGIOMYOLIPOMA SUPPLIED BY LOW-LYING ACCESSORY/ABERRANT RENAL ARTERY, INITIALLY MISSED DURING FIRST EMBOLIZATION COMPLICATED WITH HUGE PSEUDOANEURYSM EMBOLIZED BY DETACHABLE COILS.
Renal angiomyolipoma (AML) is the most common mesenchymal tumor of the kidney composed of adipose tissue, smooth muscle and abnormal blood vessels.

This is usually asymptomatic but can present as acute retroperitoneal haematoma associated with life threatening haemorrhage.

First line treatment is endovascular embolization by interventional radiologists.

Blood supply of the AML can be tricky not arising from main renal artery including accessory renal artery, supernumary renal arteries or parasitic renal arteries.

These supplies could be missed initially due to large size of the tumor compressing or distorting the arteries and not reviewed by initial CT.

(Conflict of Interest: None)
CASE REPORT

CASE : F/50

Presented with rupture large right renal AML. Small pseudoaneurysm is noted within the lesion. (green arrow)

No aberrant or accessory renal artery was detected initially. Small 1cm aneurysm was observed inside tumor on CT.

Superselective embolization of the lower pole AML was performed by Embosphere Microsphere 500-700um.

The aneurysm observed during CT was not visualized during embolization. Presumed thrombosed before examination.

Searching for parasitic supply at SMA also performed with no supply to kidney to tumor.

Patient stabilized and discharged after embolization.
FIRST EMBOLIZATION ATTEMPT

Huge right lower pole hypervascular AML.

Embolization by Embosphere Microsphere 500-700um (Merit Medical) till stasis performed.
FOLLOW UP CT

- Follow up CT 6 months later shown no shrinkage of tumor with development of multiple pseudoaneurysm measured up to 4cm. (Green Arrow)
An accessory/ aberrant inferior polar renal artery arising from lower abdominal aorta at L4 level was detected. (Yellow Arrow). More conspicuous on volume rendering images.

- It perforated substance of kidney rather than hilum.
- It was not conspicuous in the initial CT.
2ND EMBOLIZATION

Accessory/ aberrant Inferior polar right renal artery arising from abdominal aorta at L4 level is cannulated by 4Fr S1 catheter.

Inferior polar renal artery angiogram shown multiple pseudoaneurysms measured up to about 4cm.
POST EMBOLIZATION

Embolization by Embosphere Microsphere 500-700um (Merit Medical) and large detachable coils (Penumbra) performed.

Post embolization shown complete occlusion of all the pseudoaneurysm.

No vascularity of the tumor is detected after embolization.
DISCUSSION

Kidney has very complex embryogenesis. There are lots of vascular variants that can have different clinical implications. e.g. accessory polar renal artery can compress on ureter causing obstruction.

There are many different naming for multiple renal arteries, e.g. supernumerary, multiple, accessory, aberrant. Some proposed renal artery passing through renal substance without entering renal hilum as aberrant renal artery.

Latest classification by Daescus et al. (1) defined the renal arteries can be hilar and polar (superior and inferior).

These accessory/aberrant renal arteries usually originate from the abdominal aorta or iliac arteries; however, they can even arise from the lower thoracic aorta or from the lumbar or mesenteric arteries.

Understanding the various arterial supply to kidney is important for surgeons, intervention radiologists and nephrologists.

On CT, Volume rendering (VR), maximum intensity projection (MIP), and multiplanar reformatted reconstruction (MPR) images may help demonstrate accessory or unexpected aberrant renal arteries.
CONCLUSION

- Careful searching for supernumerary renal artery is essential for complete embolization or any renal artery-related intervention.
REFERENCE

THANK YOU