Consultant/Independent Contractor: Teleflex, MedComp, Cook, BD Bard, WL Gore

Royalty: Cook, Teleflex

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(Judicious) Endovascular Treatment of Central Vein Obstruction: The Gold Standard?

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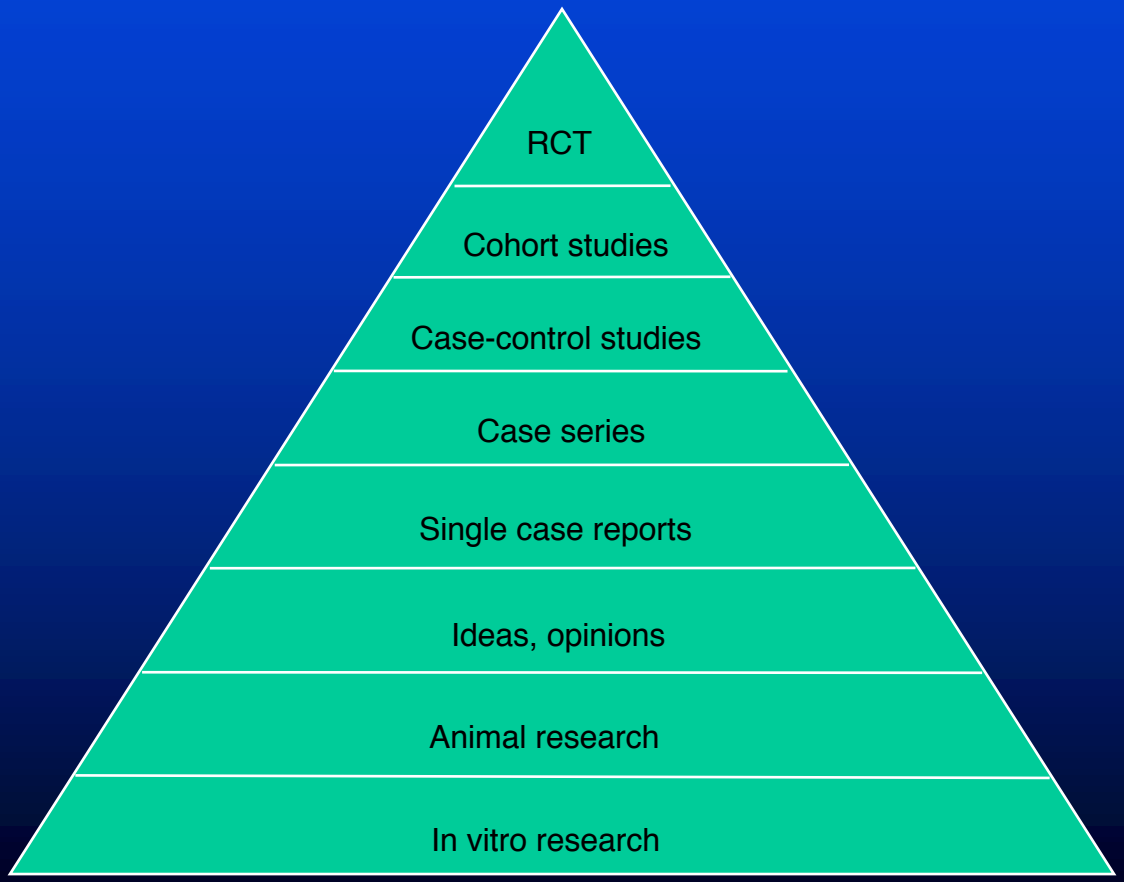
CVS: Long on opinion, Short on Evidence



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Gold Standard?

- Does not mean it's all we do
- Benchmark against which we measure

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“The CVS Eye Chart”

Prevent CVS

Avoid treating asx CVS

If must treat, use PTA liberally

Avoid stents if at all possible-use pressures

If pressures support stenting, weigh surgical options first

If stent MUST be used, use covered if possible (?)

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Prevention of CVS

- Venous preservation policy
- Never use subclavian vein
- Avoid prophylactic pacing
- Epicardial pacing if pacing needed (Fistula First)
  - TV pacing will be gone in <10y!
- In spite of this, still common
  - 50% prevalence in recent study*

*Trerotola et al, JVIR 2015;26:240-246

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Management of CVS

- Treat only symptomatic patients
  - face, arm, breast swelling
  - CVS generally does not affect access function
- PTA until it is no longer effective
  - 2 procedures in 3 month period (K/DOQI)
- Stent graft (not BMS)
- Surgical options
  - Flow reduction
  - Rib resection
  - Bypass

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PTA: Primary Treatment of Symptomatic CVS

- Treat only the lesion that accounts for sx
- PTA until it is no longer effective
- Use appropriate size balloons
- Prolonged PTA (5 min cycles) prn

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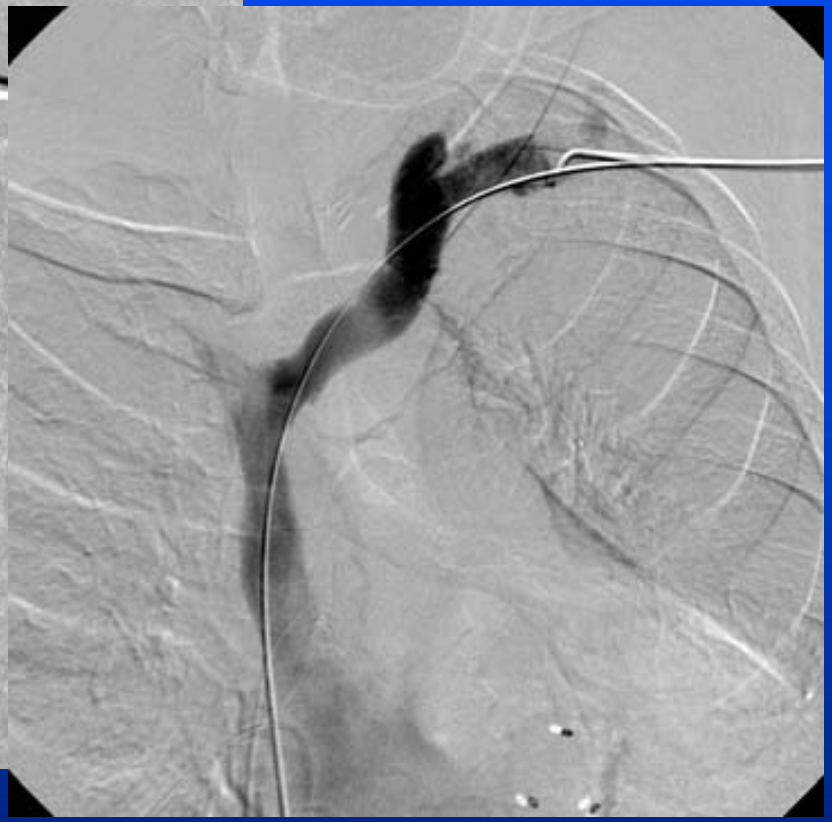
Arm swelling, LUA fistula

PTA 14 mm



PTA 16 mm

POBA: good results, need right tools and diligence, use adequate Ø balloons

-12-16 mm SCV

-14-18 mm BCV

Need not be perfect to get symptomatic relief

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PTA Works

- Prospective study, n=25
- PTA 92% technically successful
- Clinical success in 96%
- 58% recurrence at mean 110 days (range 7-459)
- PTA burns no bridges

Yan et al, JVIR 2015;26:984-991

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Stent-Grafts

- No RCT (yet)
- Heterogeneity of lesions in CVS
  - extrinsic comp-good use of SG
  - intimal hyperplasia-not yet known
  - cardiac rhythm devices-contraindicated
- Many downsides

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Selected Instances Where S/SG Undesirable

- Successful PTA
  - Virtually 100% if appropriate balloon size and technique such as prolonged PTA
- Proximity to desirable vessel (opposite BCV, ipsi IJ)
  - Common
- Location subject to trauma and fx
  - SCV, common
- Proper device size not available
  - Much less common now
- Cardiac rhythm device in place

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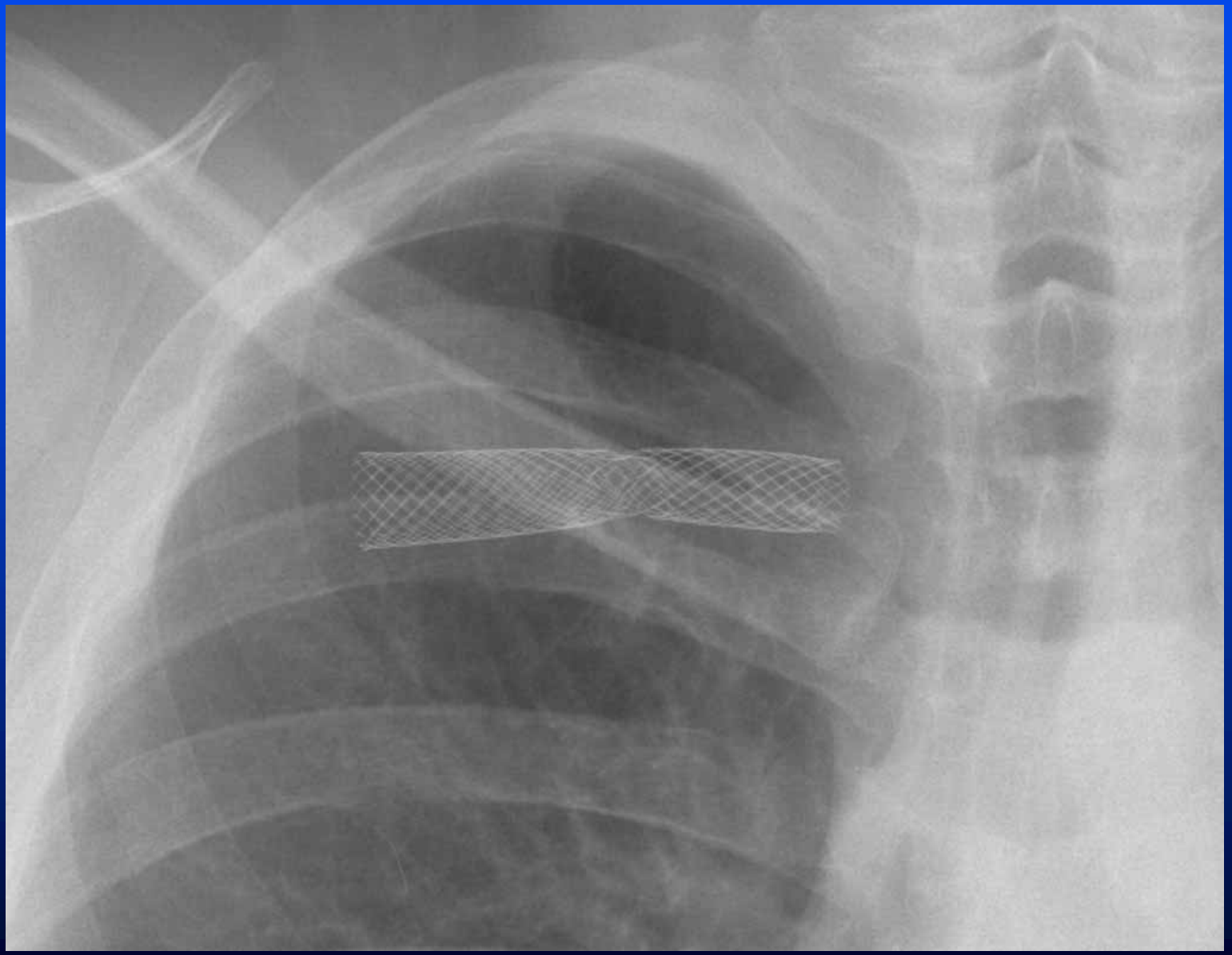

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(Patent LIJ)

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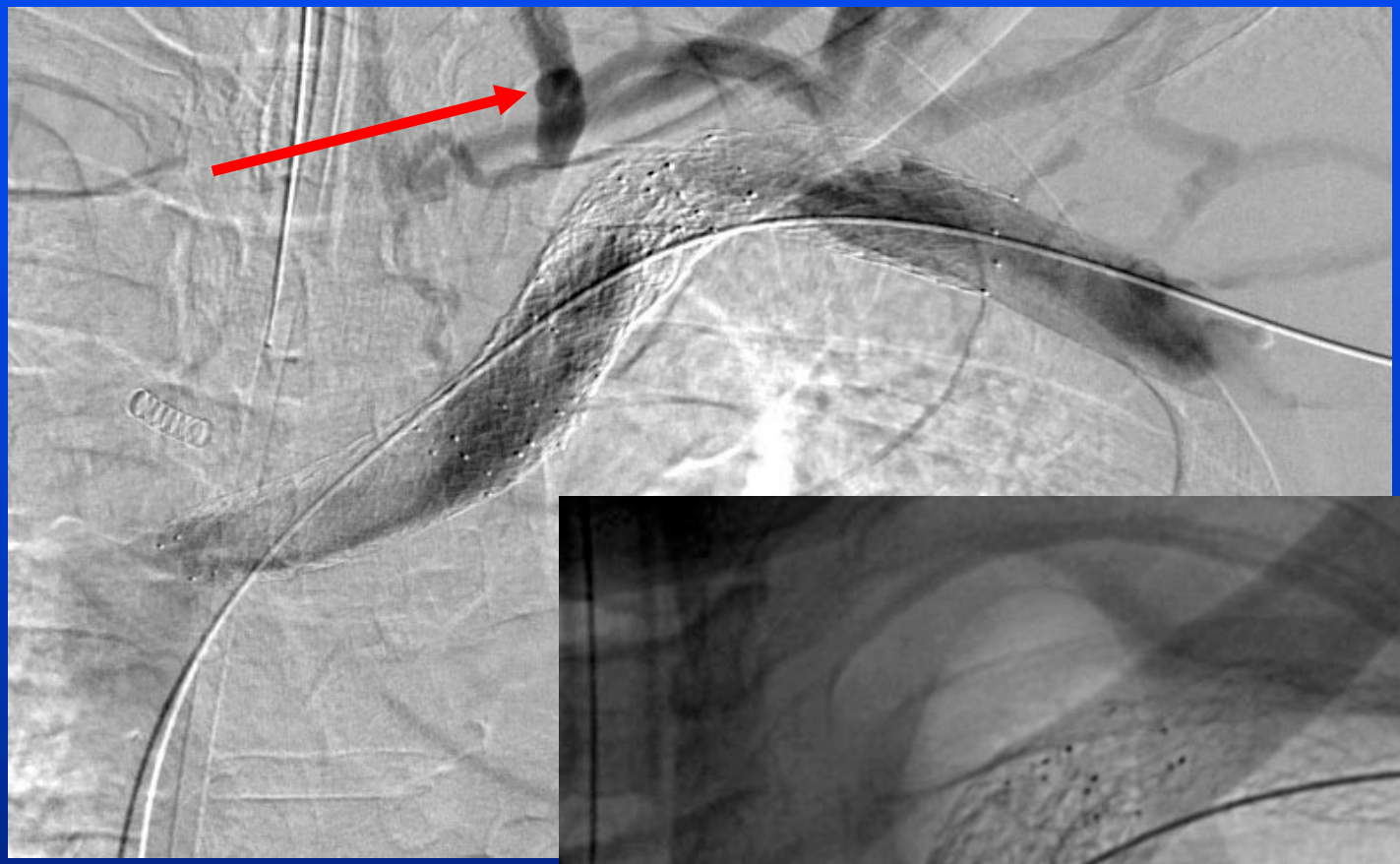
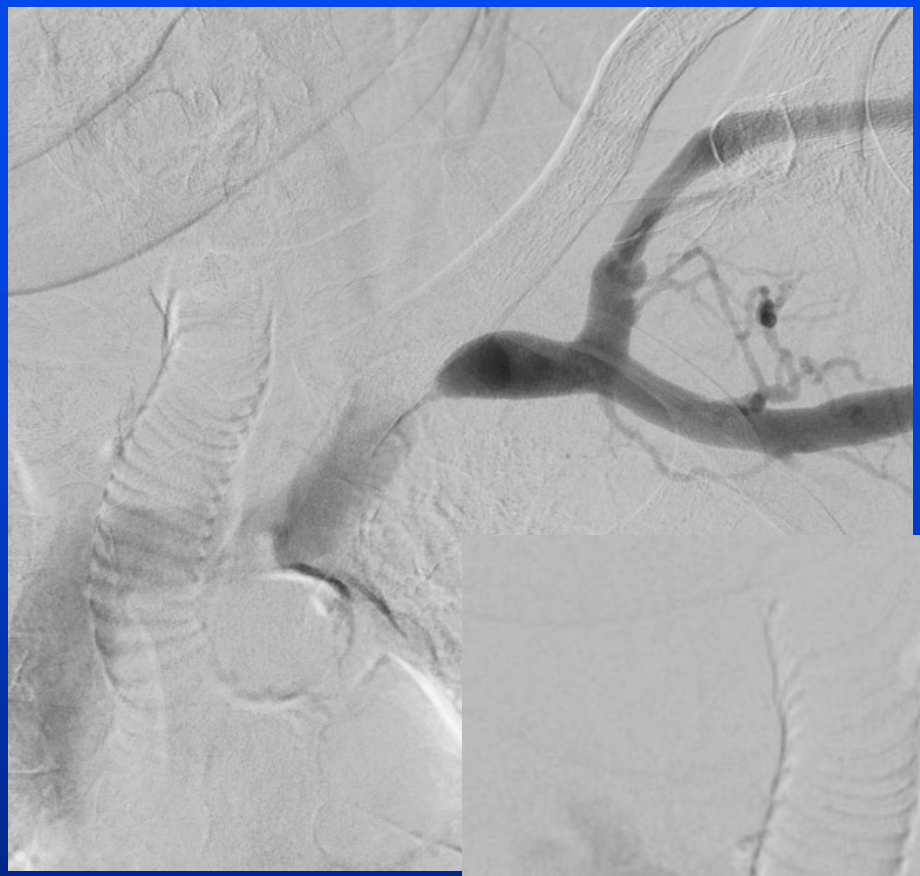
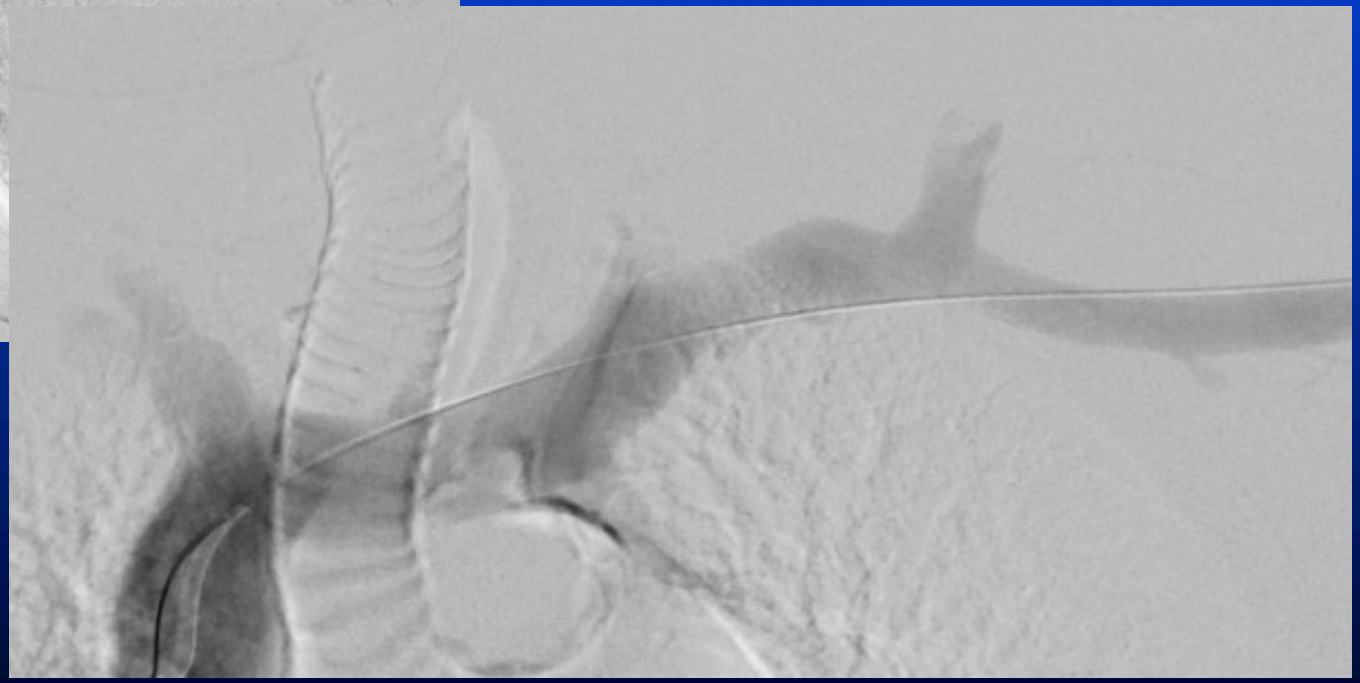


Patent LIJ



Good place for a stent? Or worse, a stent graft? LIJ patent and usable.



POBA

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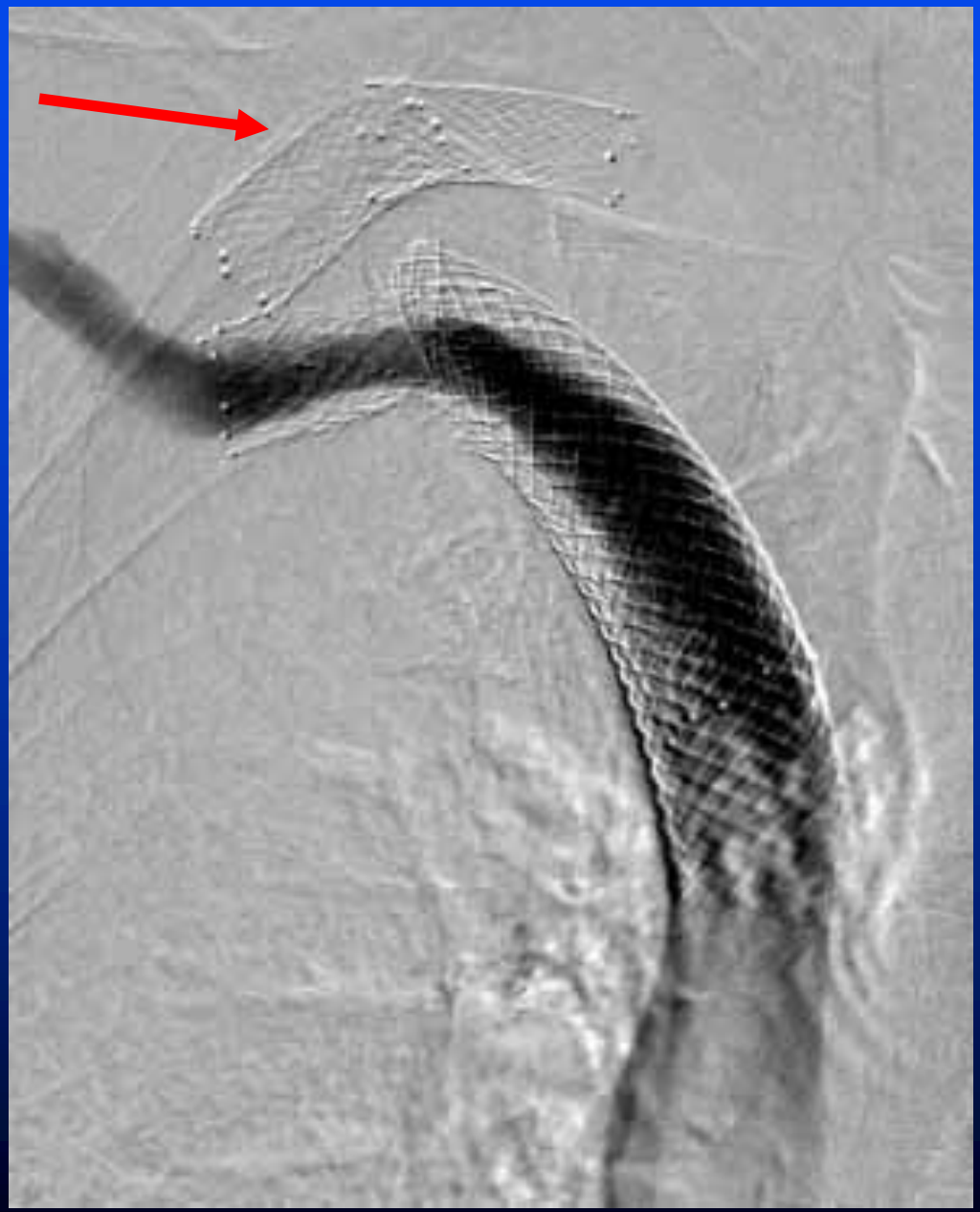
Where's that?



LBCV?

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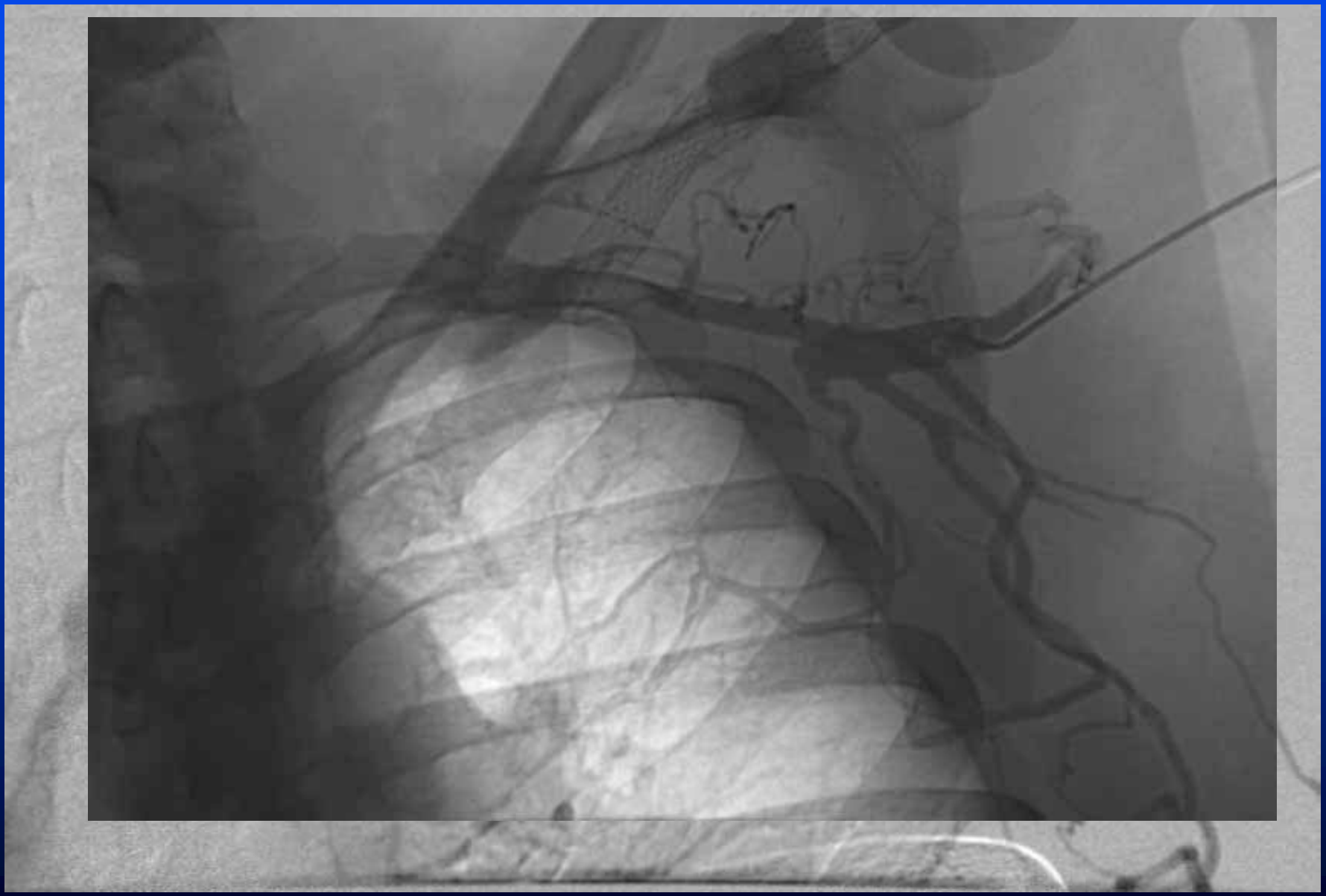
Stent or PTA?



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Selected Instances Where S/SG Desirable

- SYMPTOMATIC extrinsic comp LBCV
  - But RARE
- Rupture
  - RARE

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DCB in CVS?

- 1 RCT to date*
- RCT, n=40
- 19 AVF/21G
- Median intervention free patency better for DCB 179 vs 125 days P=0.026
- Why different endpoint than prior trials?
- DCB not indicated for ext comp/elastic recoil

*Kitrou et al, JVIR 2017;28:811-817

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Gold Standard?

- Benchmark – yes
  - starting point due to minimally invasive nature
  - PTA-good and reproducible results
  - DCB/SG – emerging data
- Like gold, alternatives exist that are equally or more valuable
  - doing nothing
  - flow reduction
  - decompression

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