

Dallas CVI

December 7, 2013

Radial for all!
(who want to suffer...)

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ES Brilakis: Disclosures

Consulting/speaker honoraria: St Jude Medical, Terumo, Janssen, Sanofi, Bridgepoint Medical/Boston Scientific

Employment (spouse): Medtronic

Grants: NIH –1R01HL102442

VA - I01-CX000787-01

VA CSP#571 – DIVA

MIRACLE CURE-ALL ELIXIR

1/2 cup of lemon juice
1/2 cup of ginger juice
16 cloves of garlic
1 cup of raw apple cider vinegar
500g of raw honey
10ml in a glass of warm water
and juice first thing in the morning

Prevents colds and flus
Reduces duration of colds and flus
Aids digestion
Increases energy
Strengthens immune system
Prevents heart decease
Improves general health and wellbeing



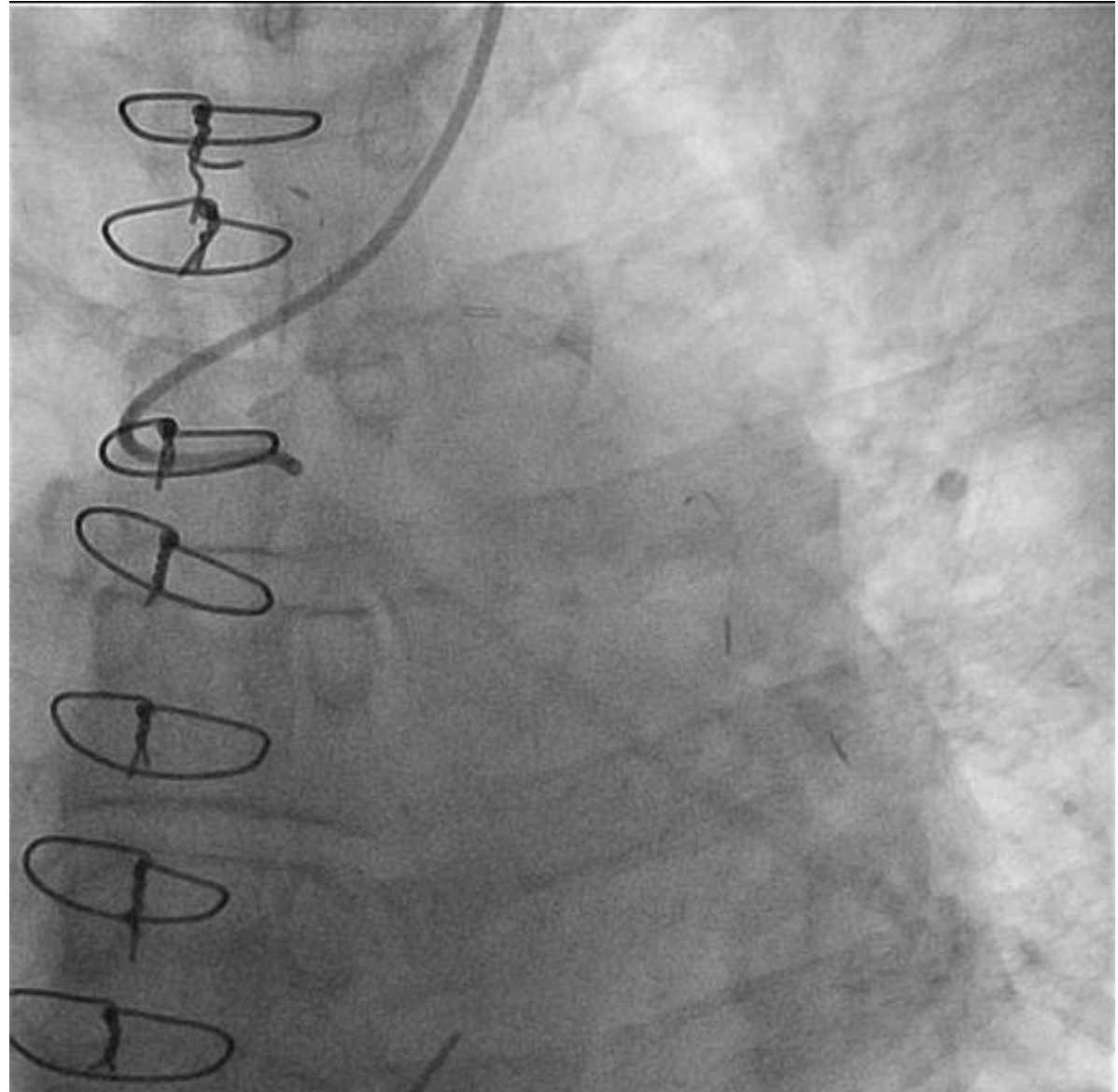
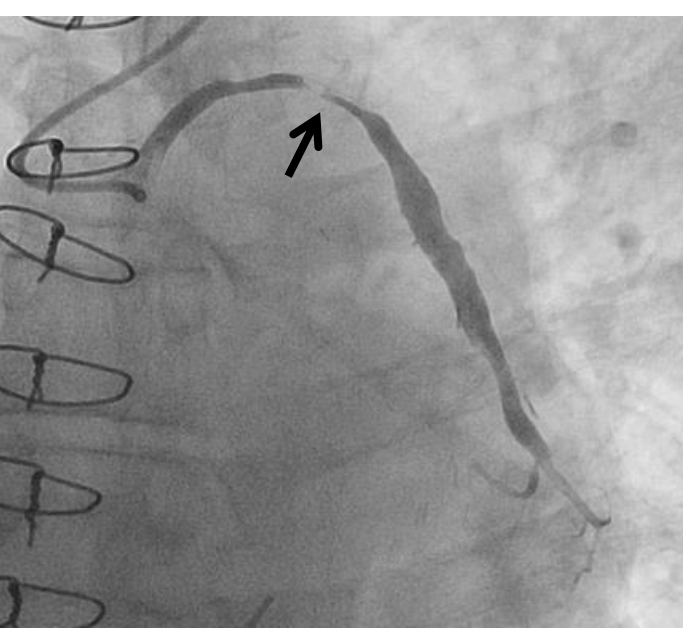
NOTE:

Pour the mixture into a sealed glass jar (not plastic) and leave it in the refrigerator for a minimum of five days before consumption.
Shake the jar before consuming.

Outcomes

	Radial (n=3507) %	Femoral (n=3514) %	HR	95% CI	P
Major Vascular Access Site Complications	1.4	3.7	0.37	0.27-0.52	<0.0001
Types of access complications					
Large hematoma	1.2	3.0	0.40	0.28-0.57	<0.0001
Pseudoaneurysm needing closure	0.2	0.6	0.30	0.13-0.71	0.006
AV fistula	0	0.1			
Ischemic limb needing surgery	0	0			

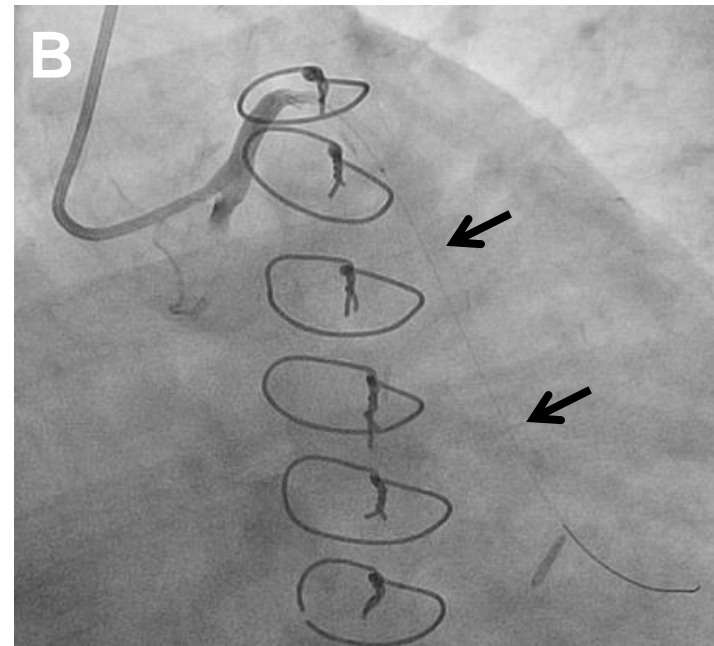
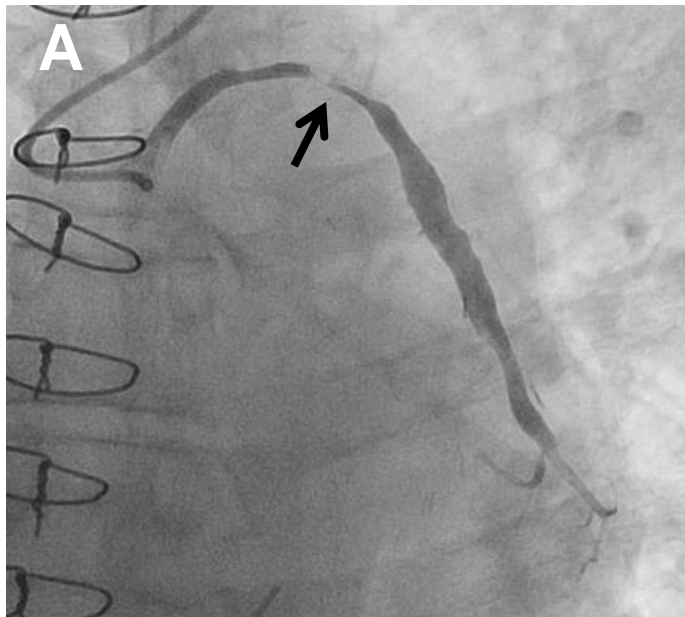
Finally engaged with AL1 diagnostic catheter



Catheters tried:

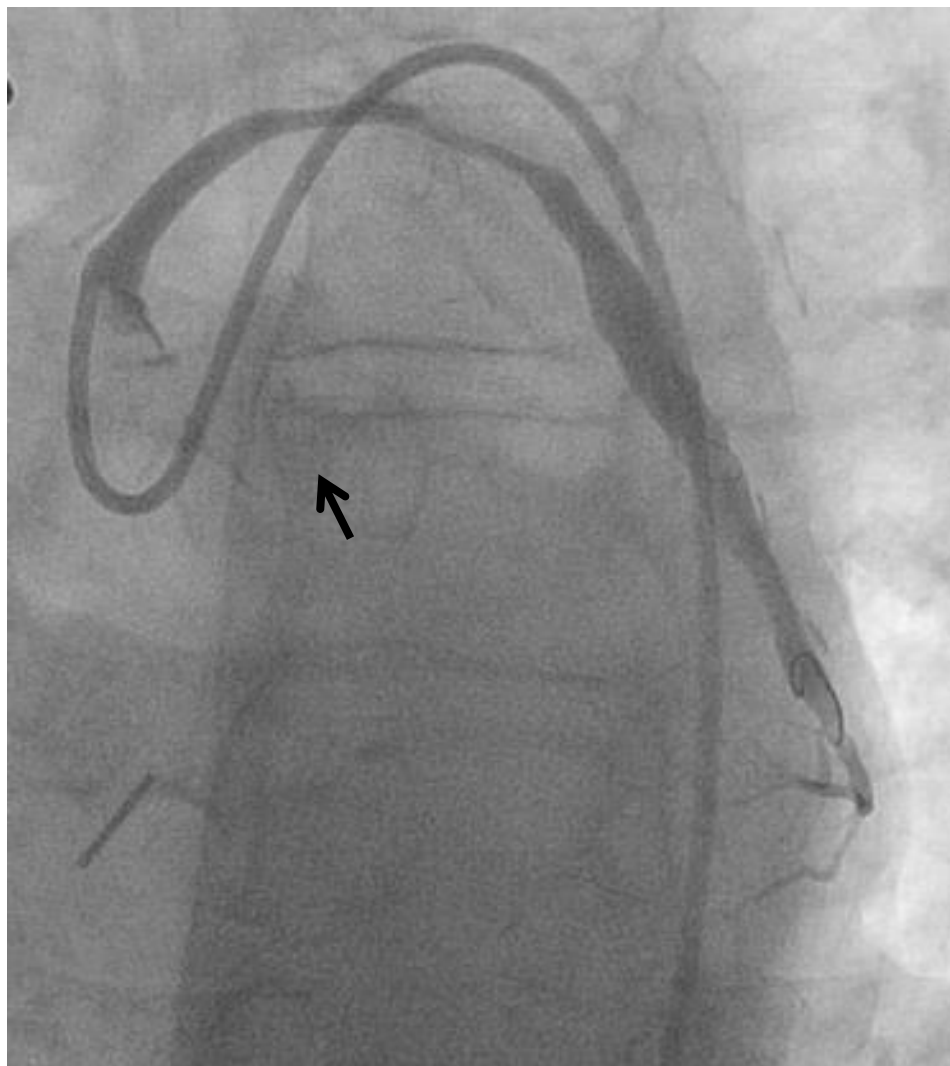
1. AL1
2. AL1 short tip
3. Champ 2
4. ALR1-2
5. Champ 1
6. LCB

Diagnostic AL1 followed by Ironman wire followed by LCB guide



**Unable to deliver Filterwire in spite
of multiple attempts...**

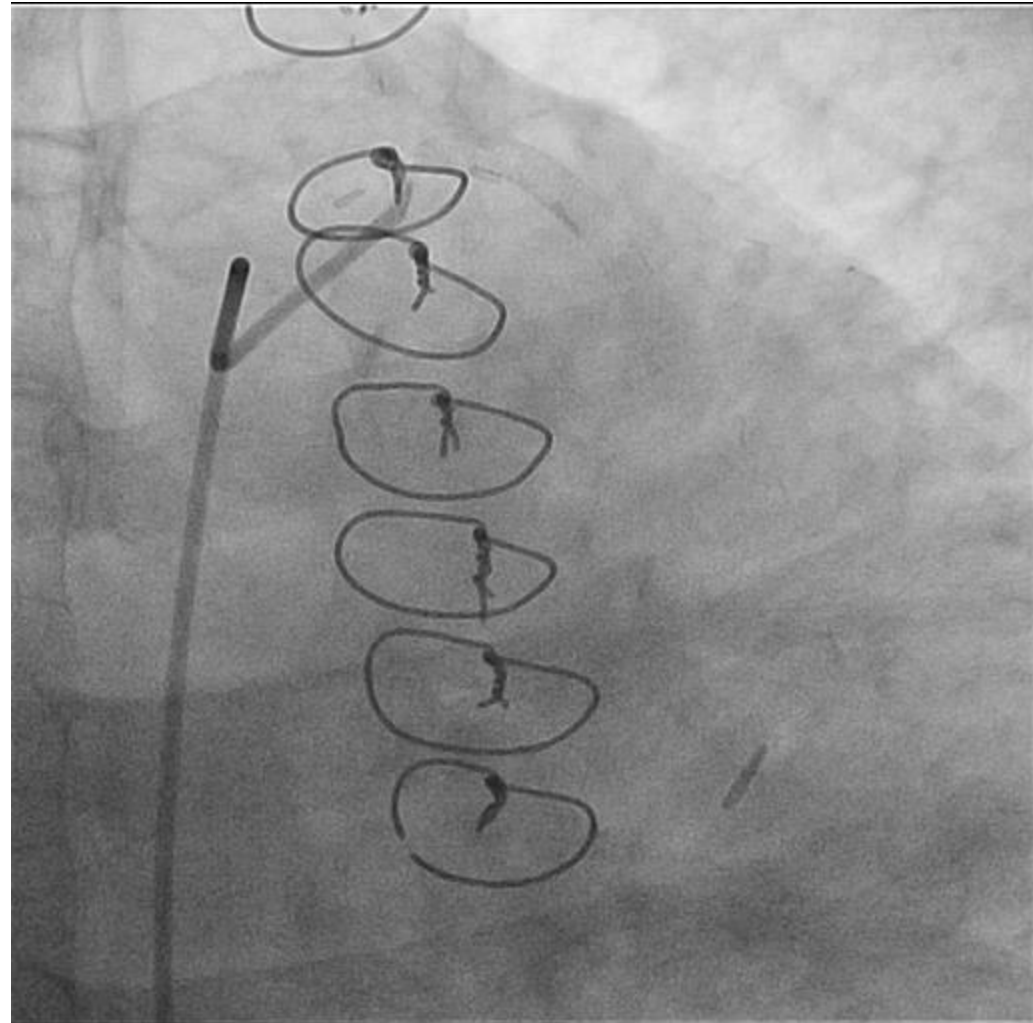
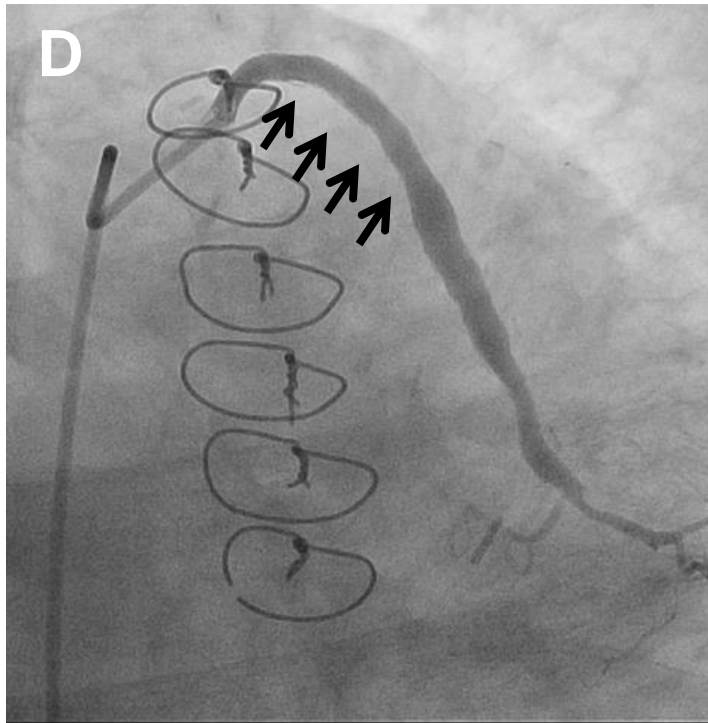
After 55 minutes of fluoro



Switched to femoral...

After 6 minutes of fluoro

2 stents implanted using Filtewire



Radial cath = ↓ vascular access complications

At what price?!

- 1. More difficult to engage**
- 2. Less support**
- 3. Fewer device/strategy options**

A Randomized Comparison of the Transradial and Transfemoral Approaches for Coronary Artery Bypass Graft Angiography and Intervention (the RADIAL-CABG Trial)

Tesfaldet T. Michael, MD, MPH, Mohammed Alomar, MD, Aristotelis Papayannis, MD, Owen Mogabgab, MD, Vishal G. Patel, MD, Bavana V. Rangan, BDS, MPH, Michael Luna, MD, Jeffrey L. Hastings, MD, Jerrold Grodin, MD, Shuaib Abdullah, MD, Subhash Banerjee, MD, Emmanouil S. Brilakis, MD, PHD

Dallas, Texas

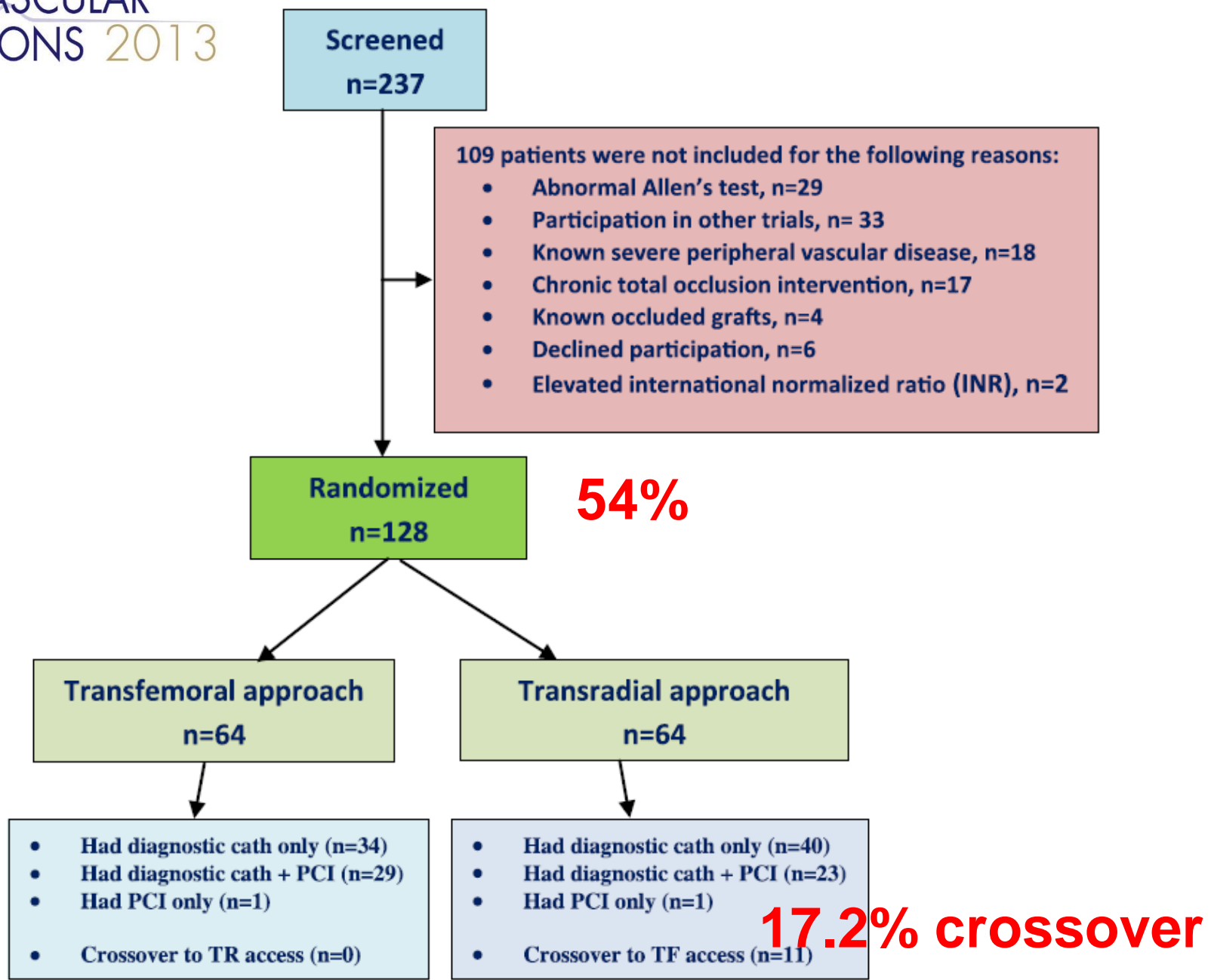


Table 2. Procedural Outcomes and Resource Use in Patients Undergoing Diagnostic Coronary Angiography

	Radial Access (n = 63)	Femoral Access (n = 63)	p Value
Contrast volume, ml	171 ± 72	142 ± 39	<0.01
Procedure time, min	34.2 ± 14.7	21.9 ± 6.8	<0.01
Fluoroscopy time, min	12.7 ± 6.6	8.5 ± 4.7	<0.01
Patient air kerma radiation exposure, Gy	1.29 ± 0.67	1.08 ± 0.54	0.06
First operator radiation exposure, mrem	2.6 ± 1.7	1.3 ± 1.0	<0.01
Second operator radiation exposure, mrem	1.8 ± 2.1	0.8 ± 1.1	0.01
No. of patent grafts	2.2 ± 1.0	2.3 ± 0.9	0.56
No. of diagnostic catheters used	3.3 ± 1.3	2.9 ± 0.7	0.04

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4. More radiation
 - Stochastic risks

5. More time
6. More contrast

**Radial for all
operator:
55 vs 6 minutes
of fluoroscopy..**





Blindness...

52% of interventionalists had posterior lens opacities...

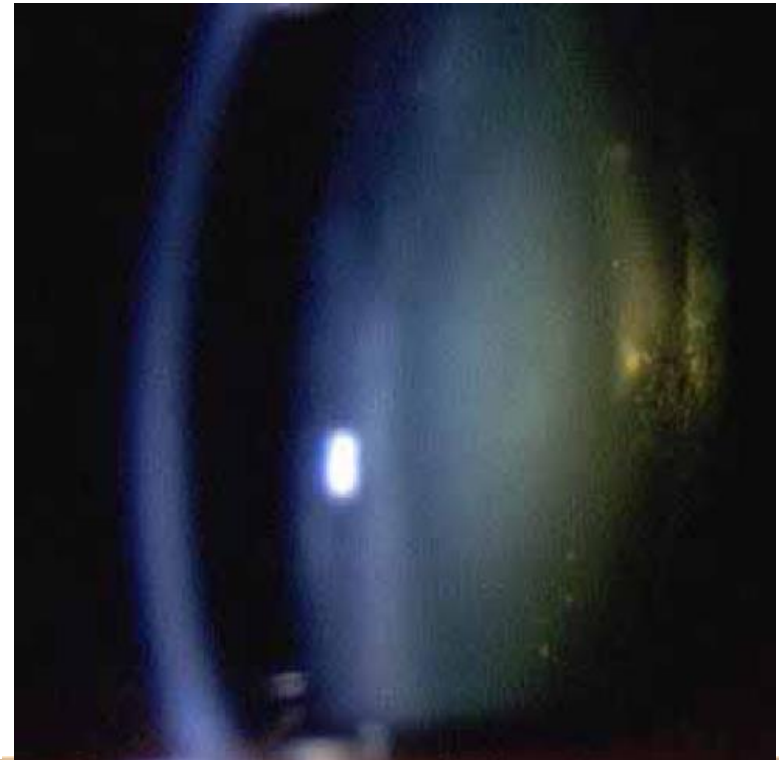
Catheterization and Cardiovascular Interventions 76:826-834 (2010)

Risk for Radiation-Induced Cataract for Staff in Interventional Cardiology: Is There Reason for Concern?

Olivera Ciraj-Bjelac,¹ PhD, Madan M. Rehani,^{2*} PhD, Kui Hian Sim,³ MBBS, FRACP, Houg Bang Liew,³ MBBS, FRCP, Eliseo Vano,⁴ PhD, and Norman J. Kleiman,⁵ PhD

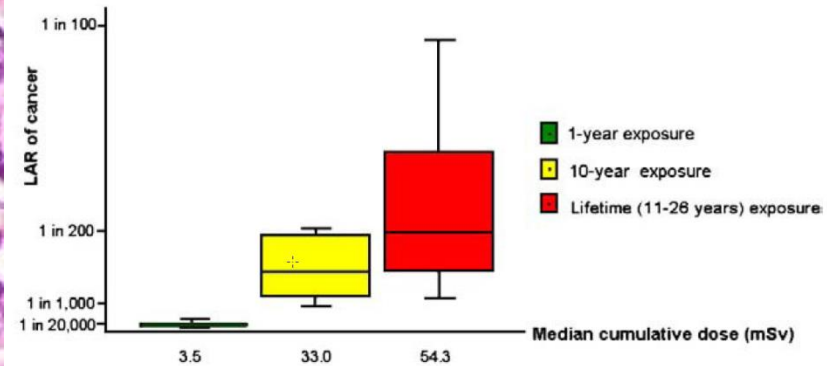
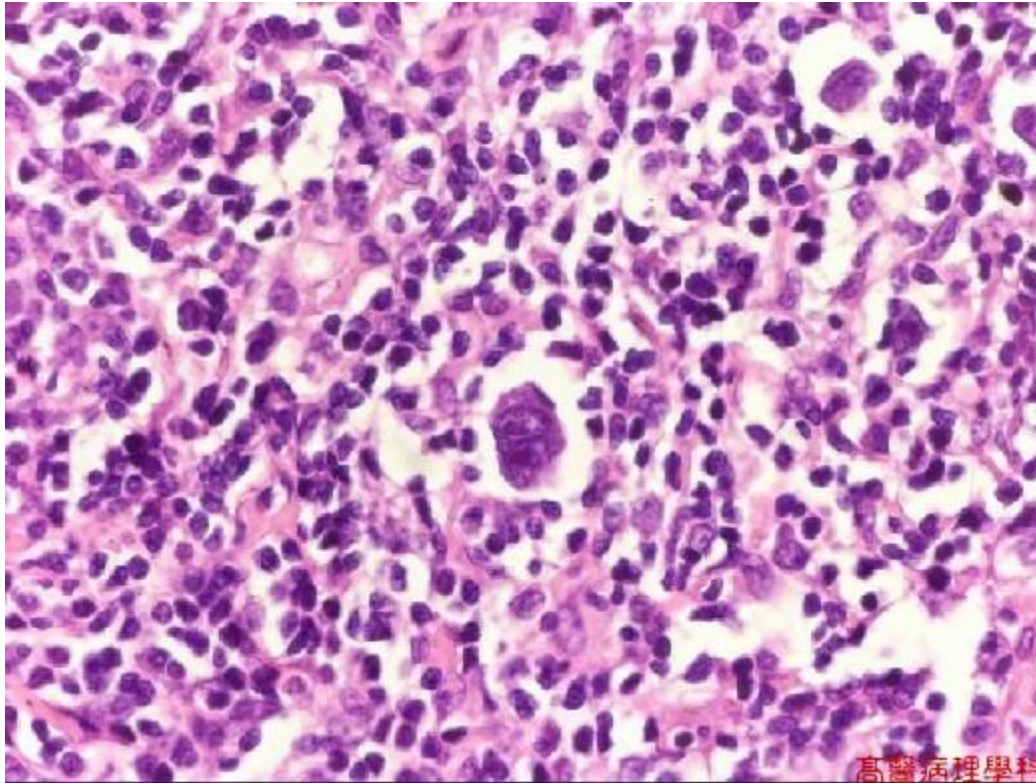
Objectives: To examine the prevalence of radiation-associated lens opacities among interventional cardiologists and nurses and correlate with occupational radiation exposure. **Background:** Interventional cardiology personnel are exposed to relatively high levels of X-rays and based on recent findings of radiation-associated lens opacities in other cohorts, they may be at risk for cataract without use of ocular radiation protection. **Methods:** Eyes of interventional cardiologists, nurses, and age- and sex-matched unexposed controls were screened by dilated slit lamp examination and posterior lens changes graded using a modified Merriam-Focht technique. Individual cumulative lens X-ray exposure was calculated from responses to a questionnaire and personal interview. **Results:** The prevalence of radiation-associated posterior lens opacities was 52% (29/56, 95% CI: 35-73) for interventional cardiologists, 45% (5/11, 95% CI: 15-100) for nurses, and 9% (2/22, 95% CI: 1-33) for controls. Relative risks of lens opacity was 5.7 (95% CI: 1.5-22) for interventional cardiologists and 5.0 (95% CI: 1.2-21) for nurses. Estimated cumulative ocular doses ranged from 0.01 to 43 Gy with mean and median values of 3.4 and 1.0 Gy, respectively. A strong dose-response relationship was found between occupational exposure and the prevalence of radiation-associated posterior lens changes. **Conclusions:** These findings demonstrate a dose dependent increased risk of posterior lens opacities for interventional cardiologists and nurses when radiation protection tools are not used. While study of a larger cohort is needed to confirm these findings, the results suggest ocular radio-protection should be utilized. © 2010 Wiley-Liss, Inc.

Key words: cardiac catheterization; fluoroscopy; occupational exposure; posterior subcapsular cataract (psc); lens opacity



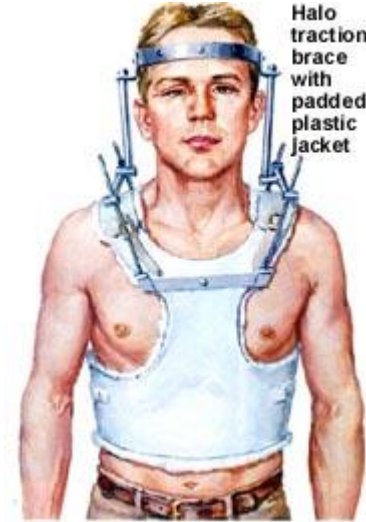
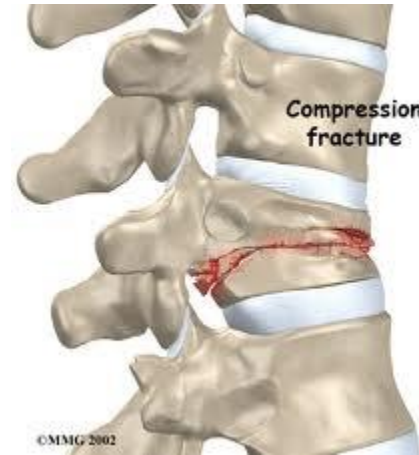


Cancer



Venneri, AHJ 2009

Orthopedic



Tabl

Orthopedic Complications

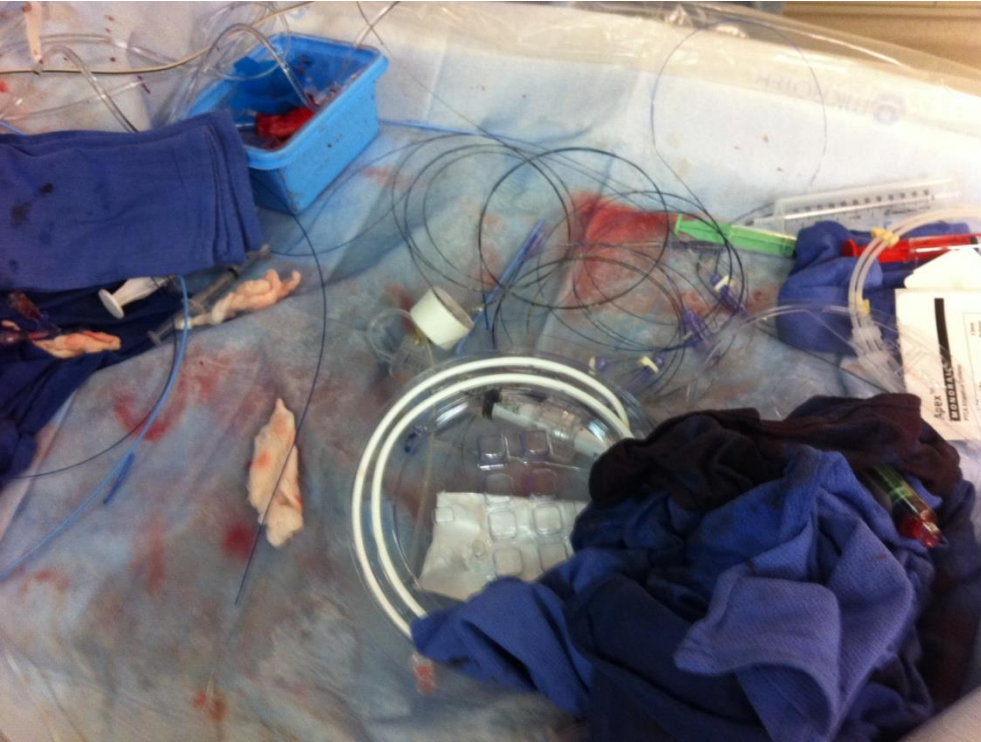
Author (reference #)	Methods	Findings
Ross (1)	Survey of interventional cardiologists (852 surveys, 385 responses), orthopedists (577 surveys, 131 responses) and rheumatologists (978 surveys, 198 responses)	Increased spine problems in interventionalists (75% incidence) as compared to orthopedists and rheumatologists
Goldstein (3)	Survey of 1600 interventional cardiologists (424 responses)	Prevalence of orthopedic complaints: Spine 42% Hip, knee, ankle 28% Spine problem limited work in 1/3
Machan (12)	Survey of interventional radiologists (308 responses)	60% reported spine complaints; in 25%, spine problems limited work
Moore (13)	Survey of 608 radiologists (236 responses)	50% prevalence of back pain

Gold for radiation protection!



Radial for all!!!

How much equipment can you use
in a single case?!



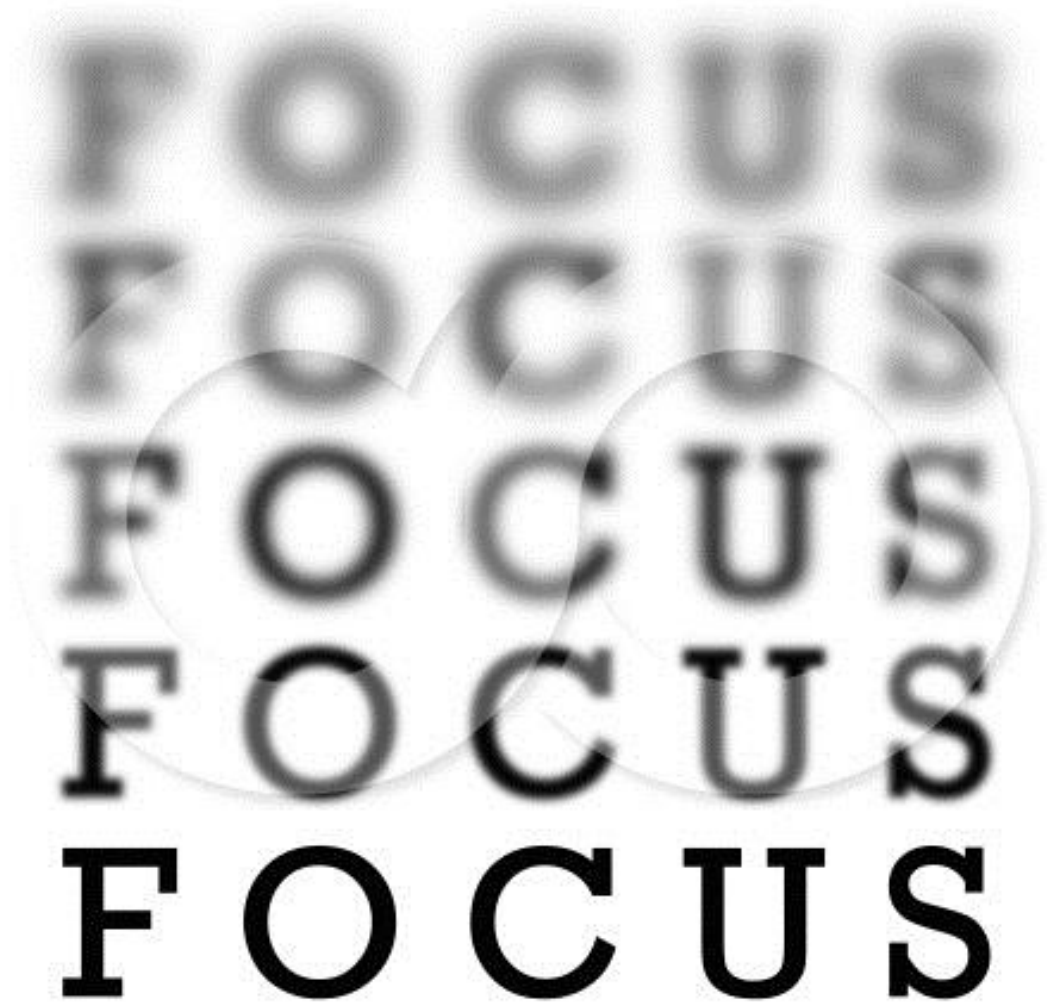
Radial cath = ↓ vascular access complications

At what price?!

1. More difficult to engage
2. Less support
3. Fewer device/strategy options
4. More radiation
 - Stochastic risks
5. More time
6. More contrast - catheters
7. Suboptimal images
 - Defeats purpose of cath!
8. Higher “fatal” risk
 - If somethings goes wrong...



How would you like your coronary angiogram to look like?



← Like this?

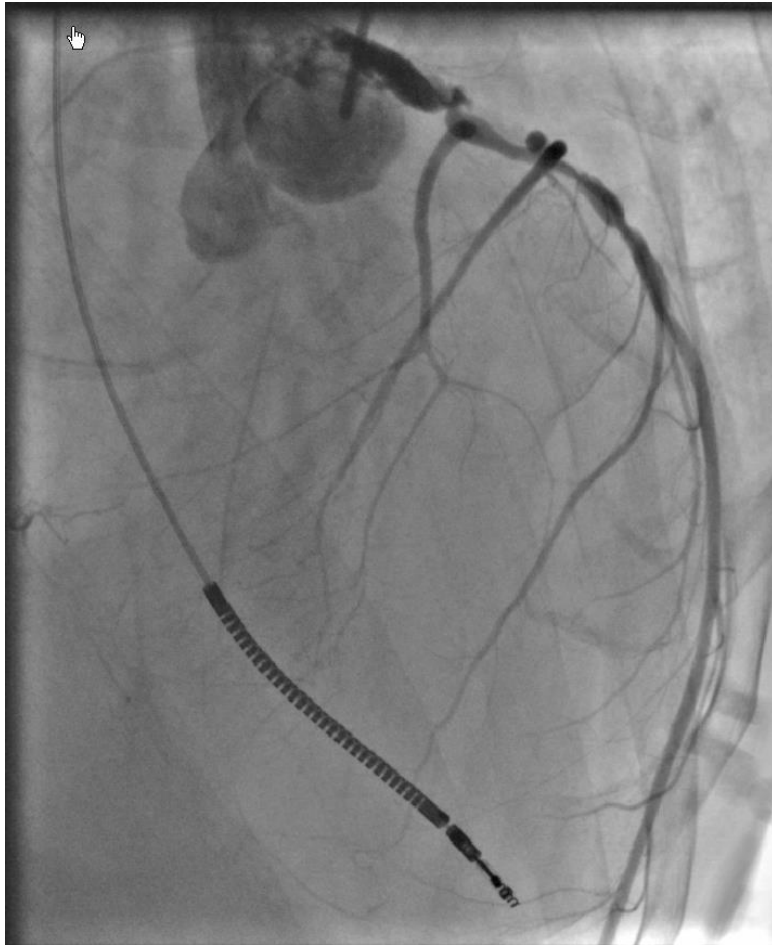
← Or like this?

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If this were you, would you like radial or femoral?



Single remaining vessel



A

Yes

B

No

If you are the patient would you like your PCI done via radial access if you had?

- **Unprotected left main**
- **Complex SVG intervention**
- **CTO**
- **Complex bifurcation**

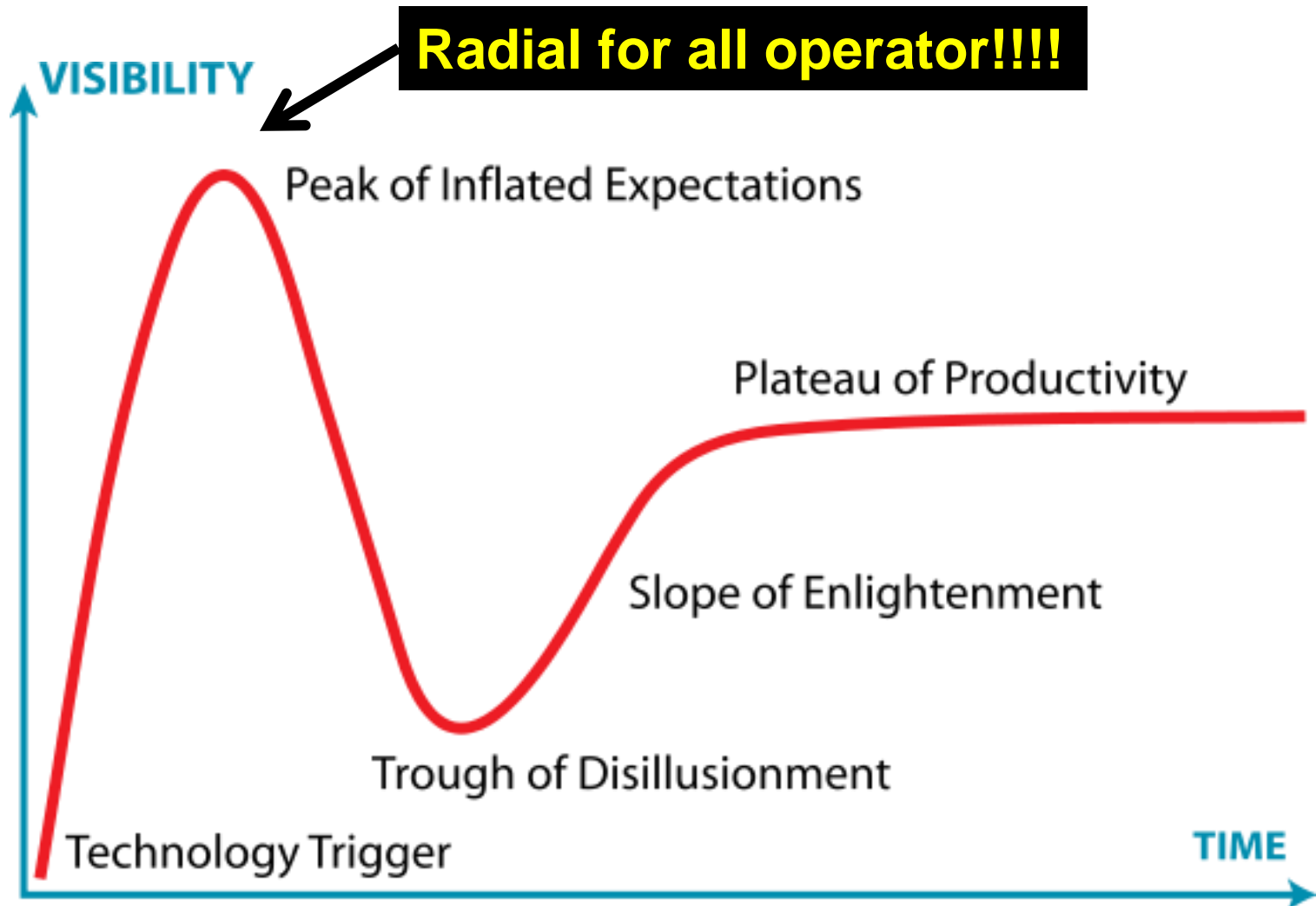
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 - **If somethings goes wrong...**

Adoption curve for new technologies



The people have spoken...



Spontaneous reaction to announcement that RADIAL-CABG patient was randomized to radial