

Why should every Primary Care Provider evaluate for PAD?

Satish Gadi, MD FACC FSCAI

Interventional Cardiologist, Cardiovascular Institute of the South (CIS), Baton Rouge

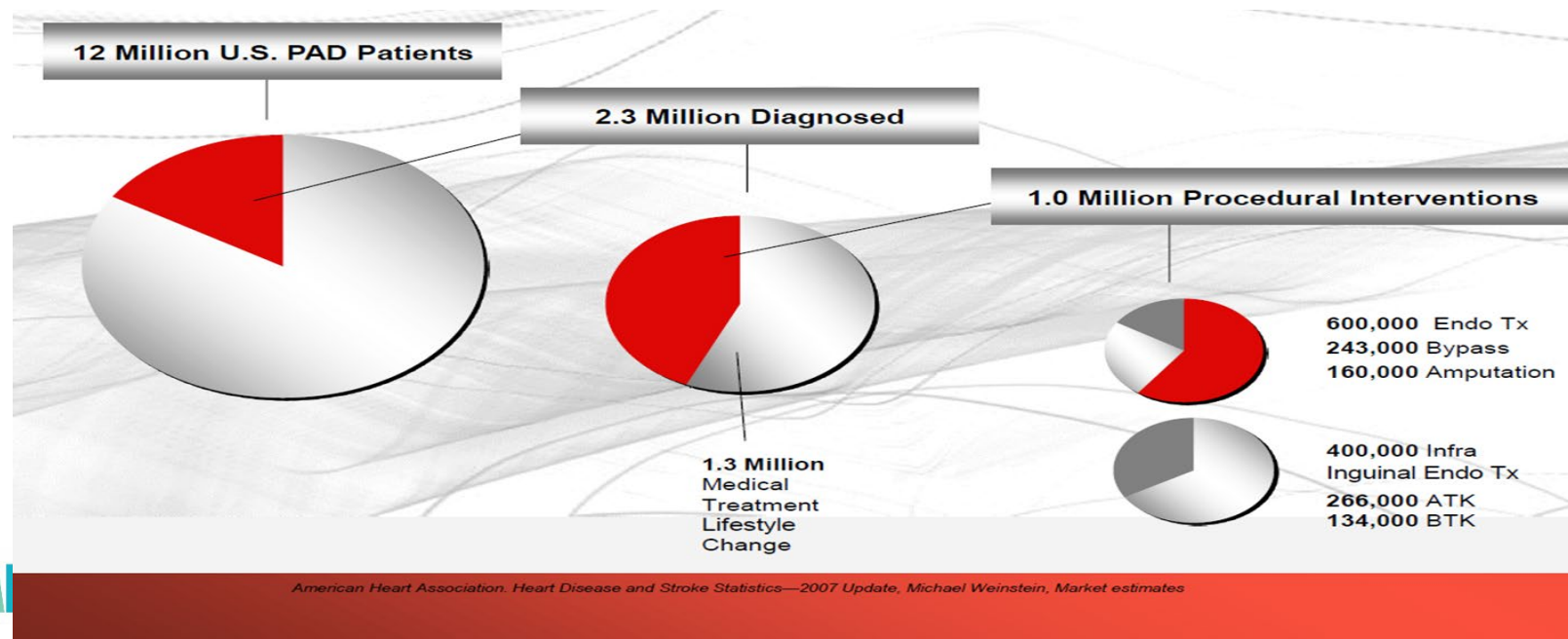


Disclosures

- Speaker – Amgen, AstraZeneca

PAD is an Epidemic...

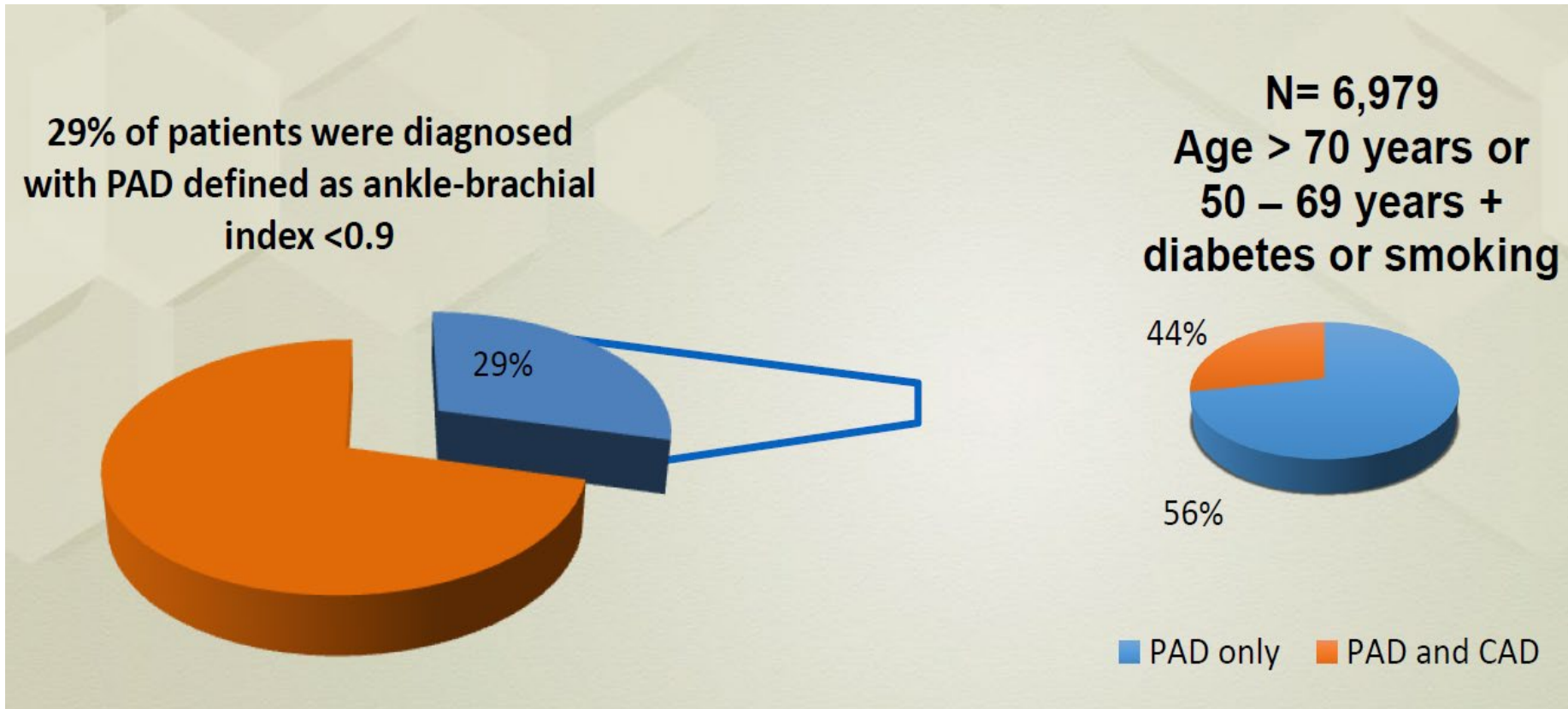
- 20 million Americans have PAD
- 2-3 million are estimated to have CLI
- PAD is a marker of death – 1 year mortality or MACE 20% (1:5)



Source: Mary Yost, Sage Group

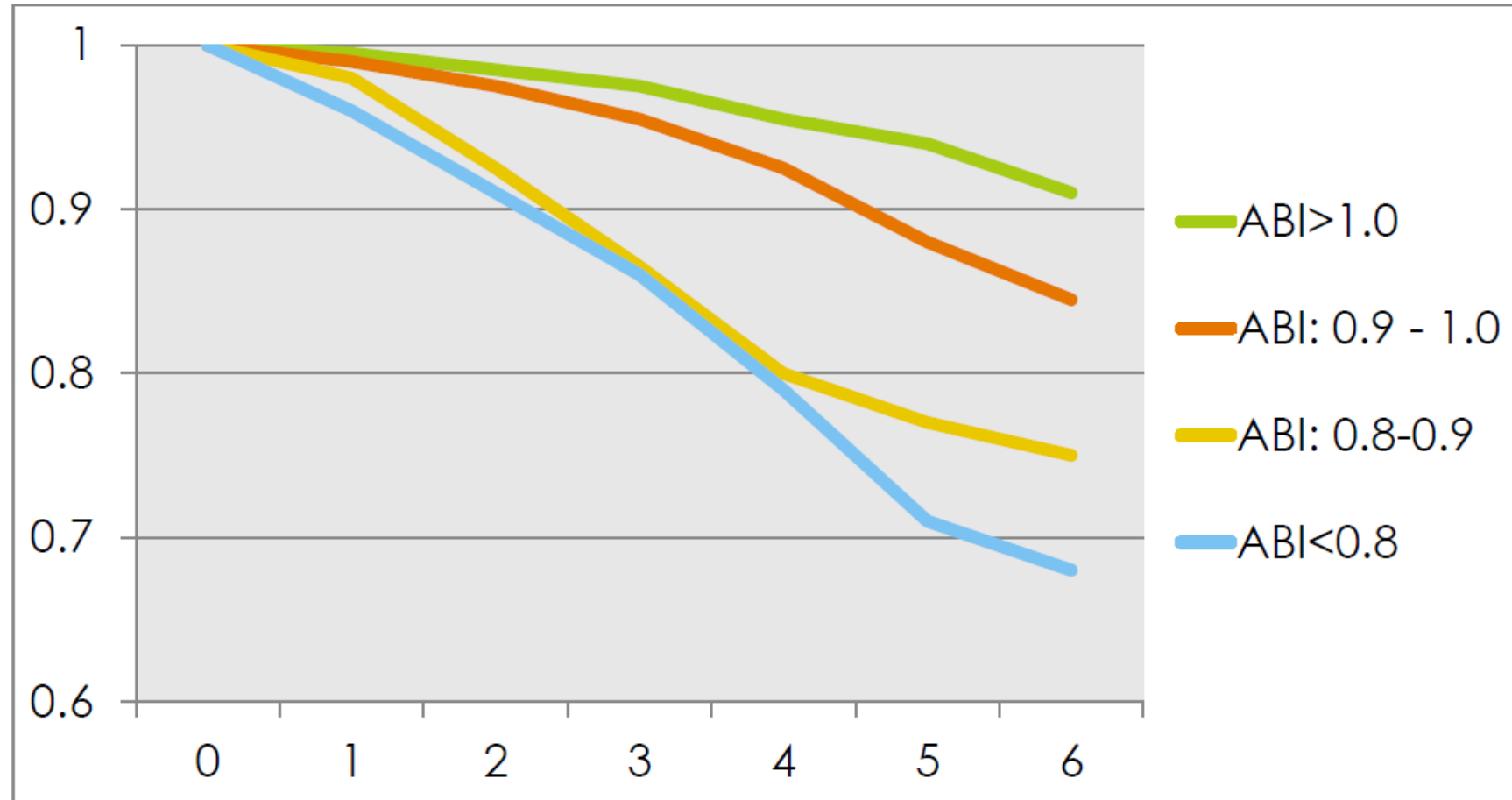


Prevalence of PAD in High-Risk Patients (PARTNER'S Trial)

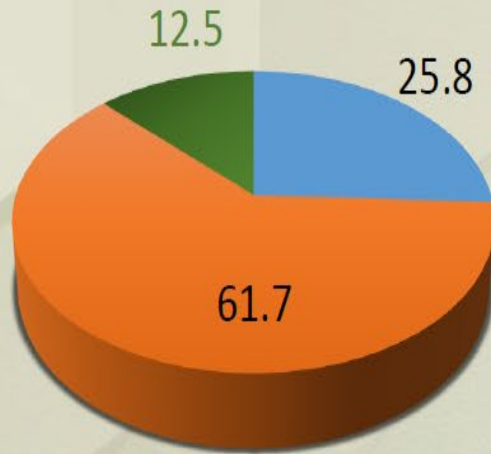


Hirsch AT et al. *JAMA*. 2001;286:1317-1324.

Patient survival by Ankle-Brachial Index...

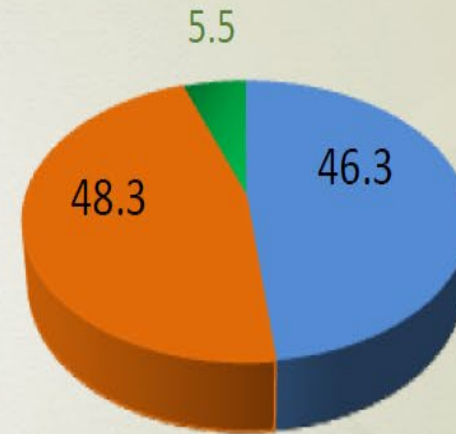


**Prior Diagnosed PAD
(n=366)**



- No Symptoms
- Nonspecific Symptoms
- Claudication

**Newly Diagnosed PAD
(n=457)**



Most are Asymptomatic

Amputation is deadly...

- BKA: 5-8% periop. mortality
- AKA: 8-12% periop mortality
- 1/3rd discharged to NH
- Only 50% develop mobility post-BKA, 25% post-AKA
- 40% Amputees dead within 2 yrs
- Quality of life is worse than lung cancer



PAD ANNUAL ECONOMIC BURDEN*

\$164[†]-\$290[‡] BILLION

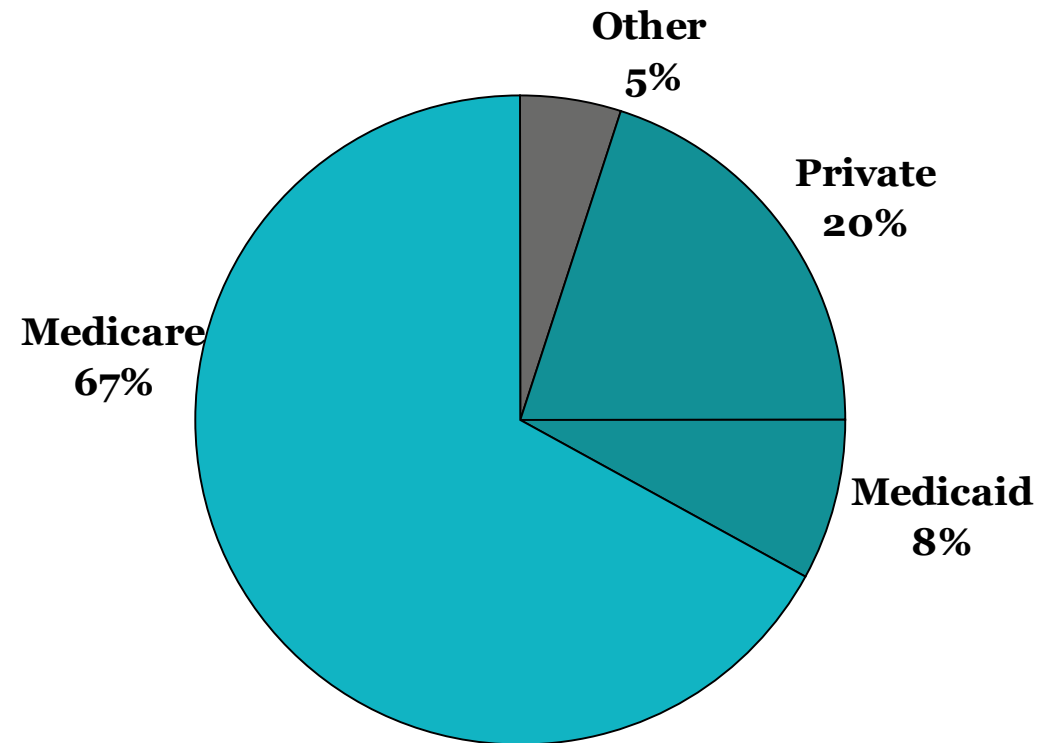
*Total Costs Inpatient and Outpatient in 2010 \$

[†]U.S. REACH population inpatient costs + outpatient medication = \$9,298 X 17.6 Mil PAD in 2010

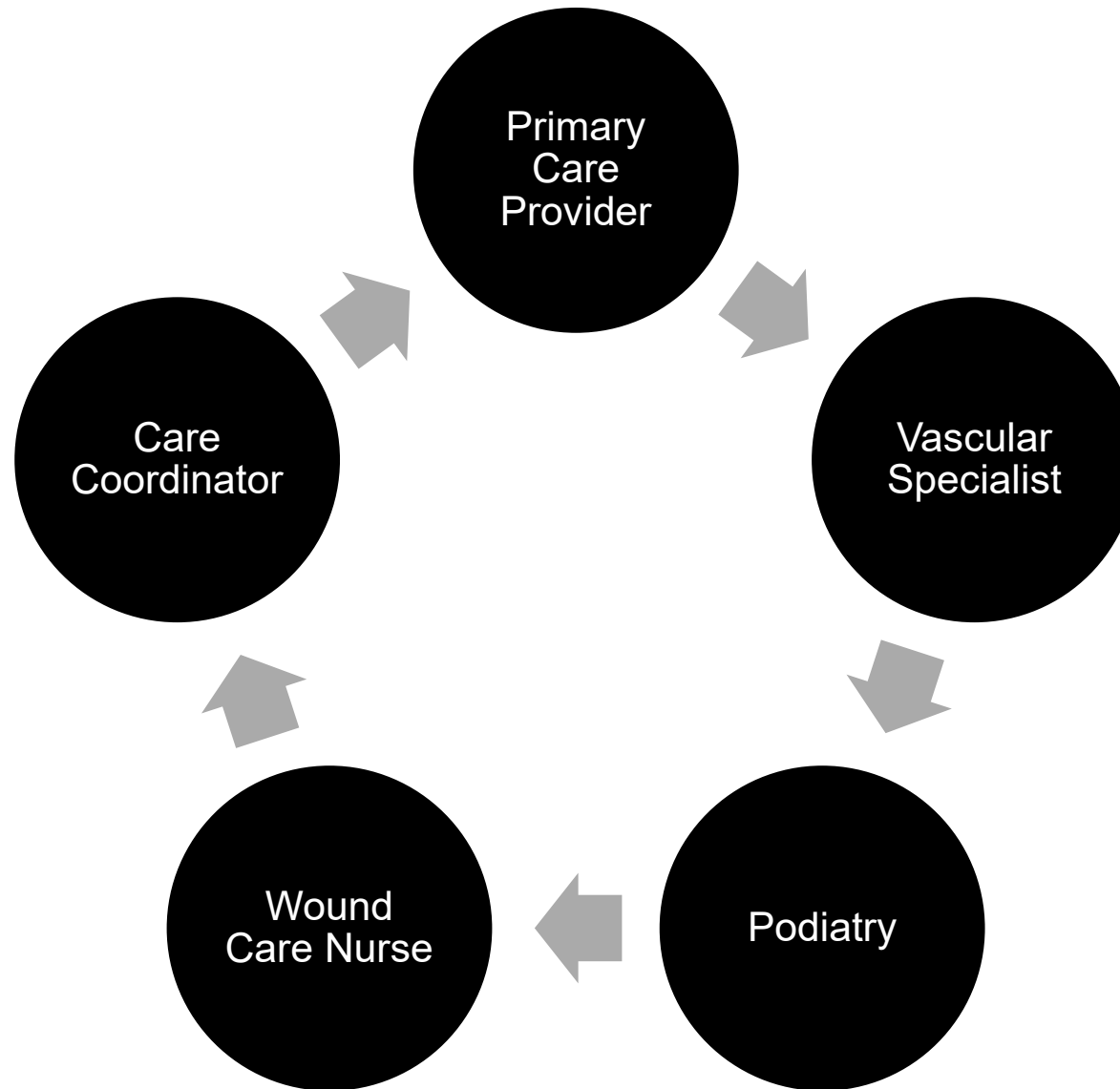
[‡]Margolis managed care population all-cause hospitalizations + medications + other = \$16,473 x 17.6 Mil PAD

WHO PAYS THE PAD BILL?

2009 PAD Patient Discharges by Payer



It takes the whole village!!



Basics...

- History
- Physical exam – feel the foot pulse!
- Simple screening:
 - ABI (Ankle-Brachial Index)
 - PVR (Pulse Volume Recording)
 - SPP (Skin Perfusion Pressure)



Clinical Signs of Limb Ischemia

- Nonhealing wounds
- Shiny skin
- Loss of hair growth
- Cool skin temperature for one limb
- Pale or bluish skin
- Reduced capillary fill times
- Pallor on elevation and rubor on dependency

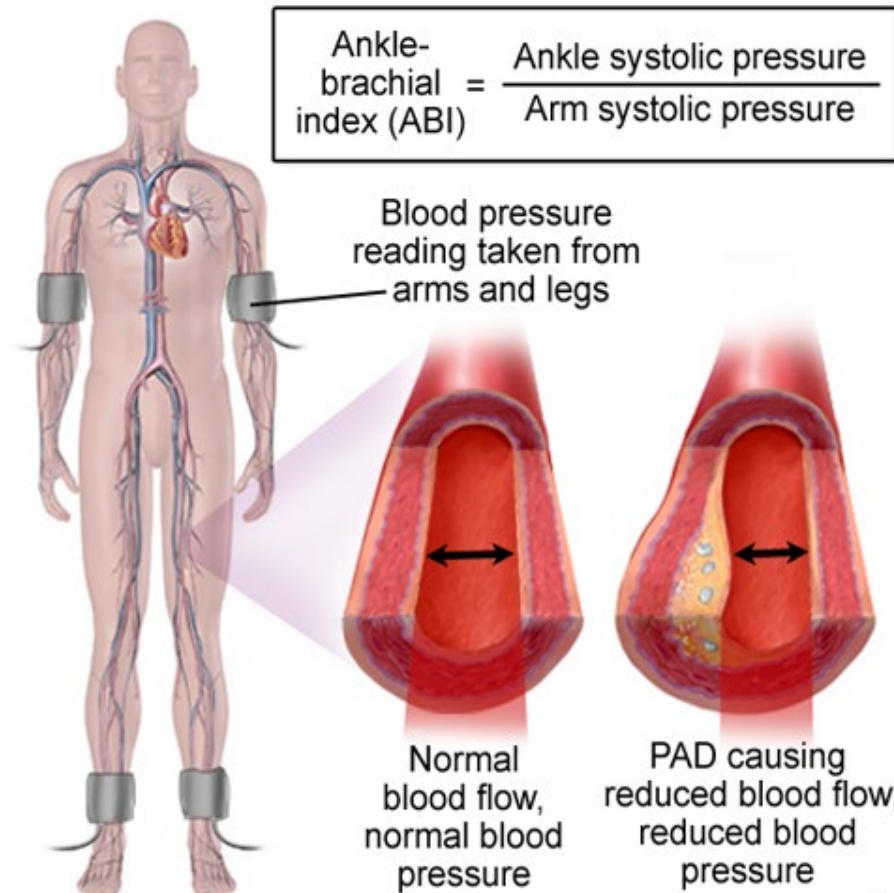


Sources: Hirsch et al. (2006) ACC/AHA Practice Guidelines for PAD; Norgren et al. (2007) TASC II Guidelines for PAD

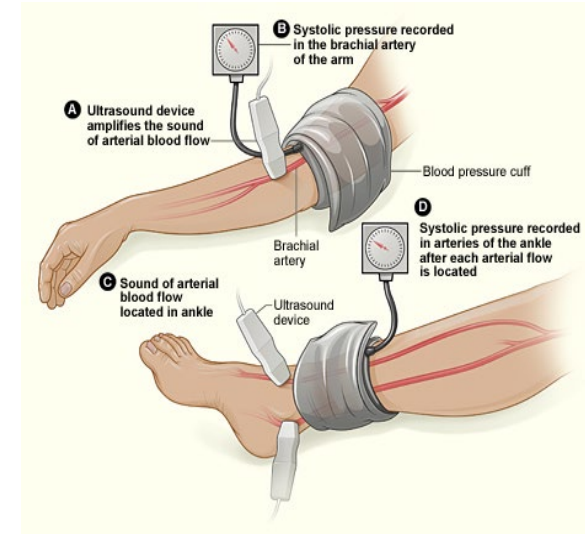
Who should undergo Non-Invasive Testing?

- Age ≥ 70
- Age 50-69 with Diabetes or smoking
- Age < 49 with Diabetes + (smoking/HTN/Dyslipidemia)
- Abnormal lower extremity pulse examination
- Known atherosclerotic disease in other vascular beds (coronary/carotid/renal)

Non-Invasive Testing - ABI



© medmovie.com



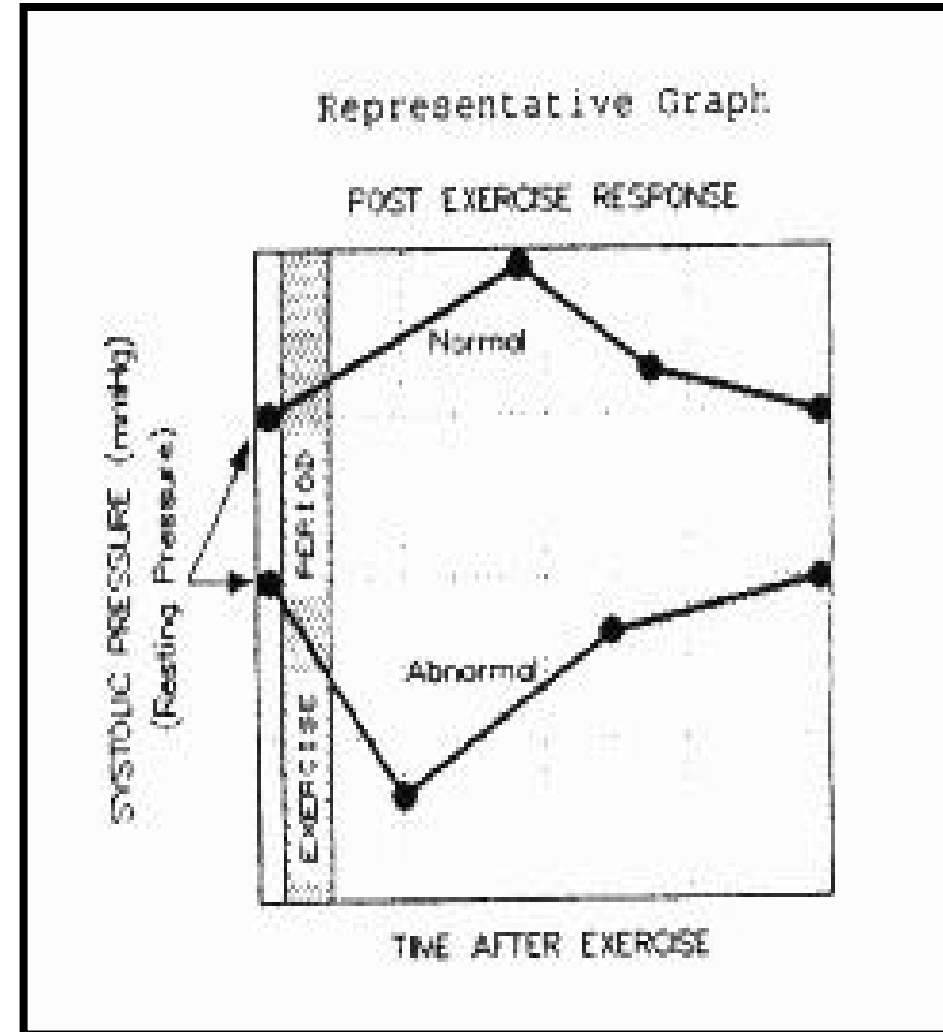
Grading of ABI

ABI	Severity of PAD
>1.1	Calcified, not compressible
0.9-1.0	Normal
0.8-0.9	Mild
0.6-0.8	Moderate
0.4-0.6	Severe
<0.4	Critical

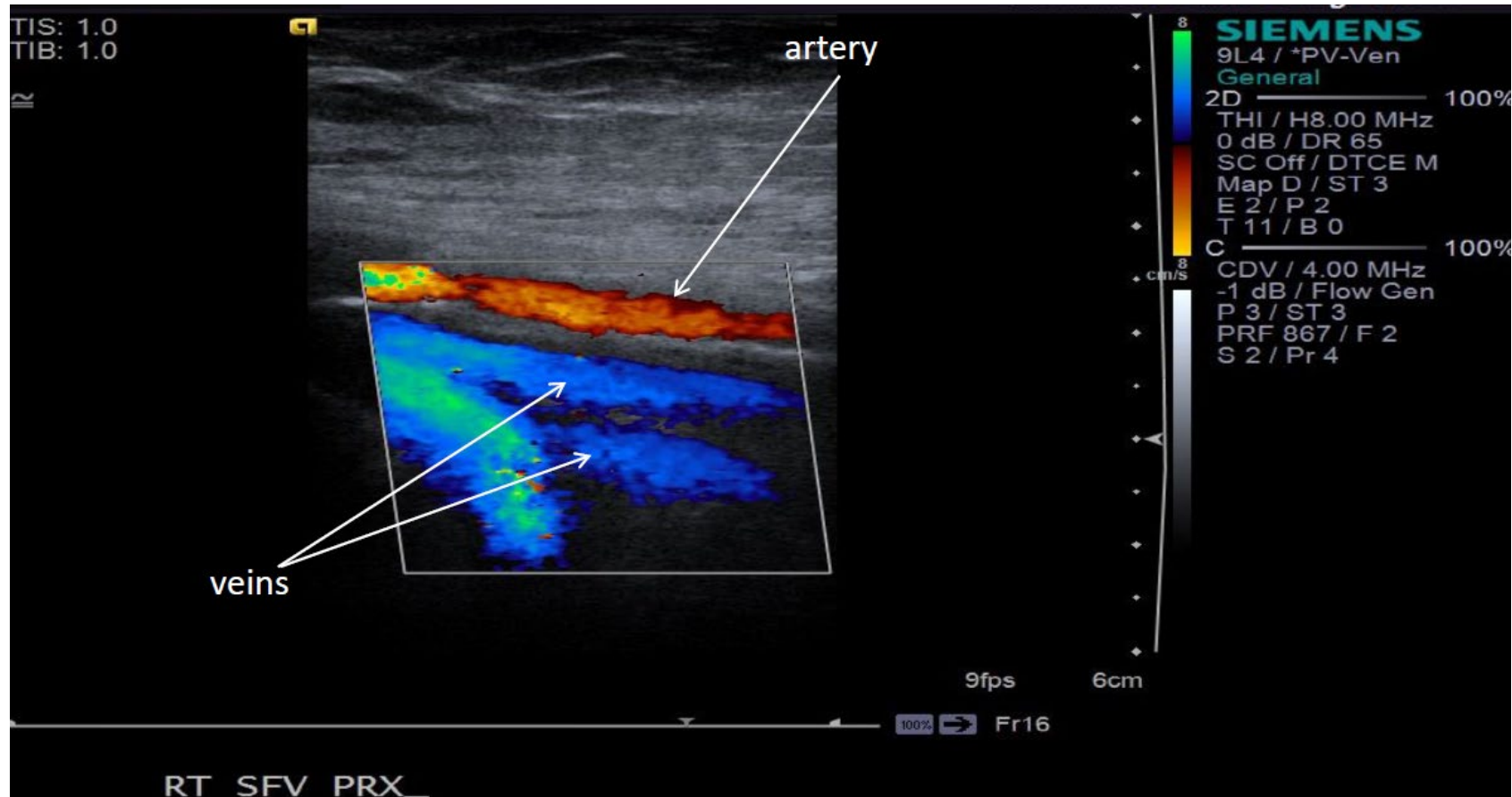
Resting versus Exercise ABI

Exercise Testing

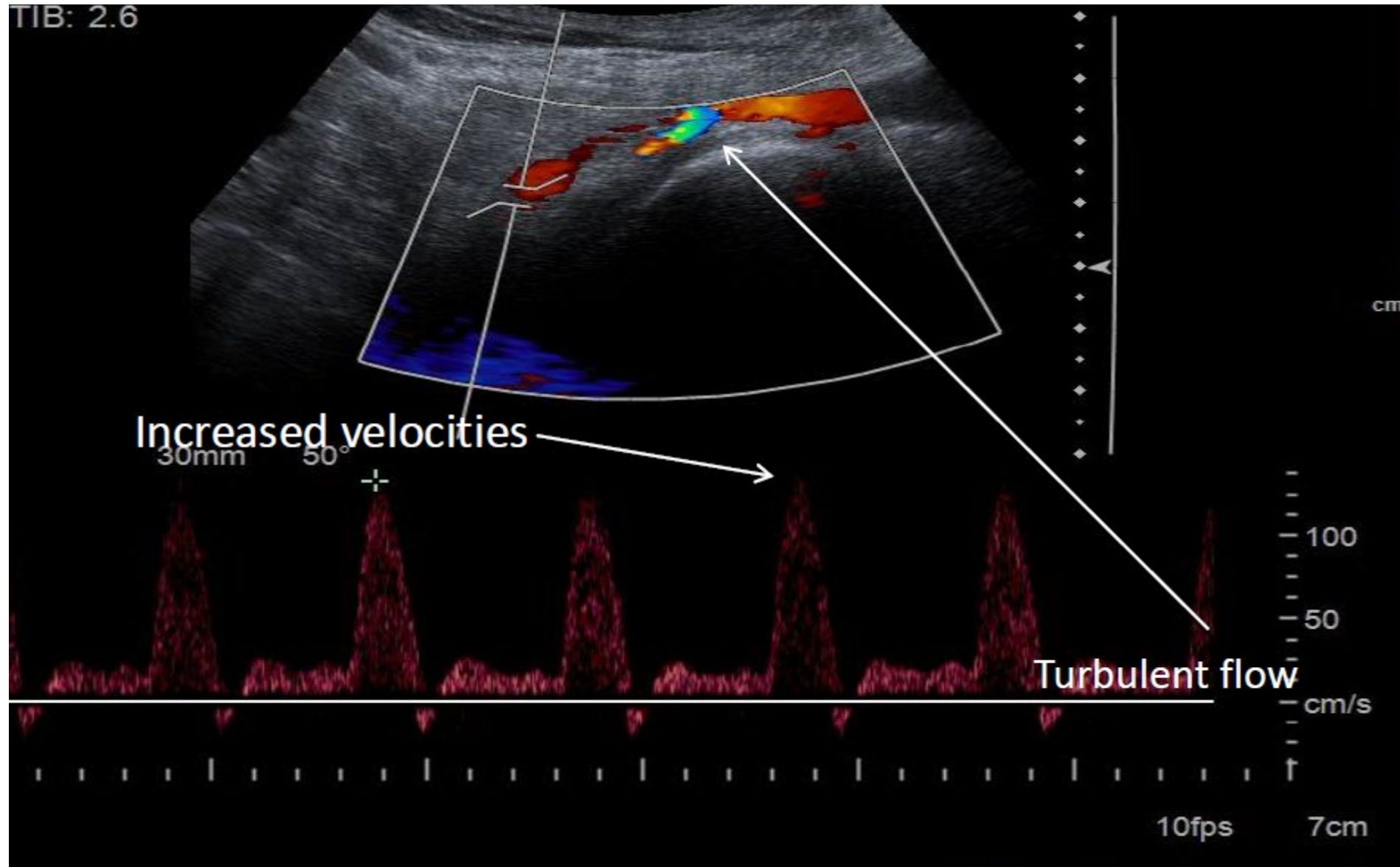
- Exercise
 - ABI at baseline
 - 2 mph at 12% grade, 5 minutes
 - ABI post-exercise, 1 minute, then q 2 minutes
- Post-exercise ankle systolic pressure
 - Falls >20% from baseline
 - Takes longer than 3 minutes to recover



Non-Invasive Testing – Duplex Ultrasound



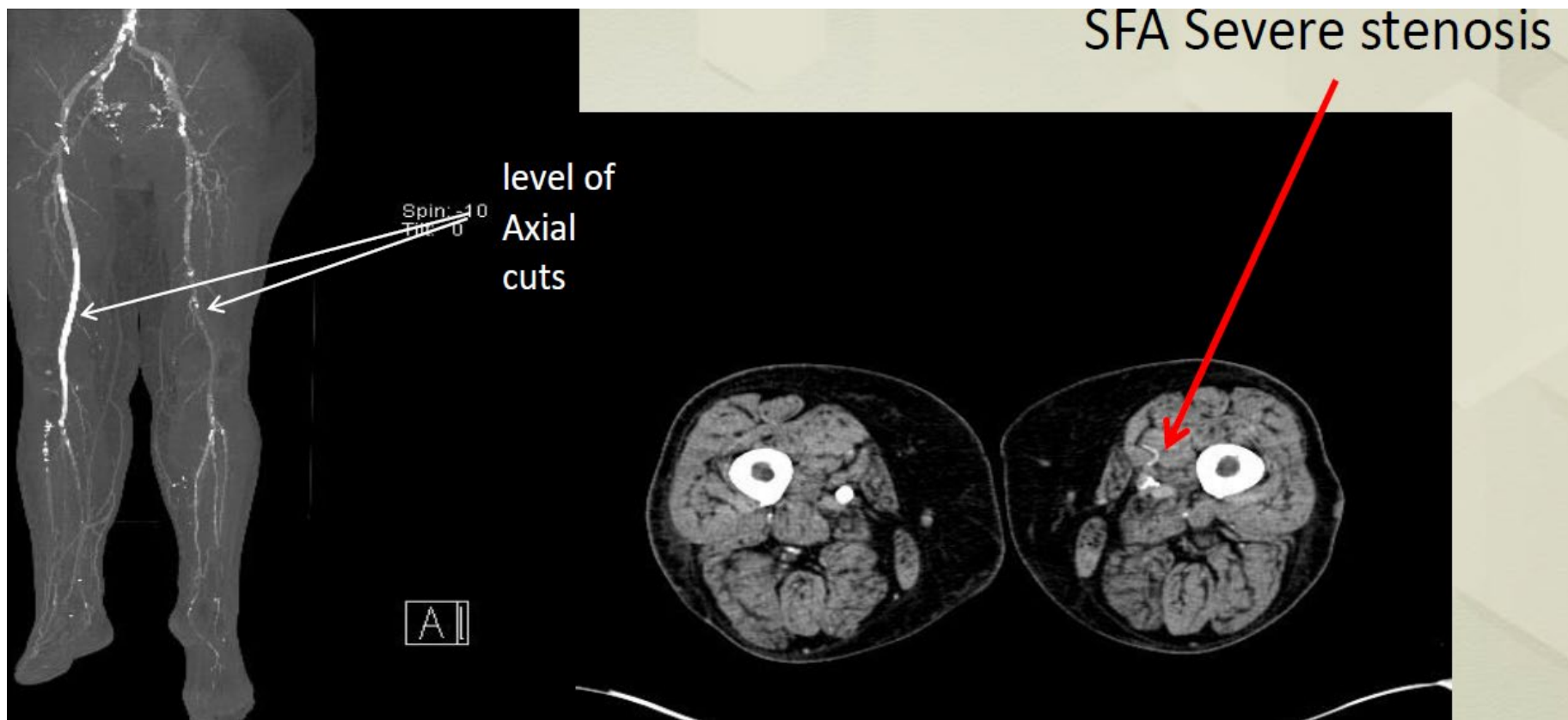
Doppler US – stenosis, velocities



Non-Invasive Testing – CTA/MRA

- Unclear Doppler/US data – calcified vessels
- Accurate anatomical assessment
- Case Planning
- Drawbacks: contrast exposure, radiation (CTA)







MRA

- Advantageous in calcified Tibial vessels
- Superior sensitivity and specificity compared to CTA

Invasive Angiography

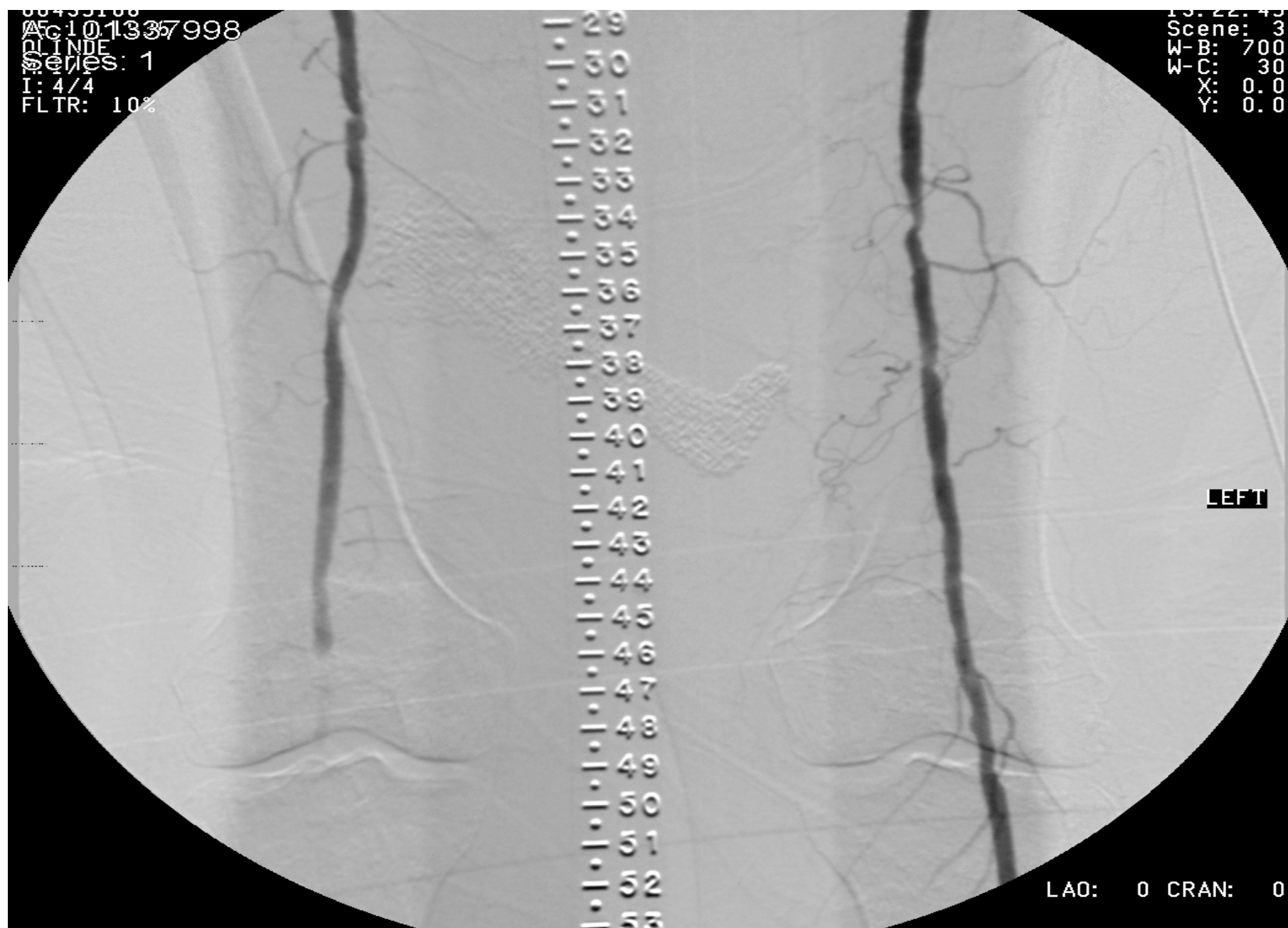
- Gold Standard
- Ability to diagnose and treat
- Invasive, hospital stay, etc.
- CO2 Angiography

Patient History

- 80 year-old female with recent MI, CABG, cardiomyopathy, now presents with right leg pain
- Pulseless foot
- Rest pain

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CLINDE
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I: 4/4
FLTR: 10%

13.22.43
Scene: 3
W-B: 700
W-C: 30
X: 0.0
Y: 0.0



LAO: 0 CRAN: 0

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CLINDE
Series: 1
I: 19/19
FLTR: 10%

13:22:42
Scene: 4
W-B: 700
W-C: 50
X: 0.0
Y: 0.0



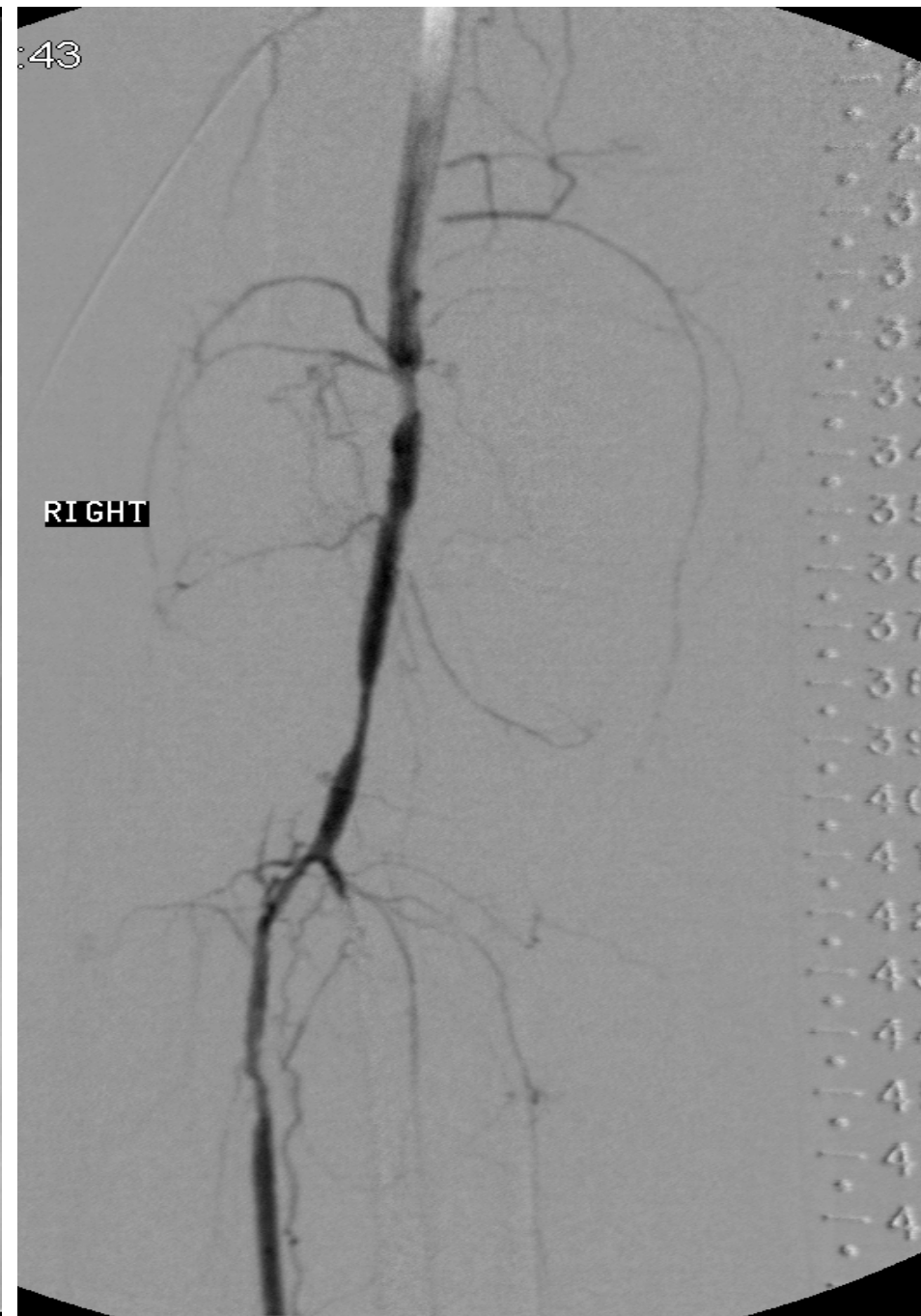
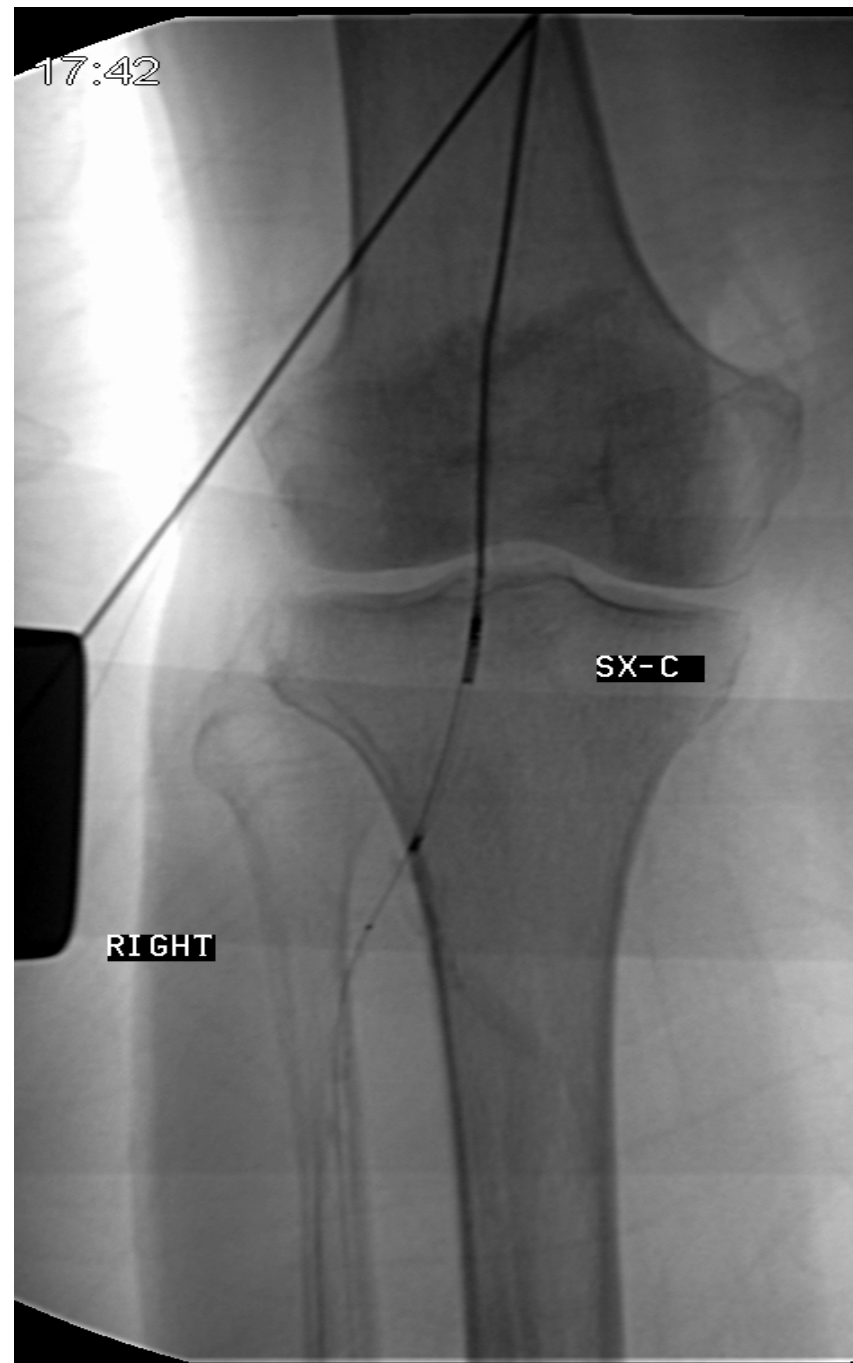
998

Scene: 6
W-B: 700
W-C: 50
X: 0.0
Y: 0.0

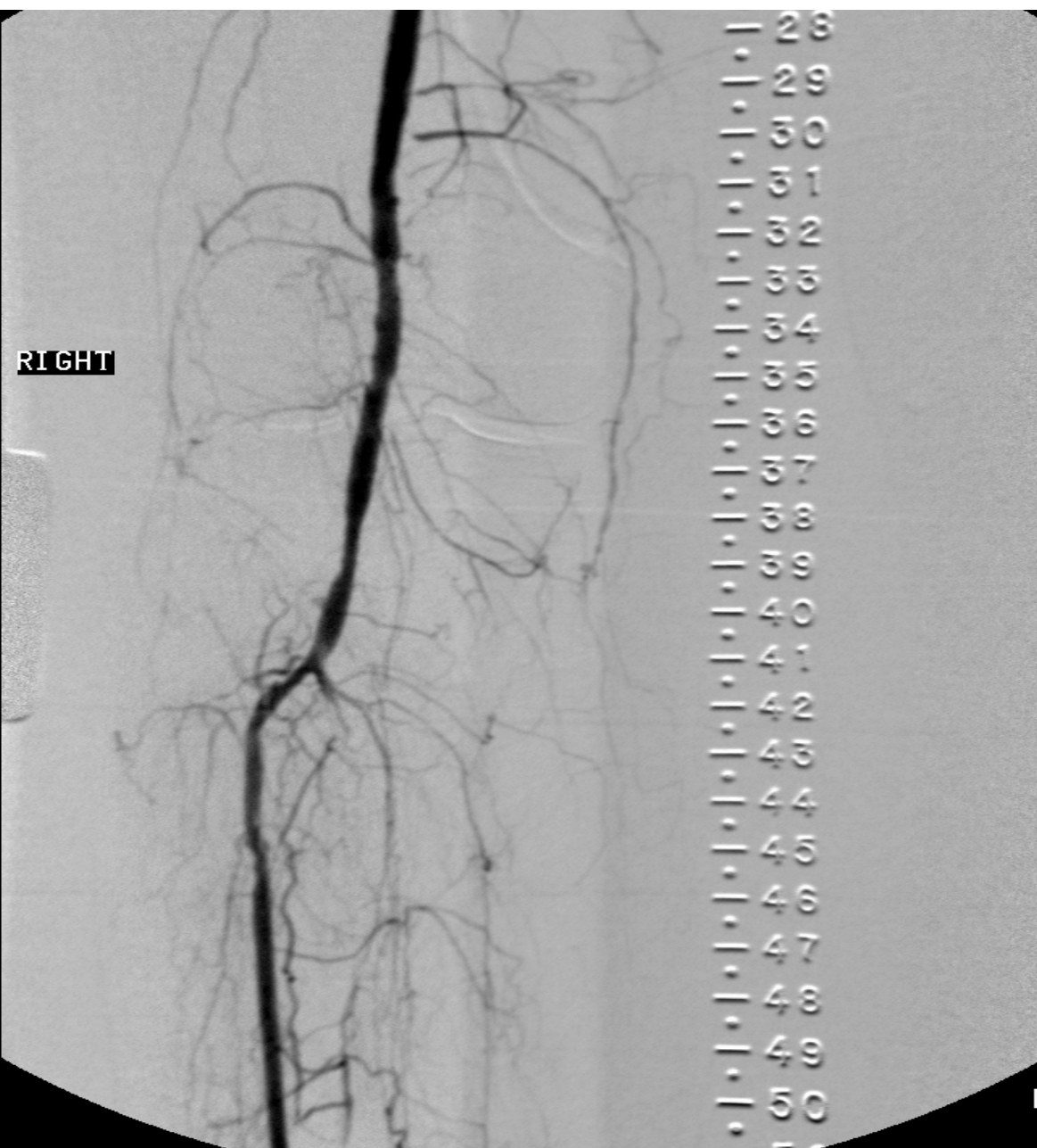
LEFT

LAO: 0 CRAN: 0





Ac101338600
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Series: 1
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FLTR: 10%

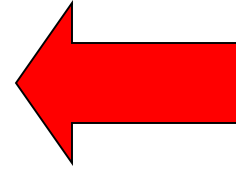


RIGHT

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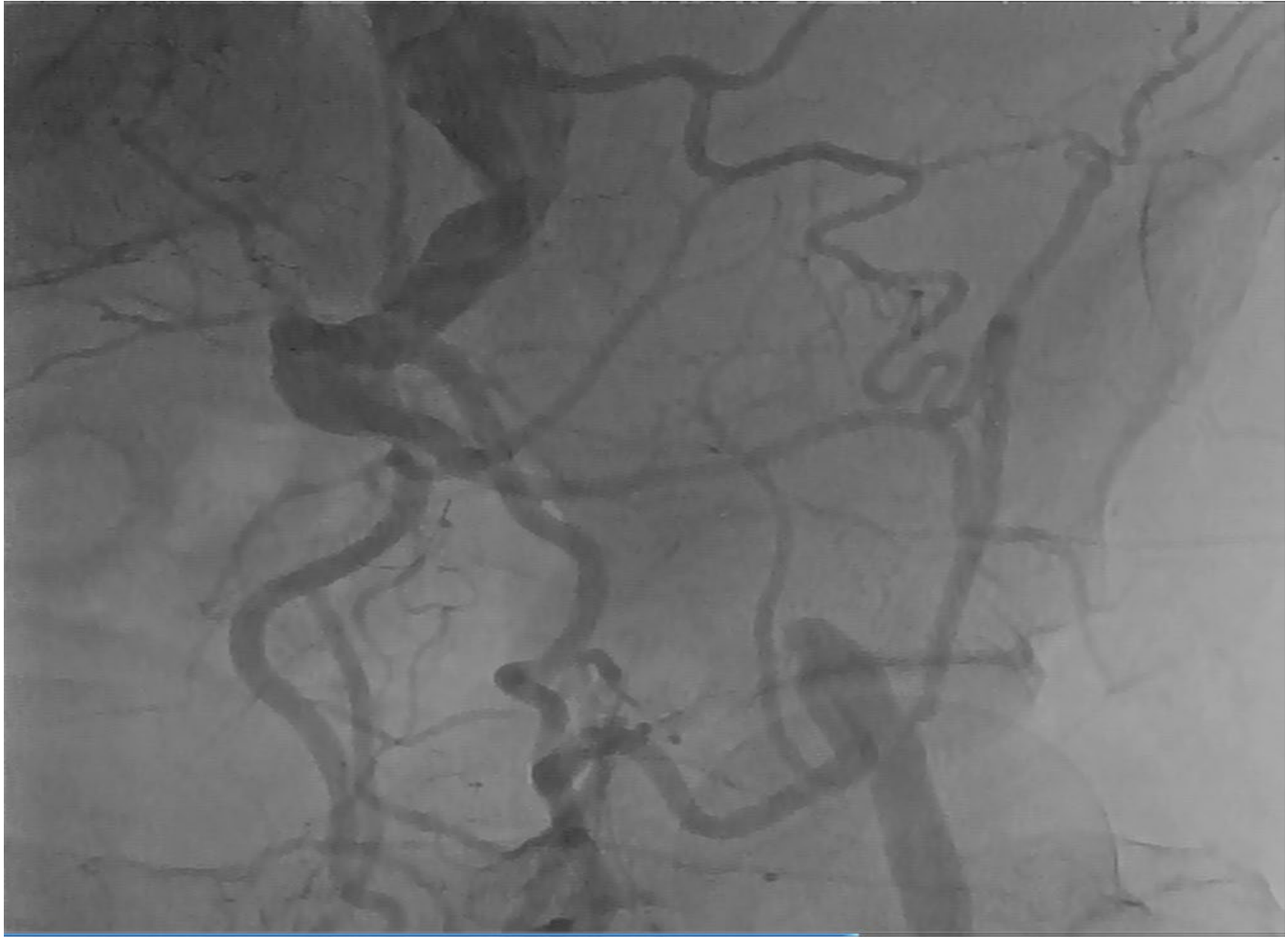
Scene: 15
W-B: 700
W-C: 50
X: 0.0
Y: 0.0

LAO: 1 CRAN: 1

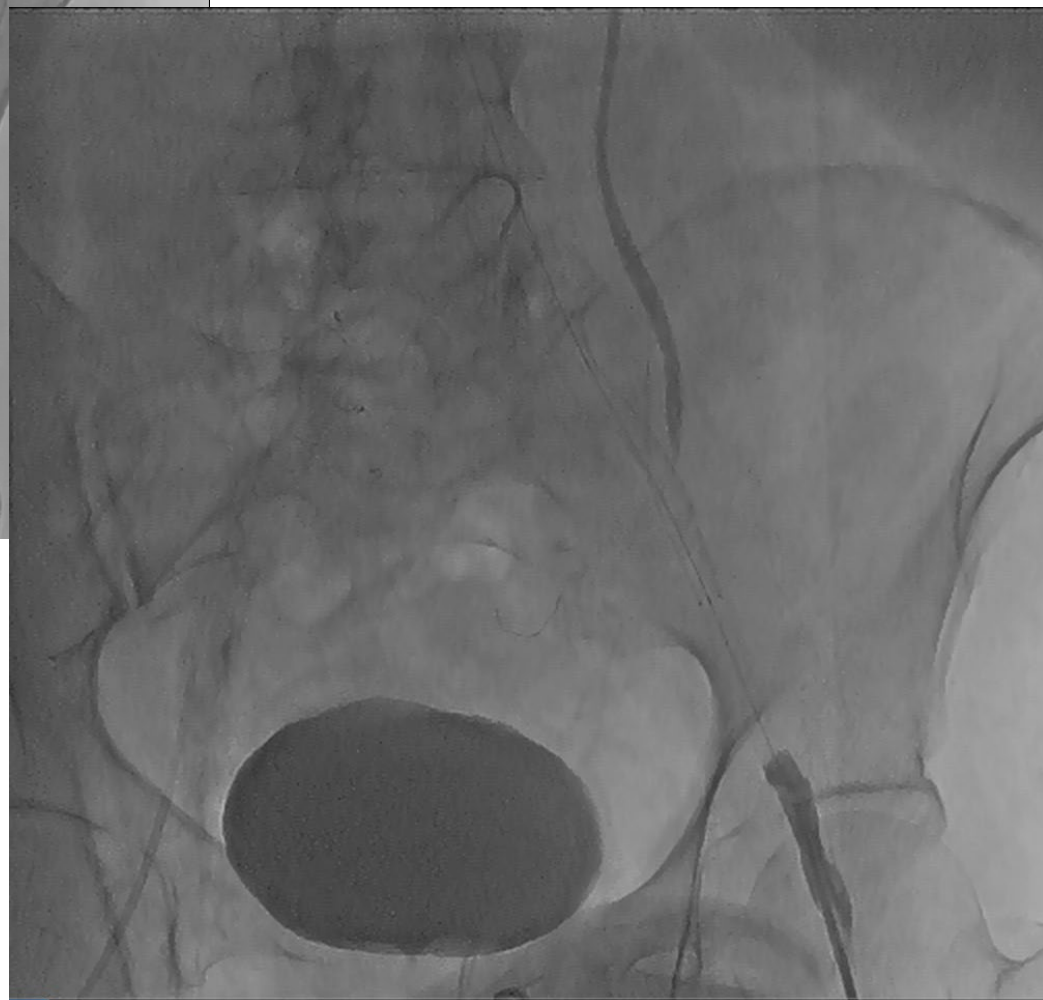


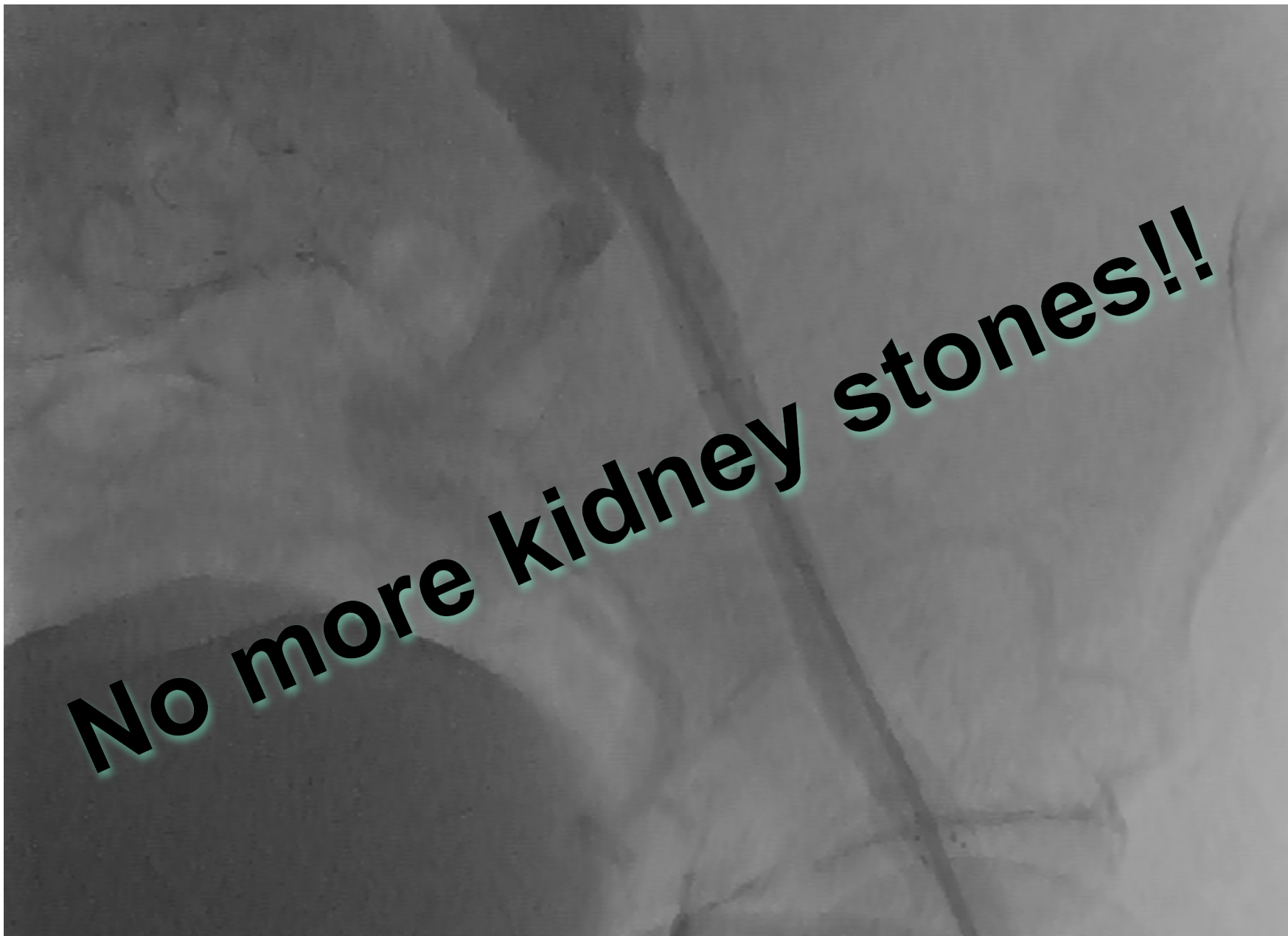
Atypical symptoms...

- 65 year-old male
- HTN, DM2
- “back pain” on the left side...
- “Everyone says I have kidney stones”
- Routine noncontrast CT abdomen shows “nonobstructing renal calculi bilaterally measuring 2-5 mm”, incidentally discovered left common Iliac artery calcification











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