CAIR Case of the Month

Case Courtesy of Dr. J.T. Gueterrez

Clinical information

- 32 year old female
- Previously healthy
- No relevant risk factors
- Non-smoker

Case timeline

Pre-procedure

-Left acute flank pain
-Neck pain
-Vision decreased
-No trauma
-ER: HTN MAP(116)
-Blood tests normal
-Creatinine: 85
-Imaging studies

Procedure

Post-procedure

-Follow
-Discharge
-Control images

Pre-procedure (CTA head)

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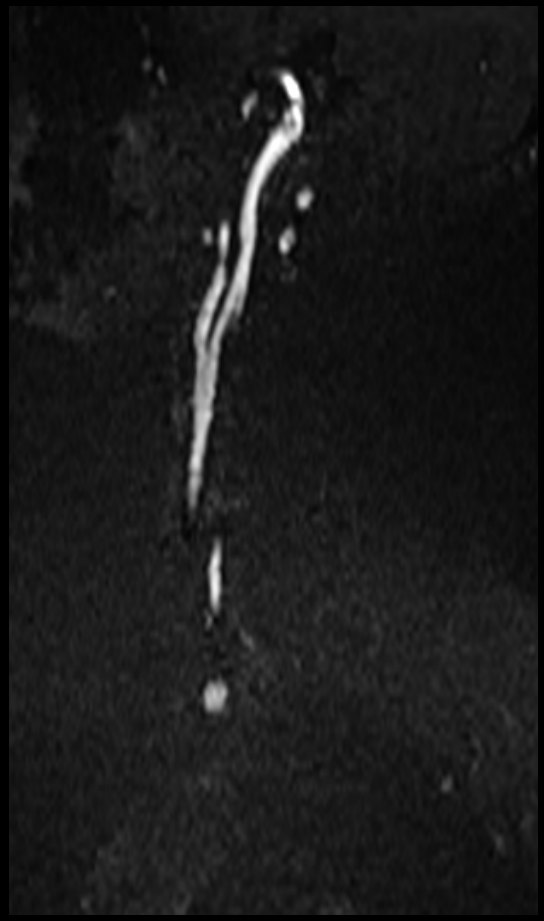
Pre-procedure (MRA neck)



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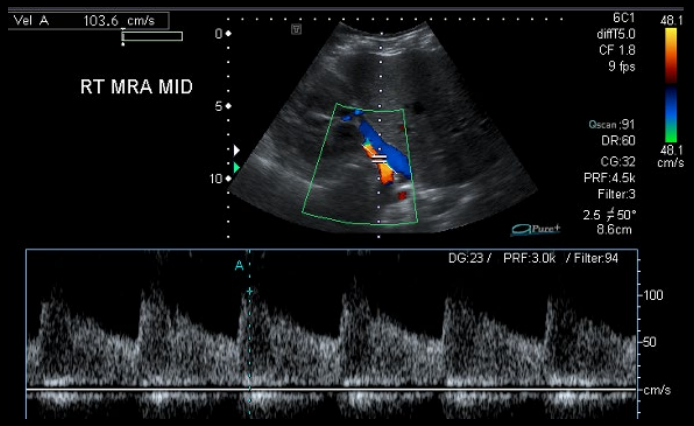
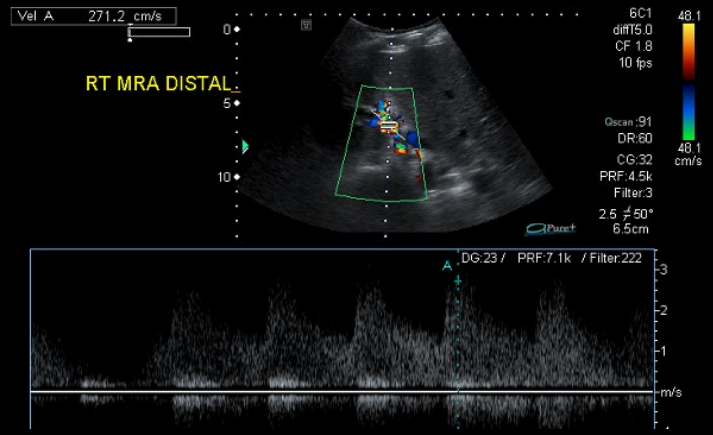
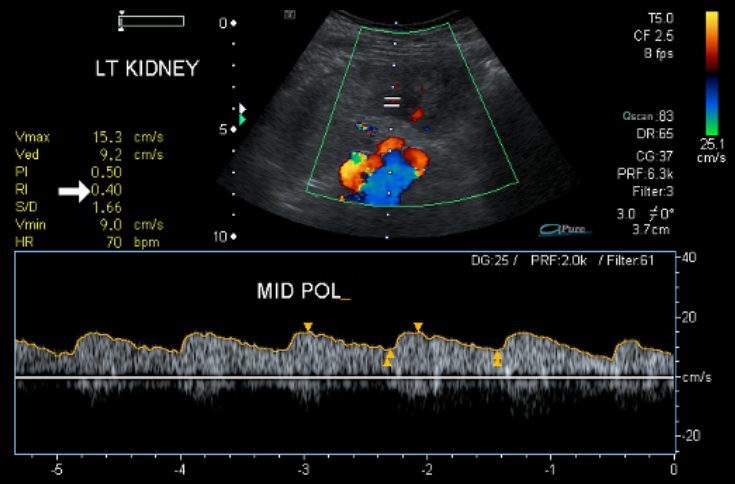
Pre-procedure

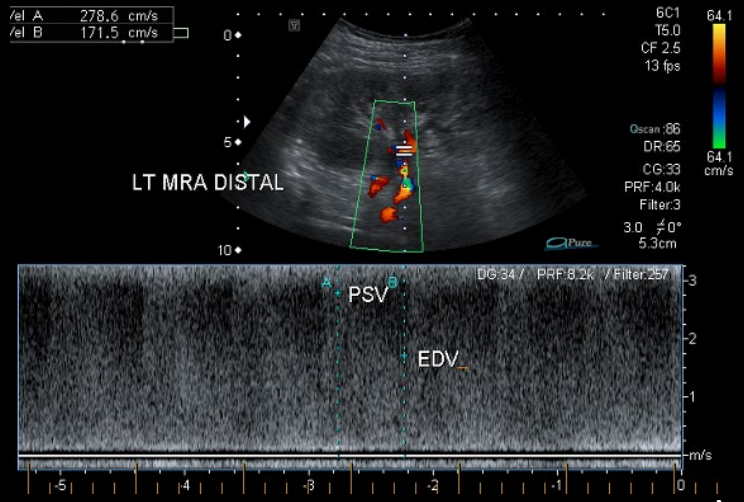
R kidney:





L kidney:





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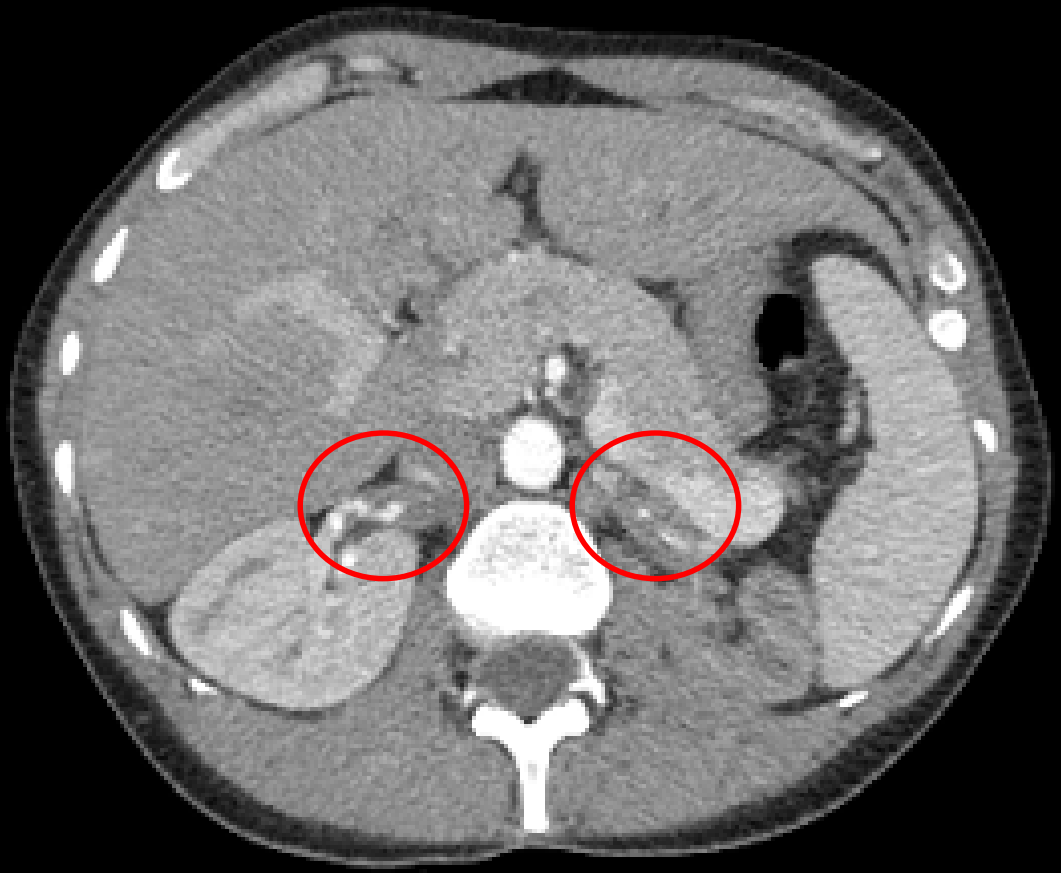
Pre-procedure (CTA abdomen)



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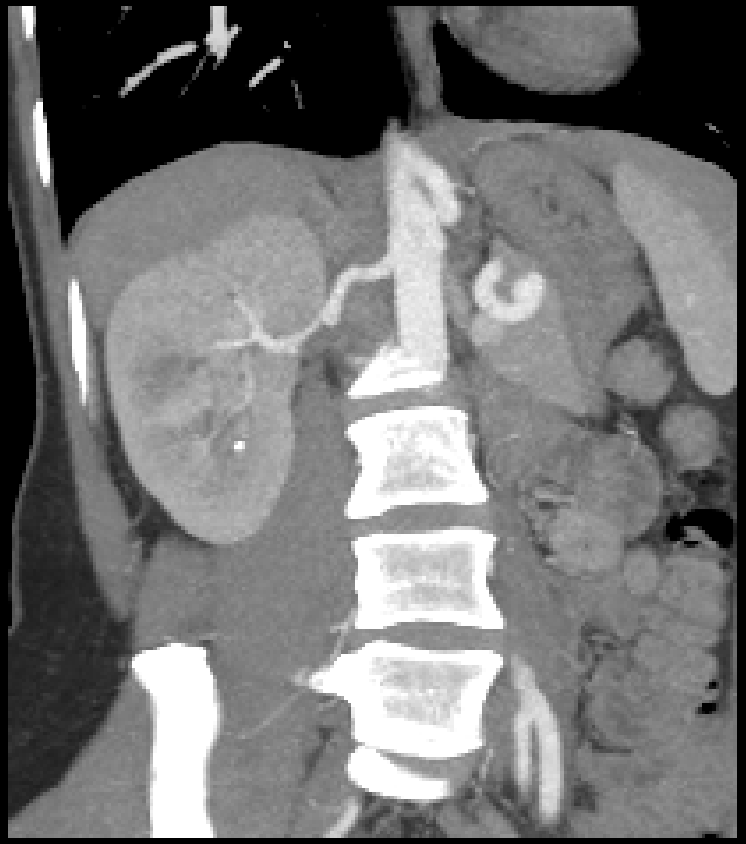
Pre-procedure (CTA abdomen)



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Pre-procedure (CTA abdomen)

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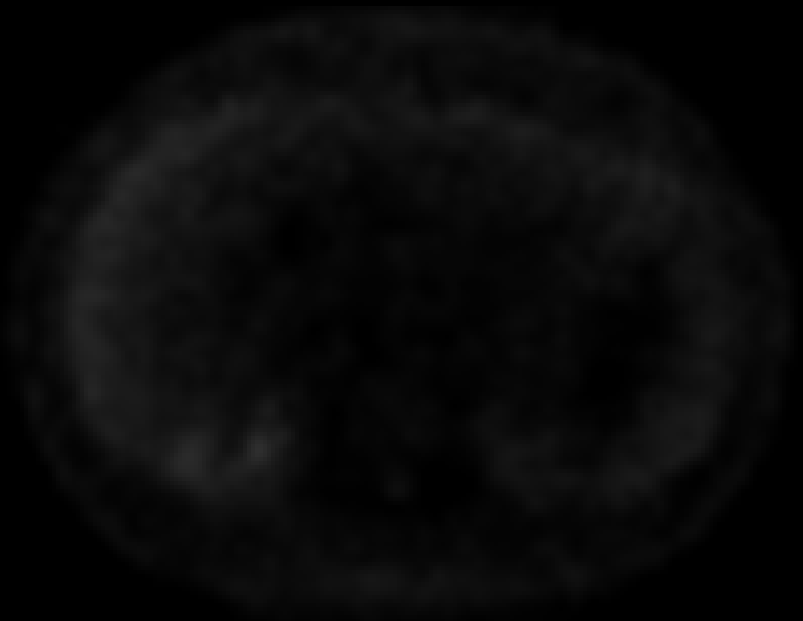
Pre-procedure (PET-CT)

- Questionable vasculitis
  - Takayasu arteritis, Elher-Danlos syndrome and Marfan syndrome ruled out
- p-ANCA,c-ANCA negative



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Pre-procedure summary

- Young female patient, acute abdominal pain, arterial hypertension, neck pain and visual symptoms
- Beaded appearance of the vertebral and iliac arteries
- Dissected right internal carotid artery
- Bilateral renal artery stenosis with abnormal surrounding soft tissue

Procedure

Procedure

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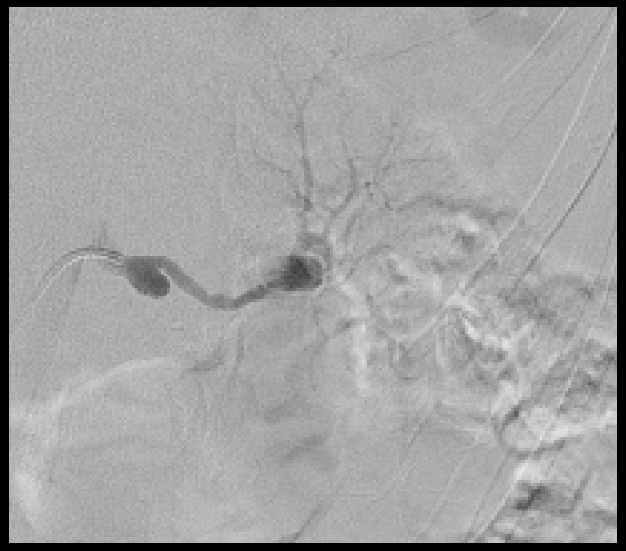
Procedure

Pre-angioplasty



Post-angioplasty

Procedure summary

- Bilateral dissection of both renal arteries with stenotic and aneurysmal segments
- Beaded appearance, particularly on the left
- Perfusion defect in the lower pole of the left kidney
- Successful angioplasty

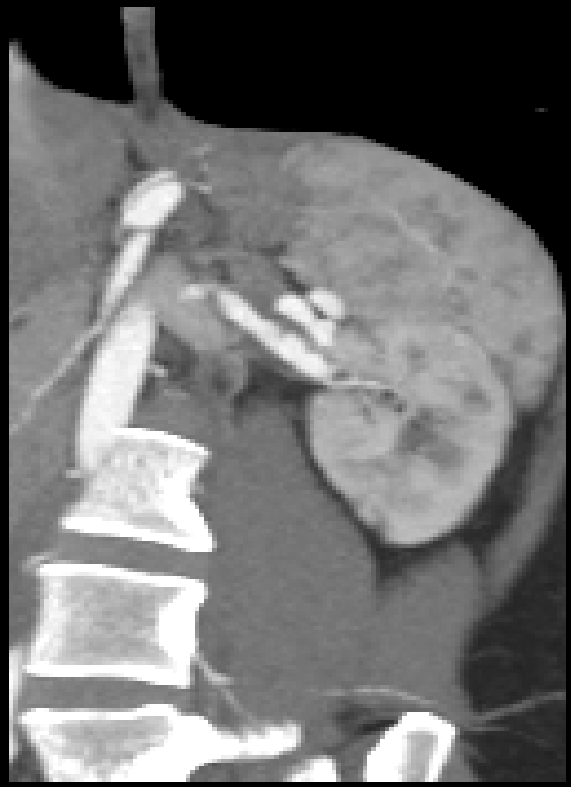
Post-procedure

- Blood pressure improved
  - MAP (85)
- Anti-hypertensive meds reduced and eventually withdrawn
- Discharged
- Continues ASA and warfarin

Follow-up CT (3 months later)

Before

Now



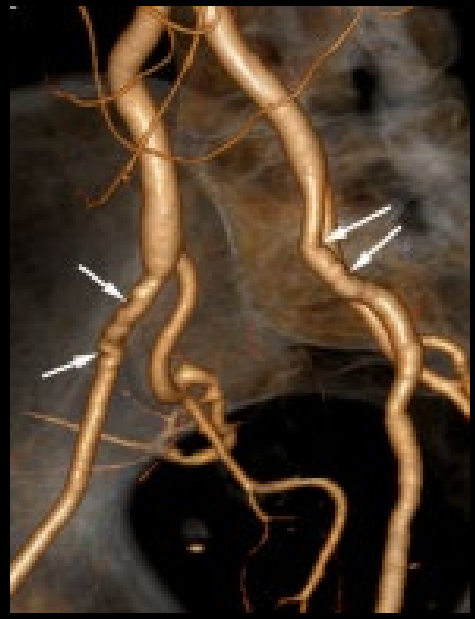
FMD discussion

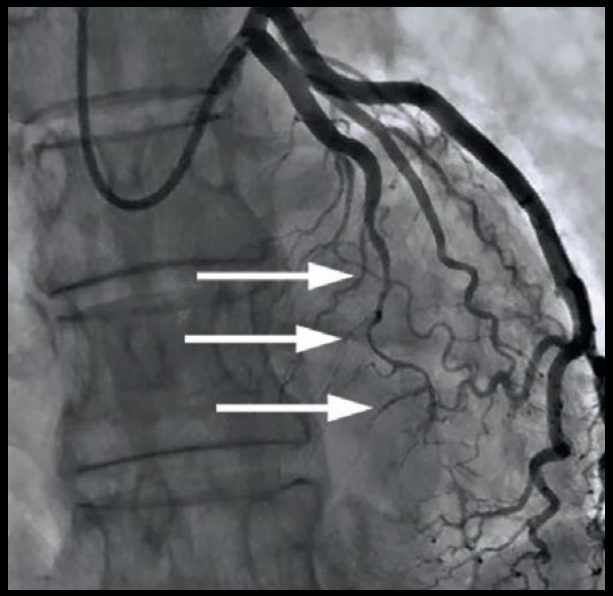
- Non-inflammatory, non-atherosclerotic arteriopathy
- Unknown etiology
- Affects medium sized arteries
- Fibrous tissue formation in the arterial wall leading to narrowing
- 4.3% have renal artery aneurysms
- 5.6% have renal artery dissections

FMD discussion

- Common in renal, carotid and vertebral arteries
- Risk factor: smoking
- Angioplasty is the treatment of choice

FMD

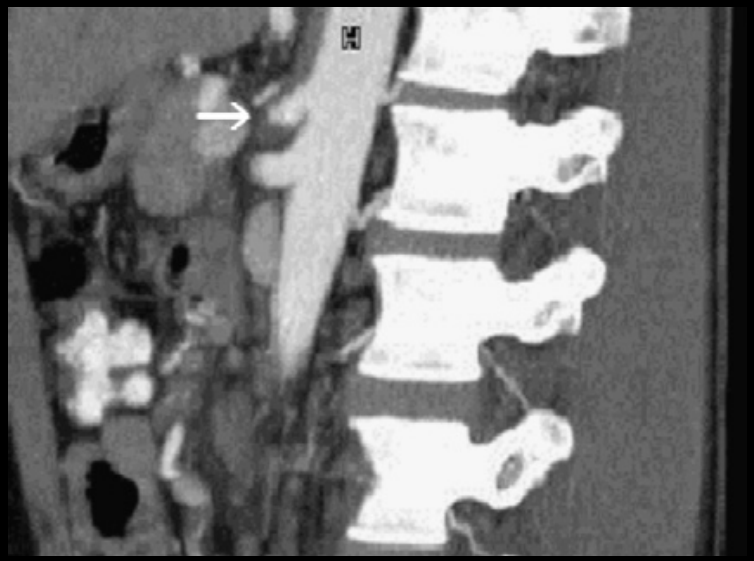


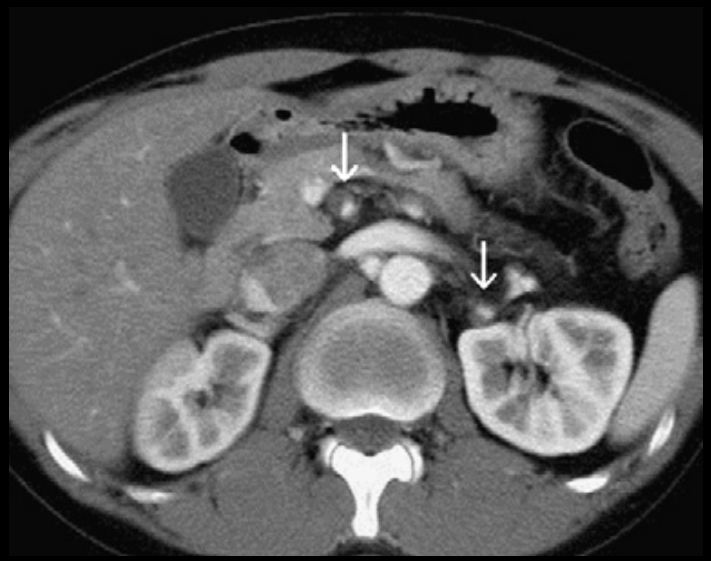


Kadian-Dodov, D. et al. J Am Coll Cardiol. 2016;68(2):176–85.

FMD

- Any artery may be involved





Ann Vasc Surg 2011; 25: 838.e9-838.e11

FMD - dissection

- 19.7% have dissections
  - 75% carotid artery
  - 22% renal artery
  - 17% vertebral artery
- Renal artery dissection may cause renal infarction

Circulation. 2012 Jun 26;125(25):3182-90

Conclusion

- FMD can be symptomatic, especially with dissection or ischemia
- FMD predominantly affects medium-caliber arteries but can affect large-caliber arteries
- FMD can cause both aneurysm and dissection
- With acute abdominal pain, new HTN, neurological symptoms must consider vascular lesion
- FMD responds very well to angioplasty

References

- Circulation. 2012 Jun 26;125(25):3182-90.
- Ann Vasc Surg 2011; 25: 838.e9-838.e11.
- Kadian-Dodov, D. et al. J Am Coll Cardiol. 2016;68(2):176–85
- Varennes L, Tahon F, Kastler A et-al. Fibromuscular dysplasia: what the radiologist should know: a pictorial review. Insights Imaging. 2015;6 (3): 295-307

Ann Vasc Surg 2011; 25: 838.e9-838.e11