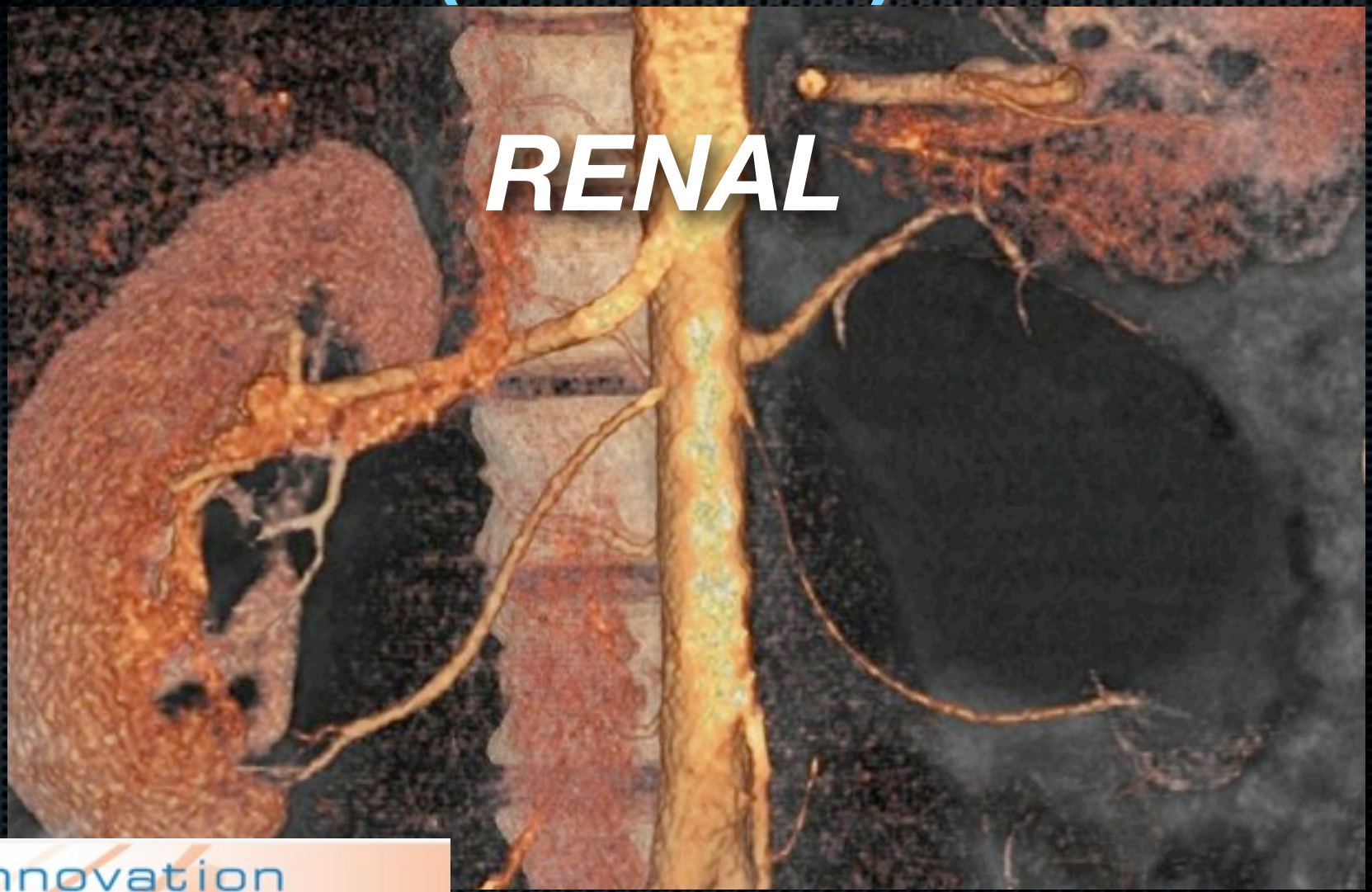
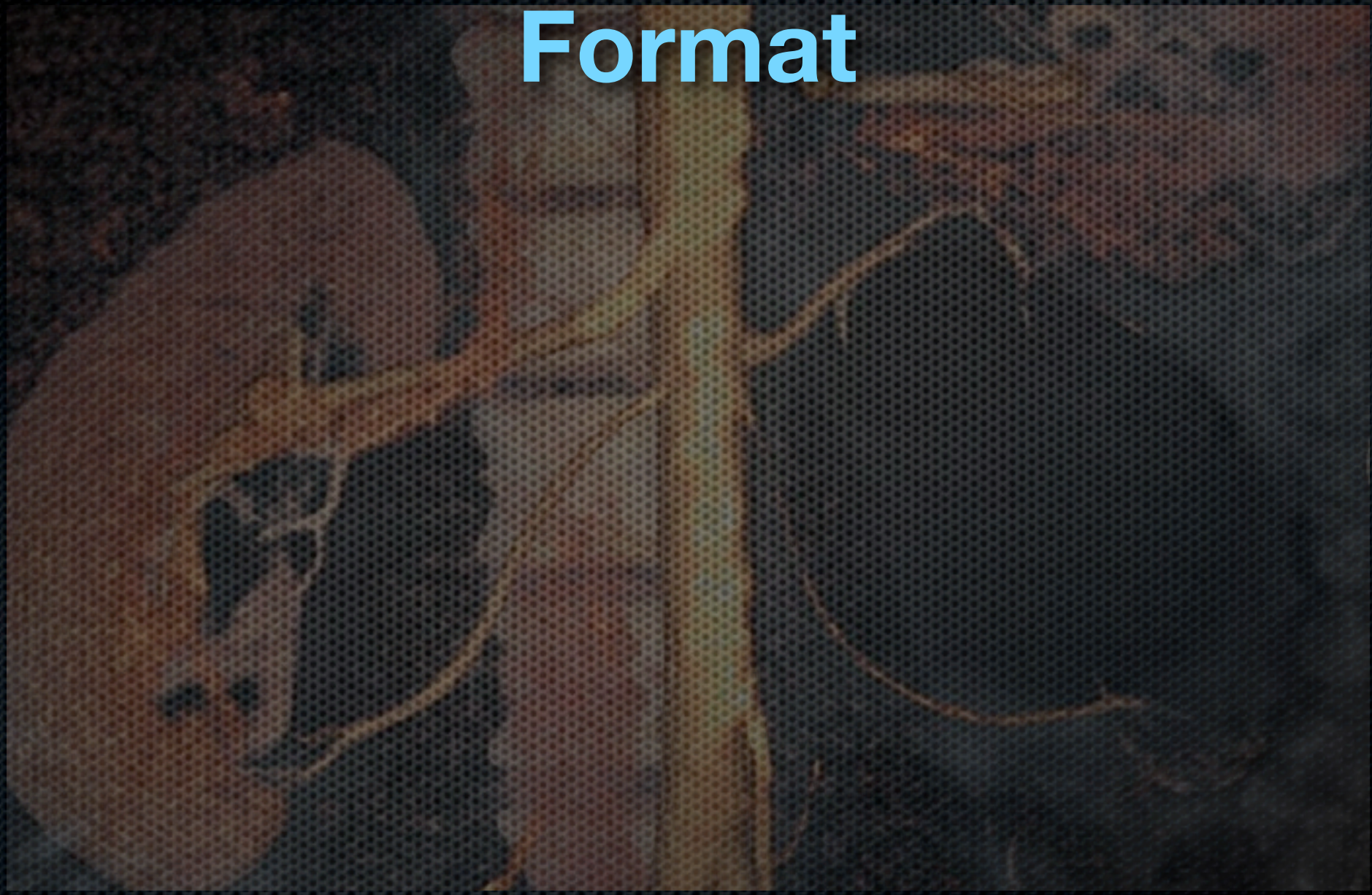
CTA, MRA, and CARDIAC IMAGING (Hands On)



IRinnovation
Society of Interventional Radiology
35th Annual Scientific Meeting
March 13 - 18, 2010 • Tampa, FL

Tampa, FL March 2010

Format



Format

I. Case Examples

- TIP from each case

Disclosures: None

NOTE:

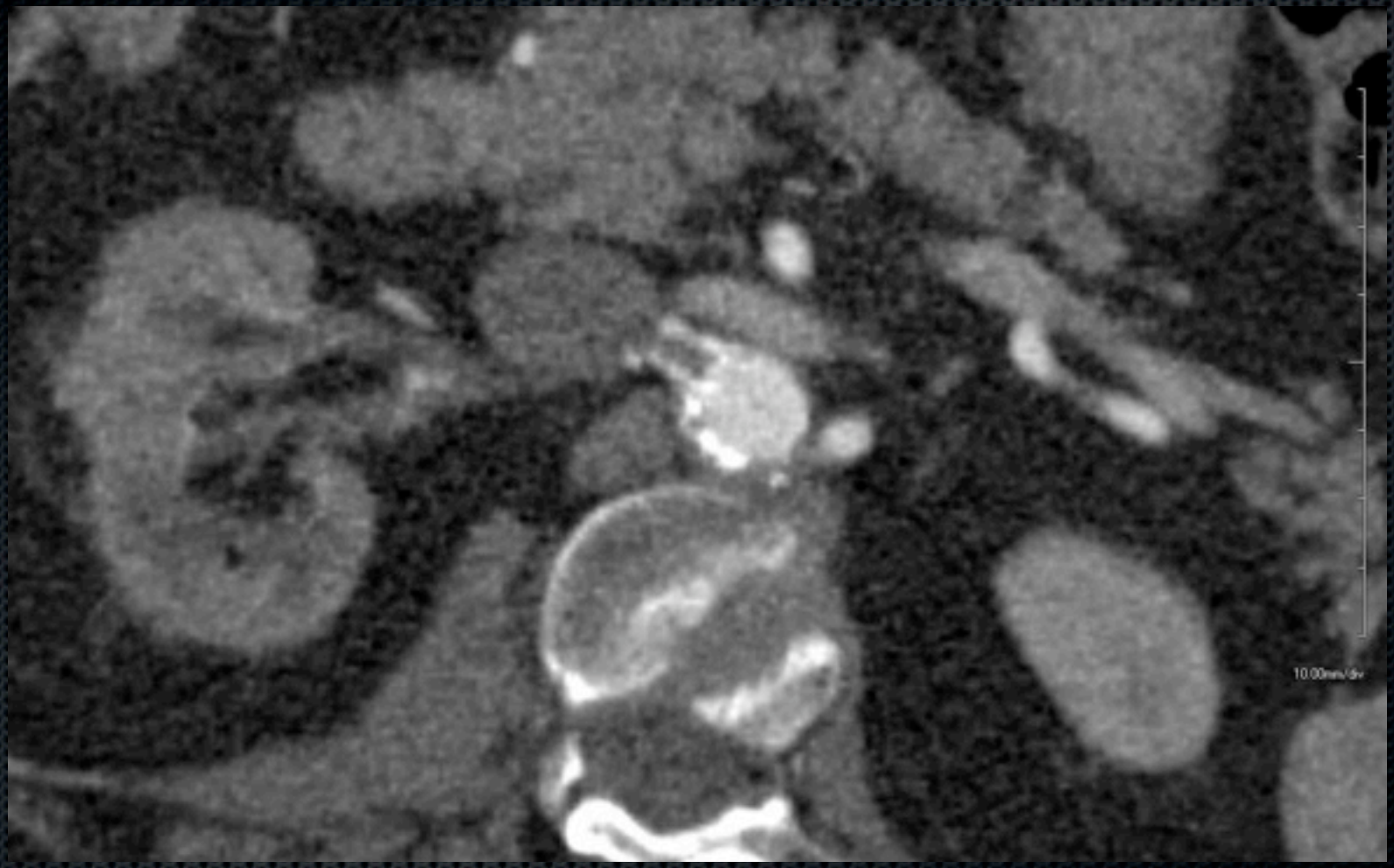
Full Syllabus Article on CD

PDF of Lectures available at:

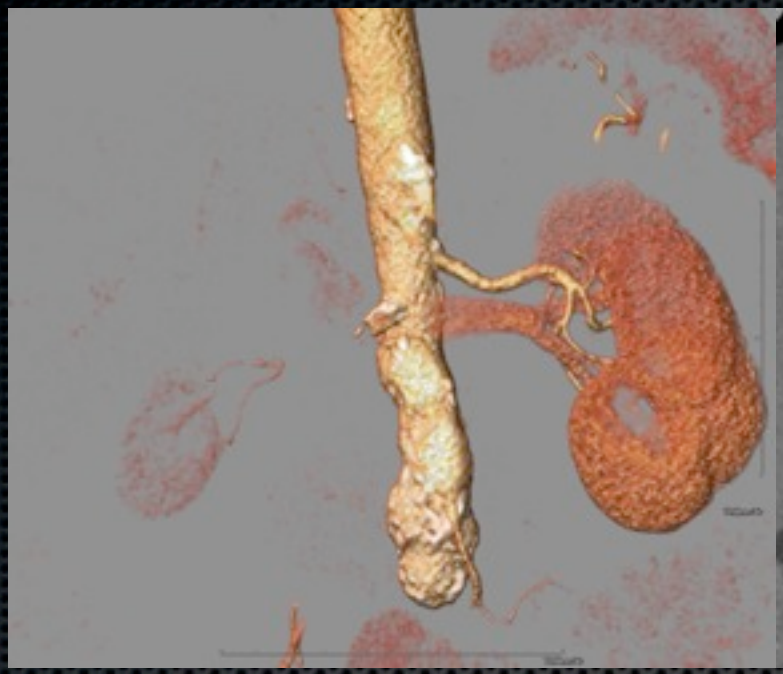
stanford.edu/~hallett/SIR2010

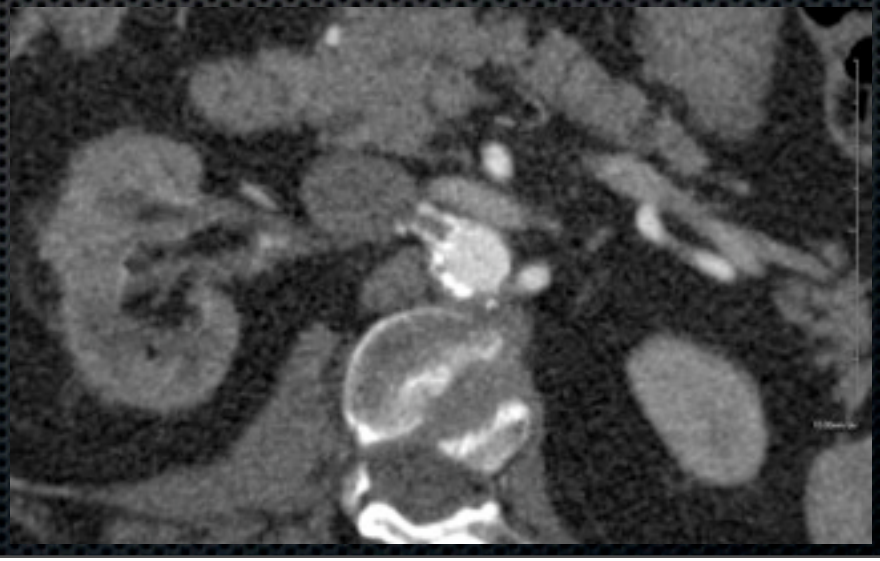
Case 1. s/p R renal stent, recurrent HTN

CTA

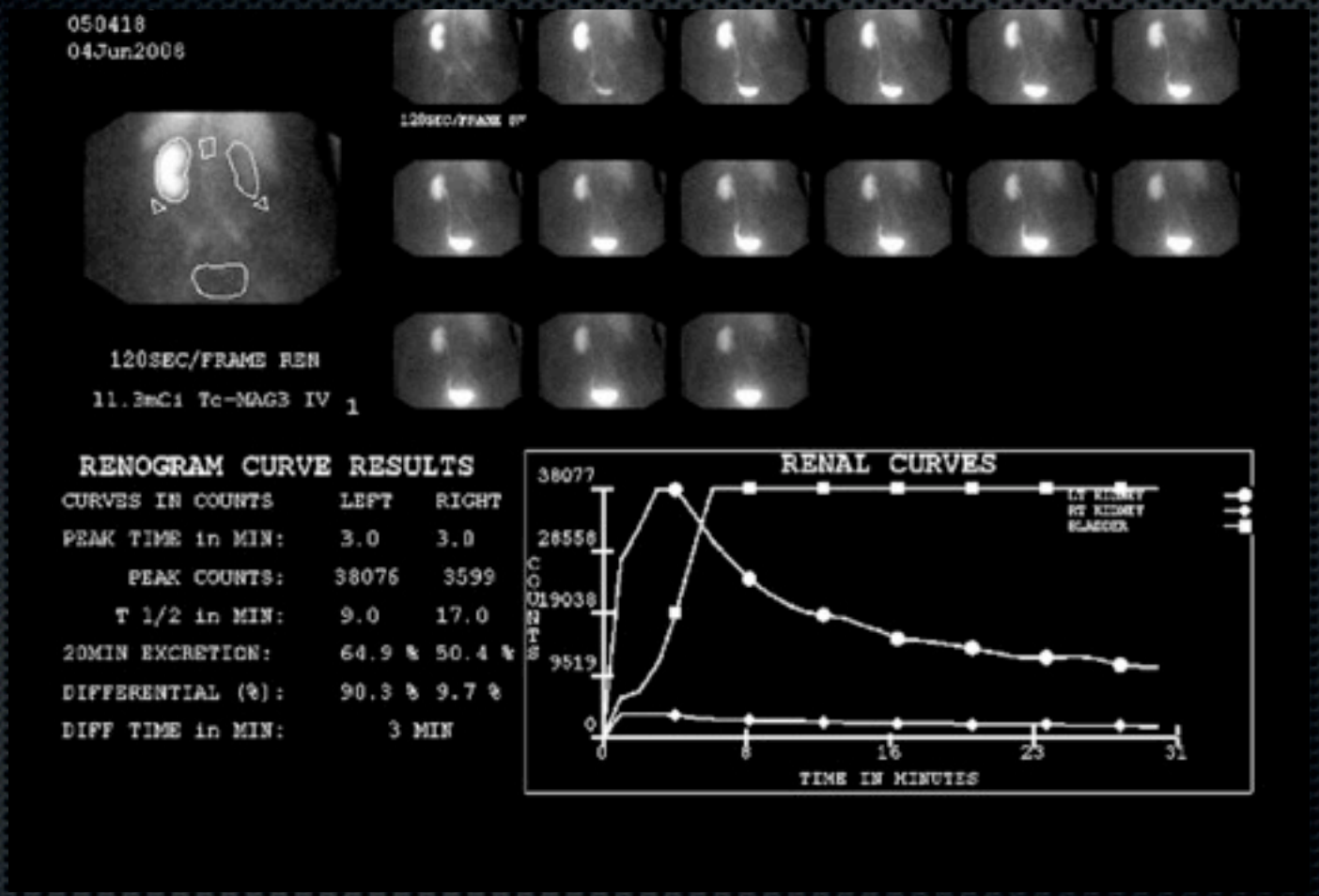


CTA





TC-MAG3 RENAL SCAN



TIP:

Pay attention to collateral flow in setting of renal artery occlusions; NUCs may be useful to determine contribution to total renal function by the affected kidney.

Case 2. 45 YO F
Prev (non-IR) stenting

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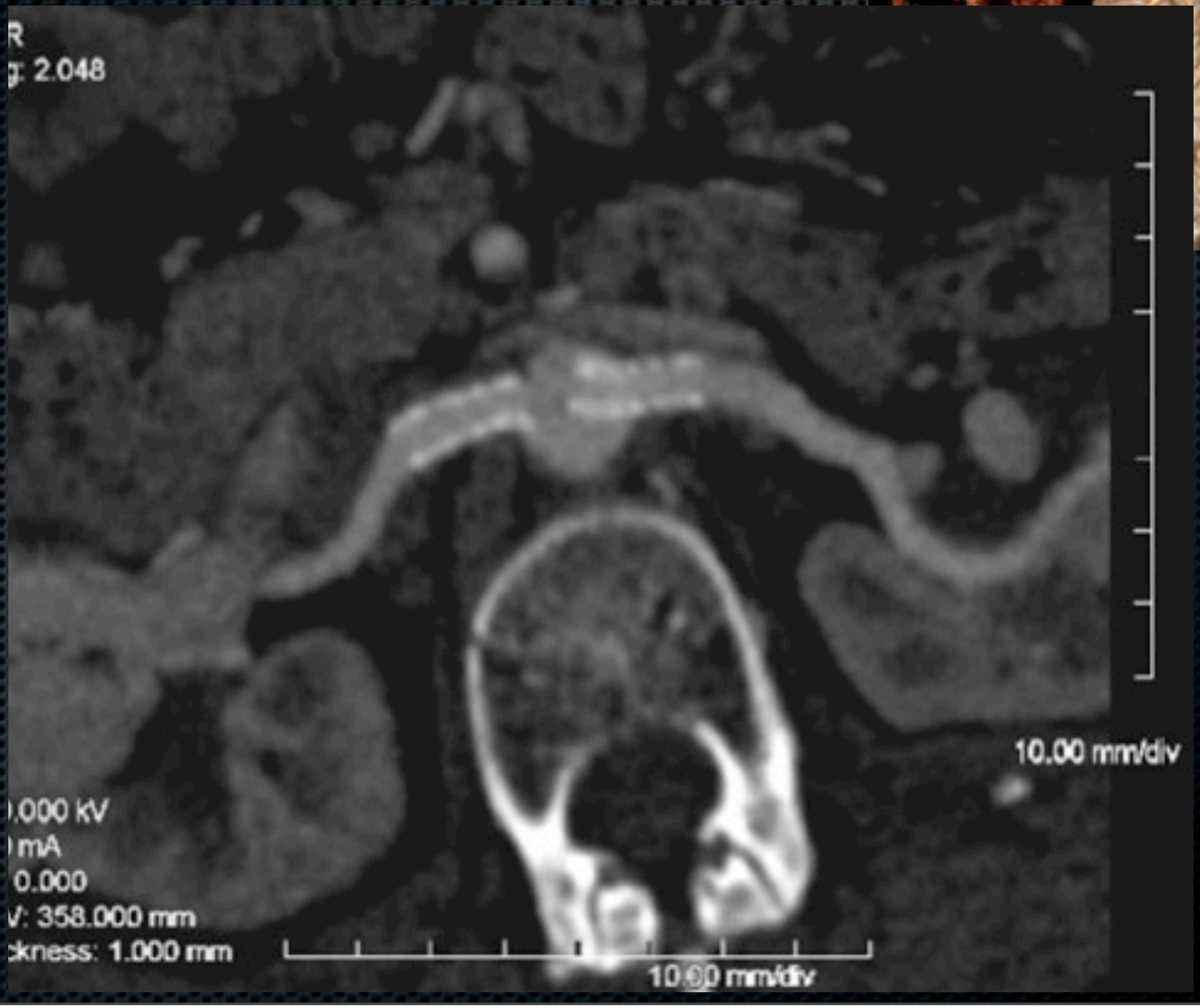
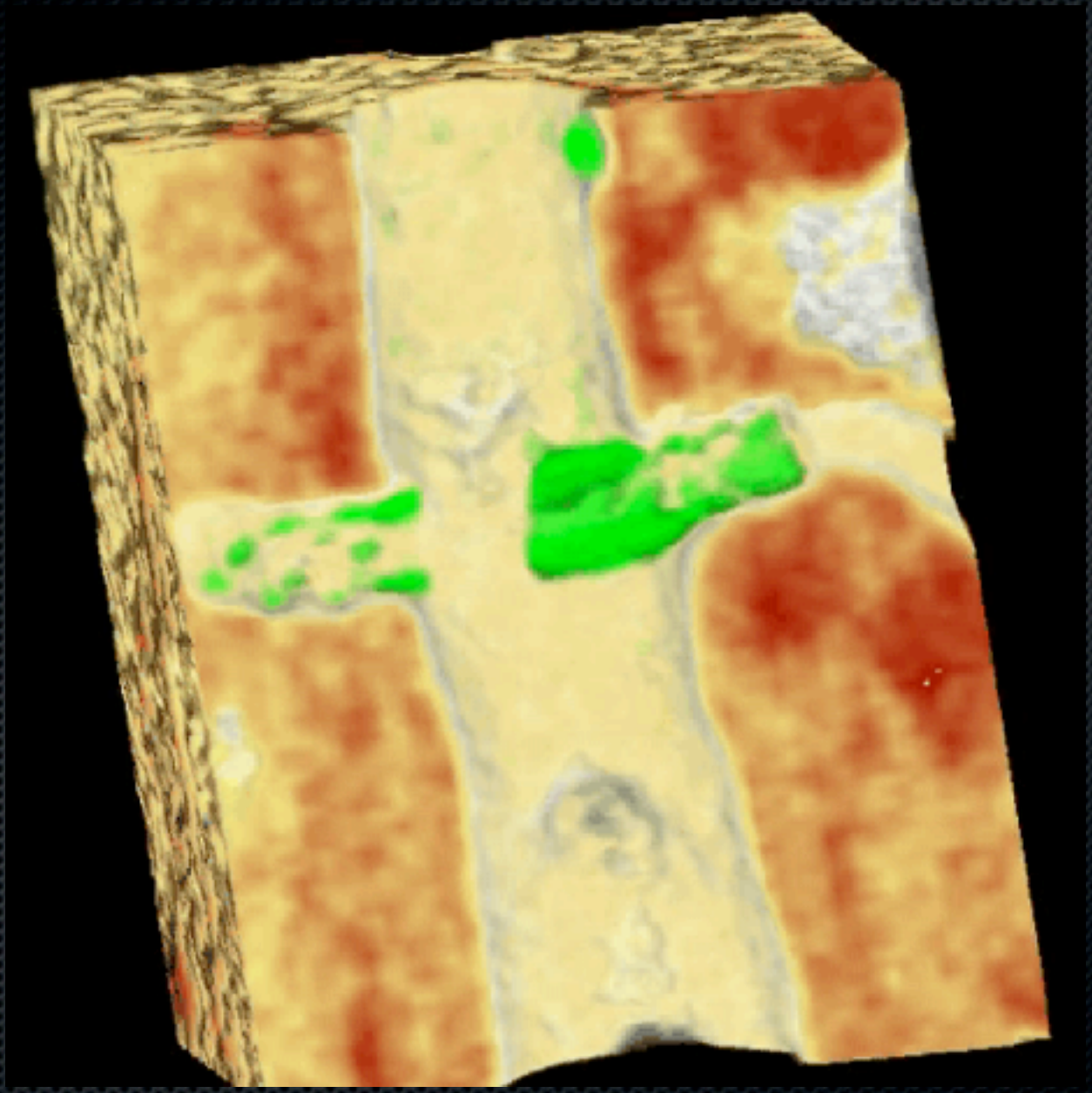
Prev (non-IR) stenting





TIP:

One can use CTA to calculate the angle needed to optimally visualize lesions angiographically.

CTA for Stented RAS

- Behar, 2002[1]: Stent patency well assessed, but tends to overestimate in-stent stenosis extent
  - 16-DCT
- Steinwender, 2009[2]: 100% NPV, 90% PPV for ISR>50%
  - 64-DCT; with cath correlation on all pts
  - All ISR correctly classified
  - Coronal CPR w/ edge-enhancing high spatial resolution kernel (B46f) best to visualize stents

[1]AJR 2002; 178:1155-1159
[2]Radiology 2009; 252:299-305

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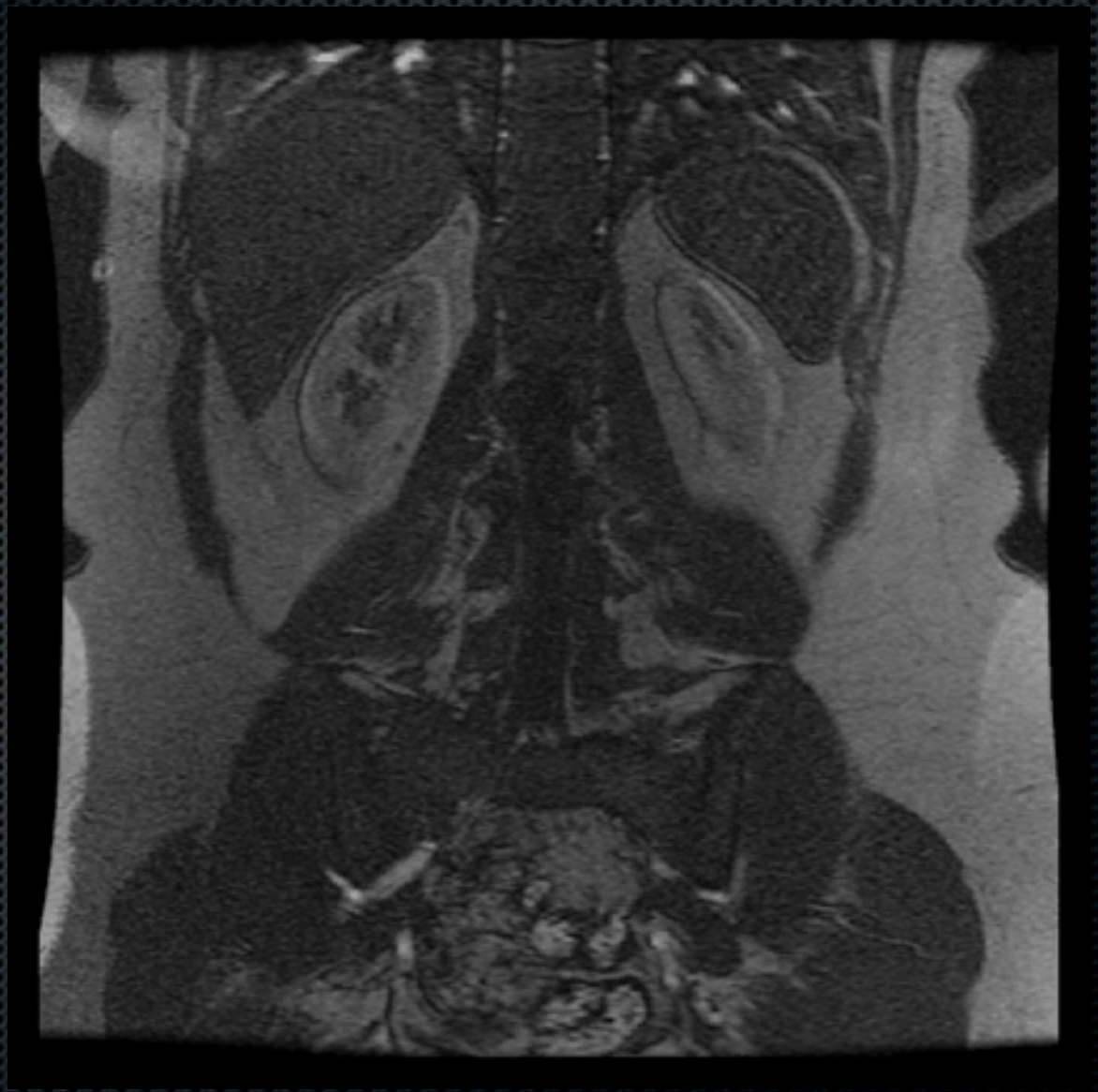
Case 3: 42 YO Female with HTN



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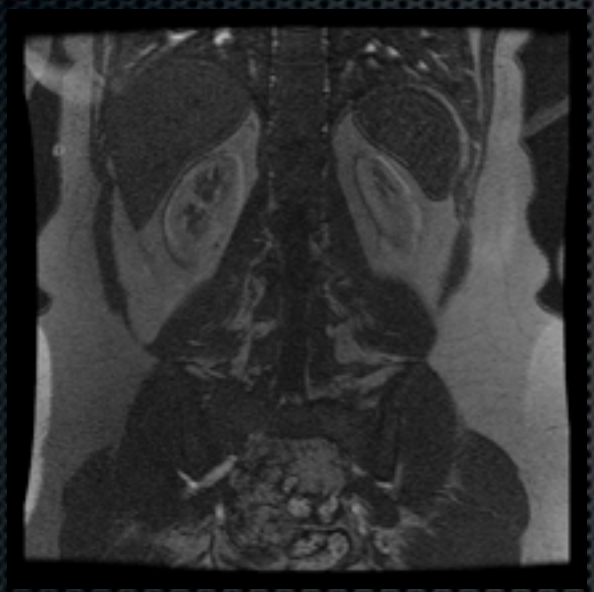

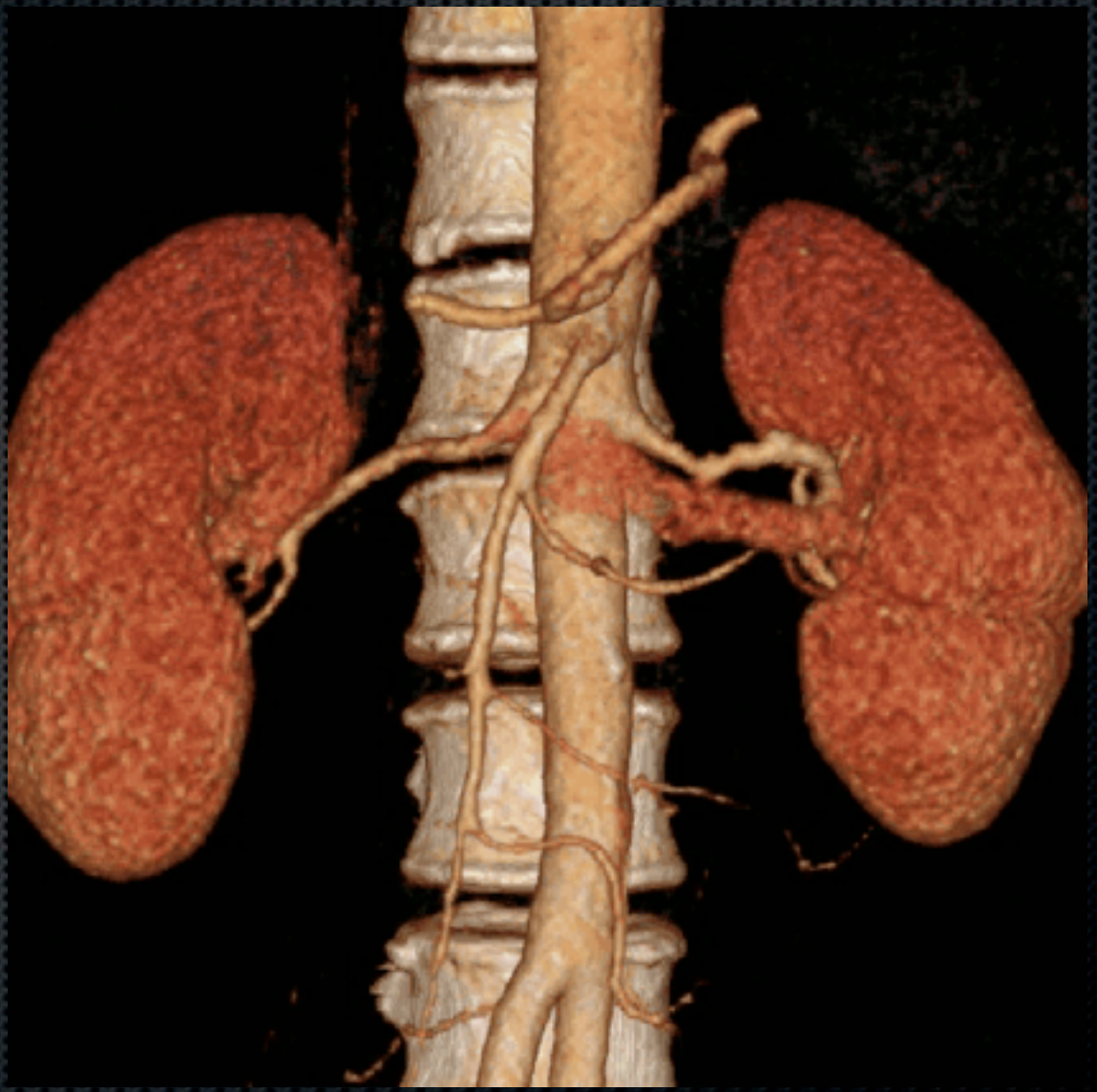

TIPS:

CTA has spatial resolution that is 3-10 fold better than well done MRA, BUT:

MRA can measure flow, significance (Phase Contrast)

Sensitivity for subtle webs and stenoses of FMD is better, BUT:

Catheter Angio may still be necessary (pressure measurements)

Case 4: 18 YO Male w/ HTN Hx. inherited endocrinopathy

Case 4: 18 YO Male w/ H
Hx. inherited endocrinopa

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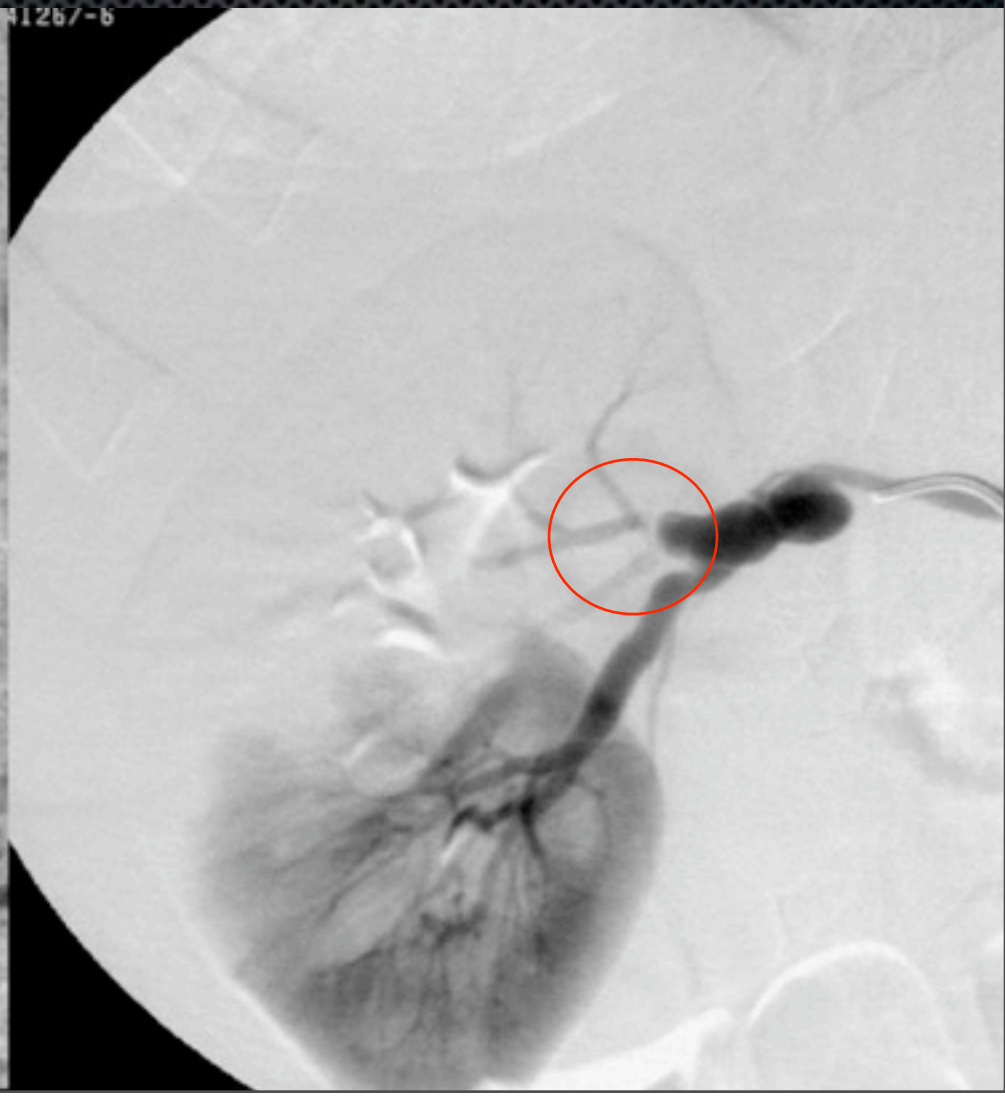
Hx. inherited endocrinopa

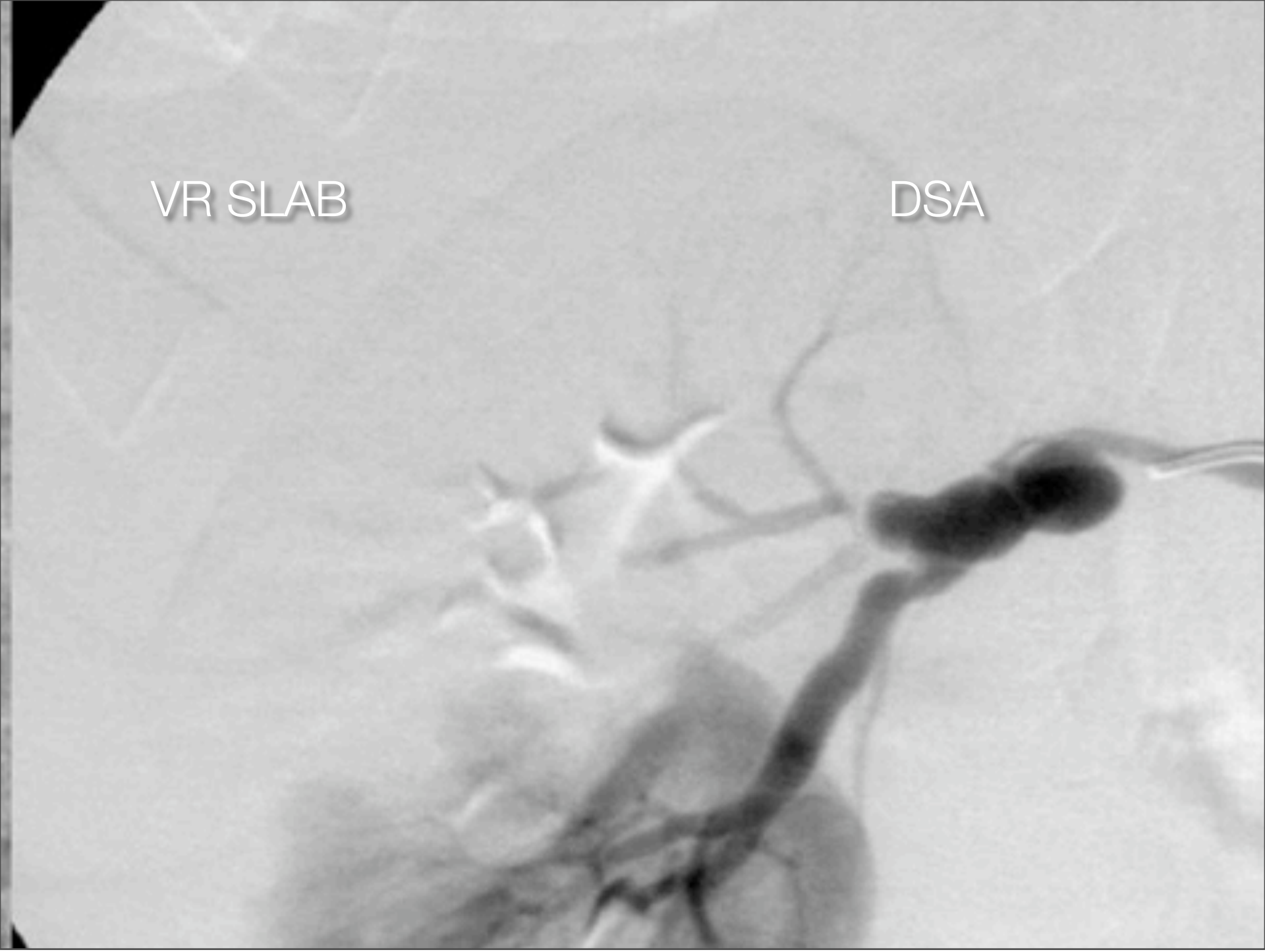
VR SLAB

DSA

VR SLAB

DSA



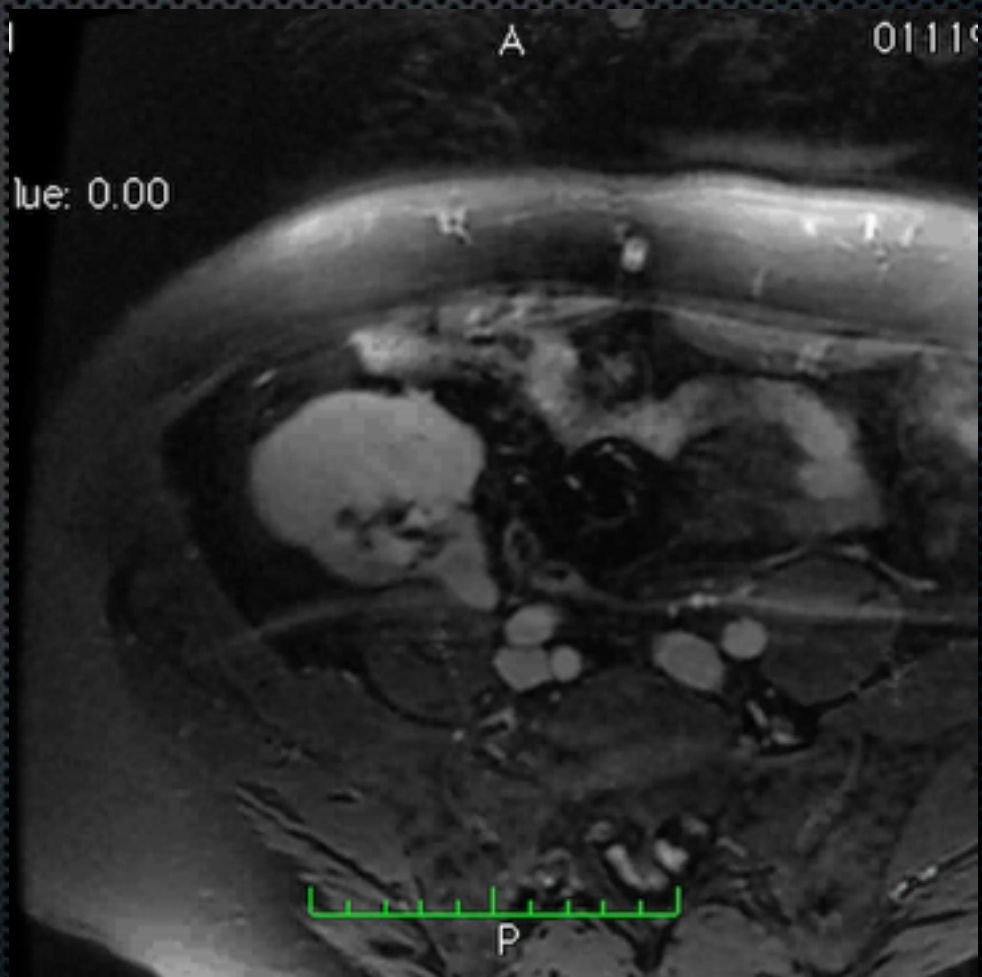

VR SLAB
DSA

TIPS:

Volume Rendering (VR) is an efficient way to convey a large amount of information in a rapid, easy to understand format.

Be aware of VR limitations

Case 5: 30 YO s/p renal Transplant, now w/ bruit and eGFR <30



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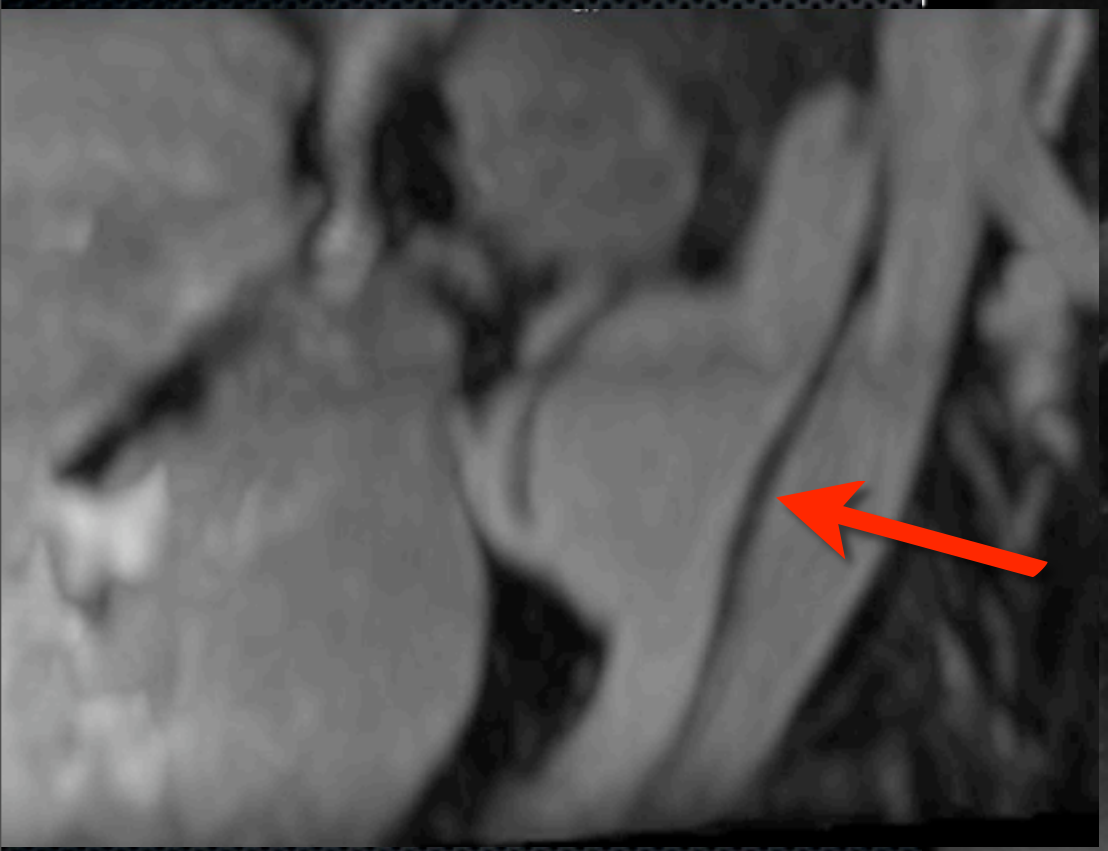

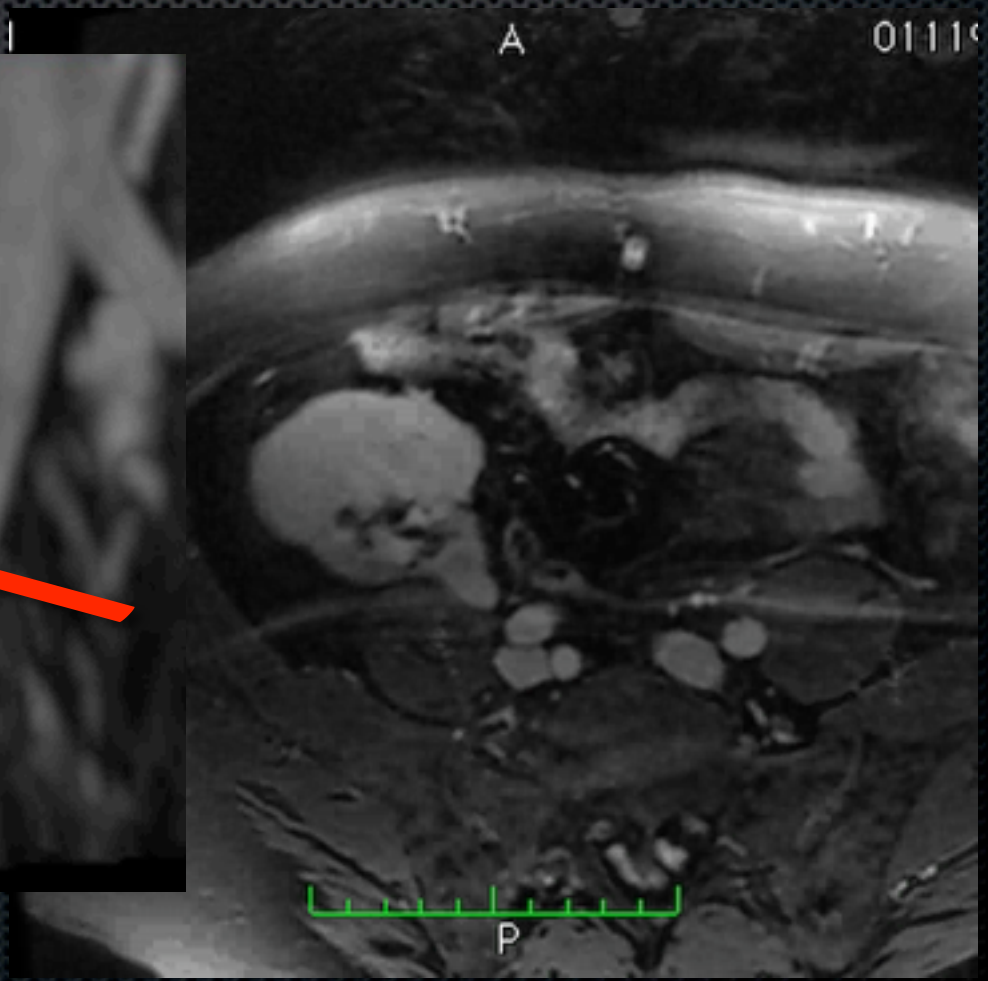

TIPS - Imaging Renal Transplants

- Anastamotic Pseudoaneurysms uncommon (~1%)
  - May be ASX, or compress artery / vein
  - Usually technical (vs infection)
- Non-con MRA techniques now available
  - GE-Slab, IFIR, etc

Thanks for Your Attention!!

Thanks to our Workstation Vendors!

Vital Images

TeraRecon

Philips

GE Medical Systems

Online Handouts from Lectures:

stanford.edu/~hallett/SIR2010