TRI : TIP & TRICKS

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History

- 1948: First attempted transradial coronary angiogram using radial cut-down
- 1989: Campeau reported first 100 cases of percutaneous transradial coronary angiogram
- 1993: First transradial coronary angioplasty with stent implantation performed

Present

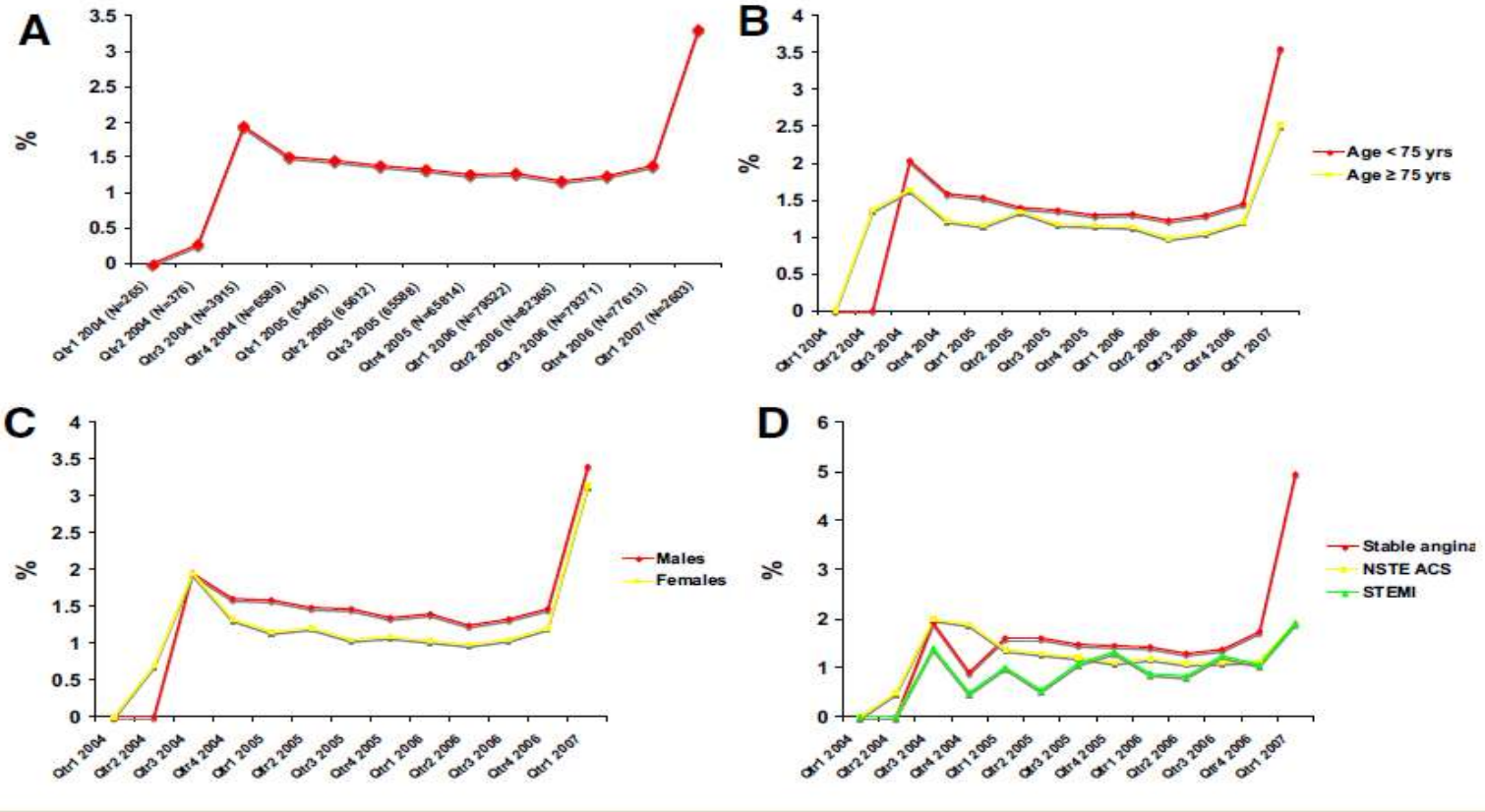
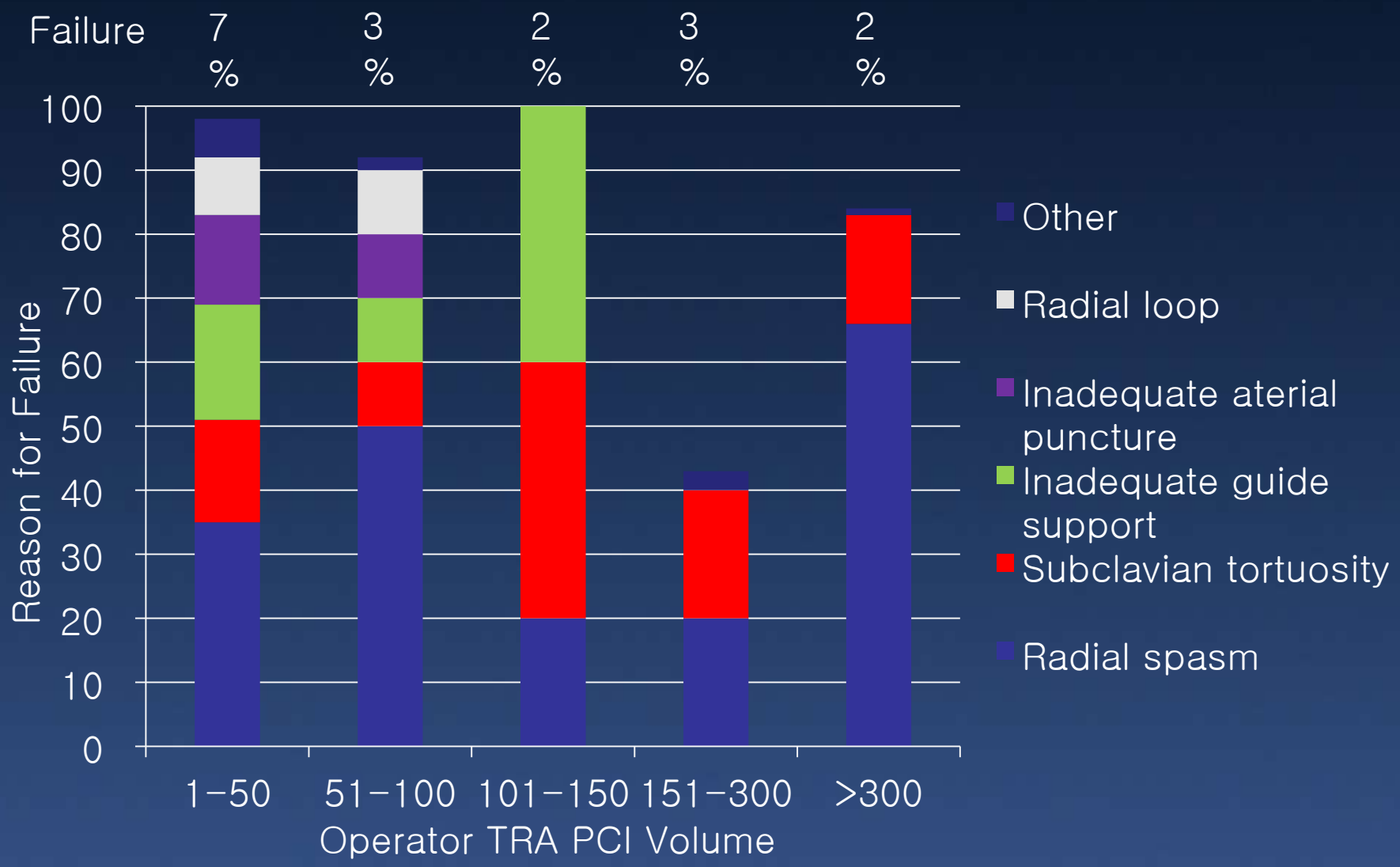


Figure 2. Trend in the Use of r-PCI Over Time in Key Subgroups

Trend in the use of the radial approach to percutaneous coronary intervention (r-PCI) over time in **(A)** the overall dataset; **(B)** patients age <75 and ≥75 years; **(C)** men and women; **(D)** patients with stable angina, non–ST-segment elevation acute coronary syndrome (NSTE ACS), and ST-segment elevation myocardial infarction (STEMI).

Rao et al, JACC Interventions 2008; 1: 379-386

Failure



Circ Cardiovasc Interv 2011;4:336-341

Radial Spasm

Radial Spasm

Cause

- Presence of radial artery anomalies
- Small radial artery caliber
- Multiple catheter exchange
- Larger catheter diameter

Radial Spasm

Management

- Prevention of spasm
- Treatment of established spasm

Prevention of spasm

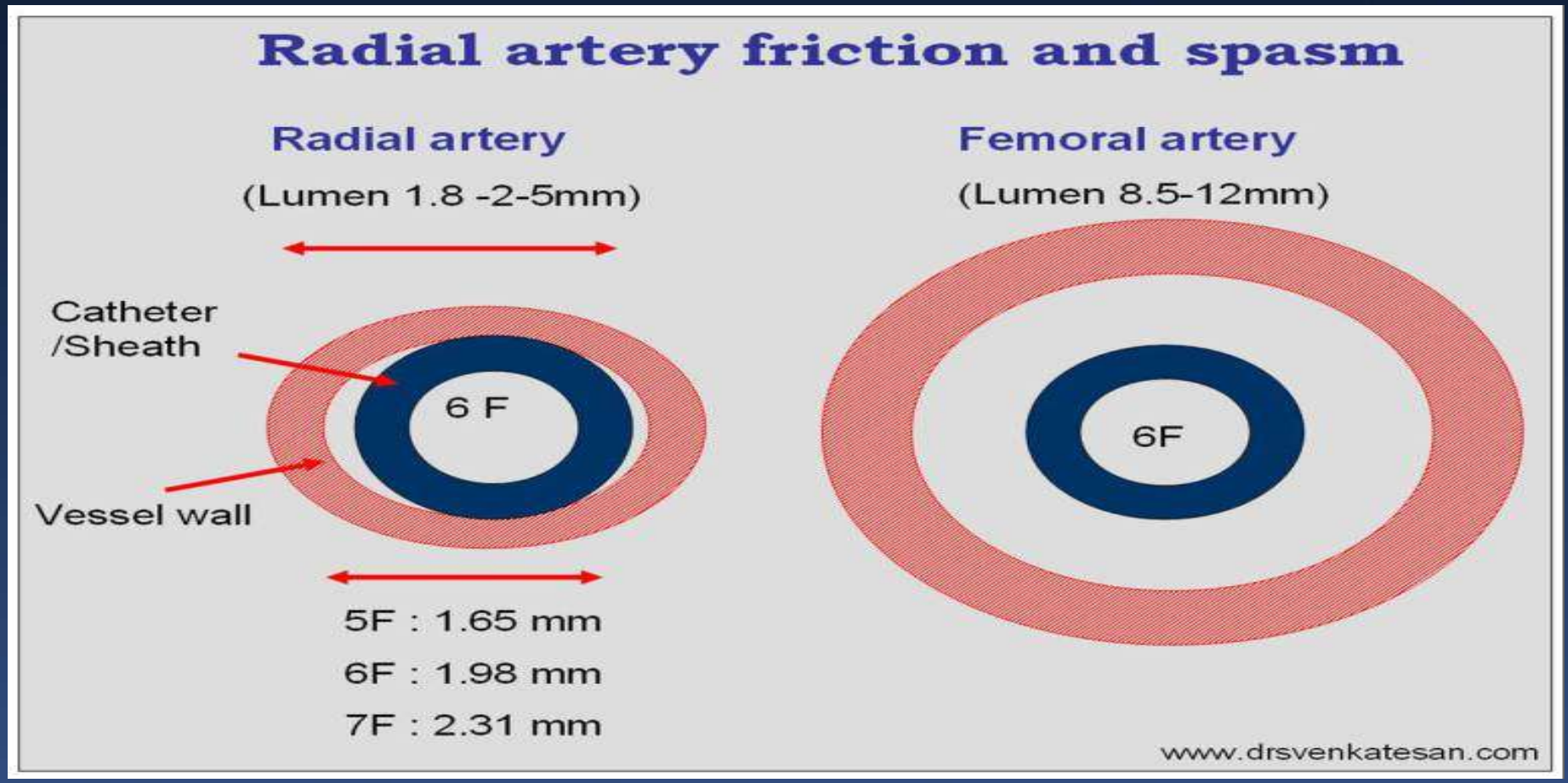
Multiple catheter exchange

- Used to both engage catheter

  (Tiger II, Multipurpose, Amplatz, Kimny)

Prevention of spasm

Small radial artery & Larger catheter mismatch



Prevention of spasm

What are ways one can estimate the size of the radial artery ?

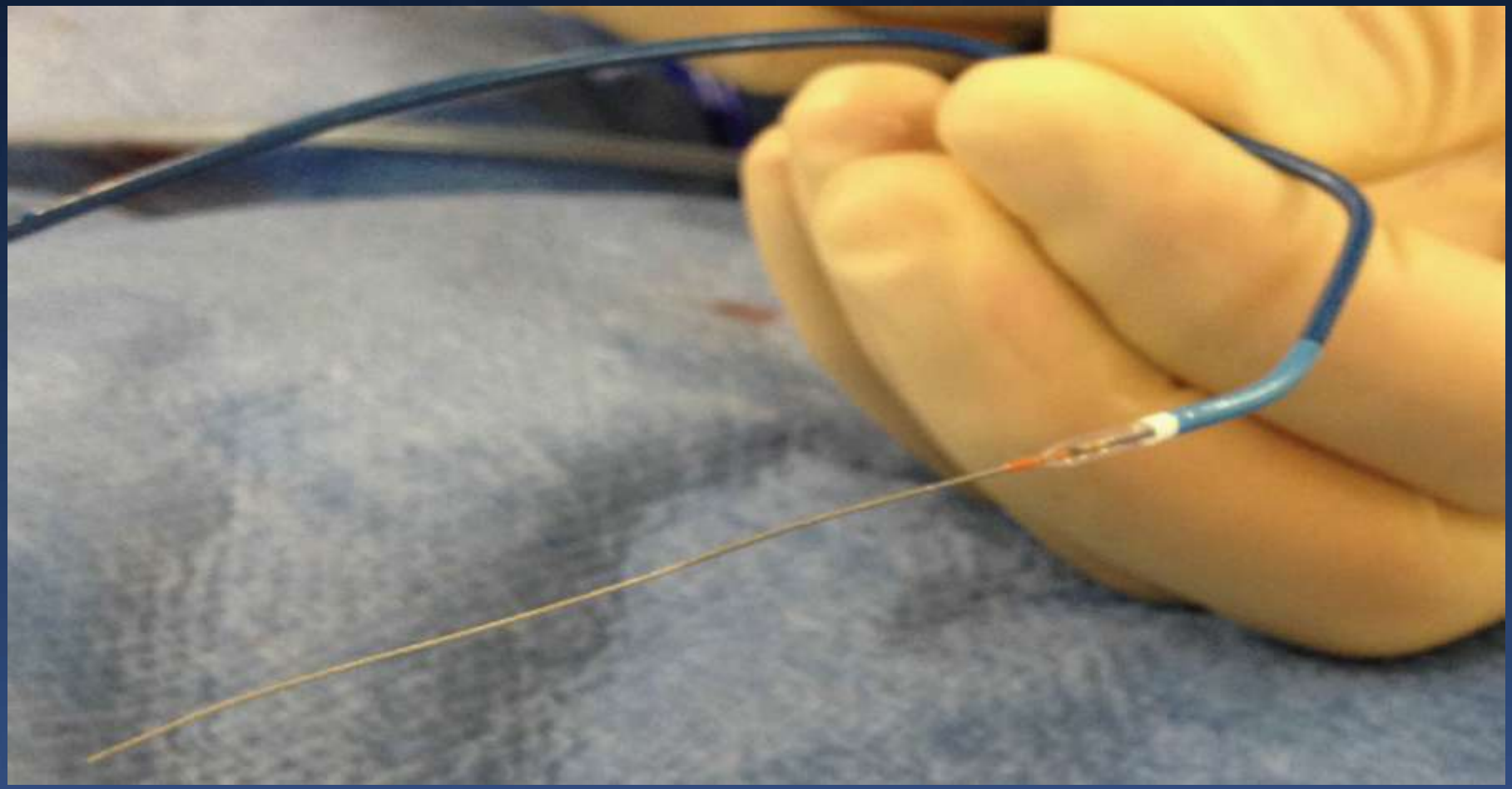
- Volume of pulse
- Ultrasound imaging

Treatment of established spasm

- Repeat NTG and Verapamil
- IV sedation (Midazolam)
- Warm compresses over the forearm
- Wait for an hour and try pushing again
- Balloon Assisted Tracking

Treatment of established spasm

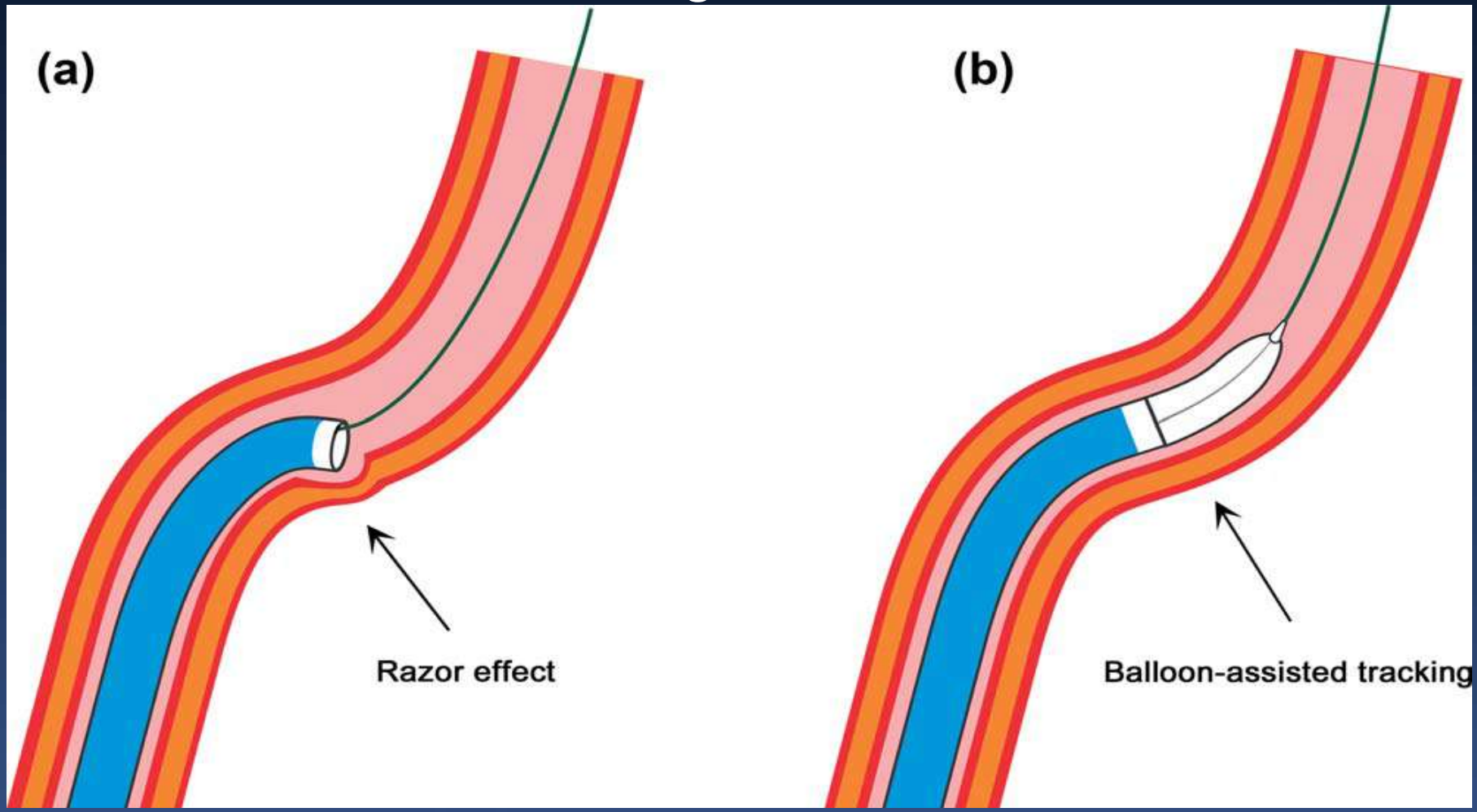
Balloon Assisted Tracking



Hindawi Publishing Corporation Case Reports in Cardiology
Volume 2014, Article ID 214310, 3 pages

Treatment of established spasm

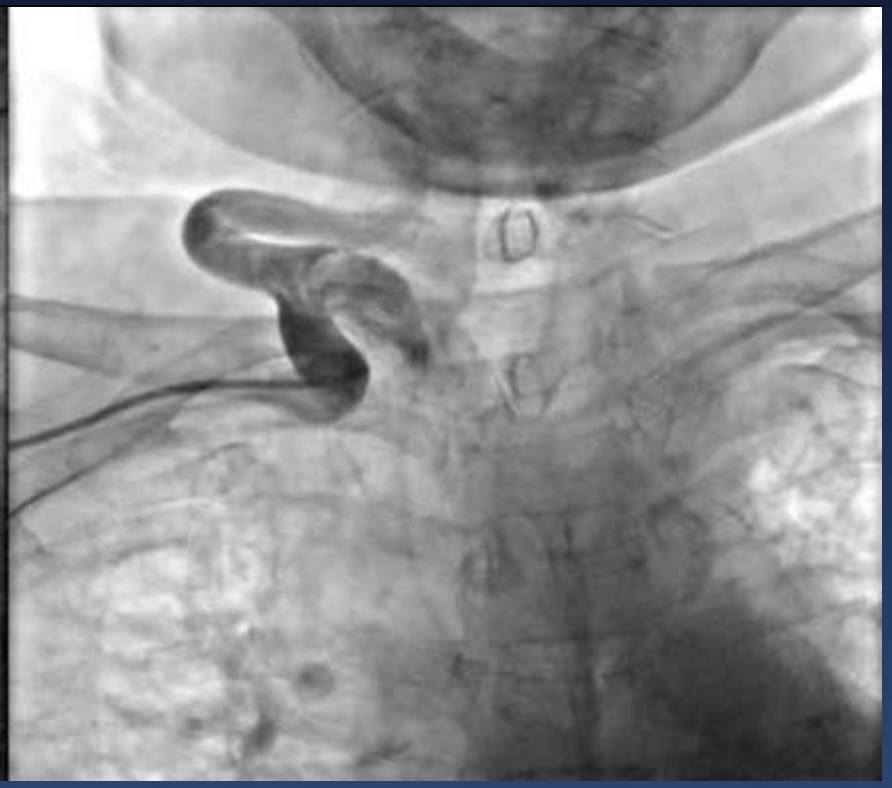
Balloon Assisted Tracking



Subclavian Tortuosity

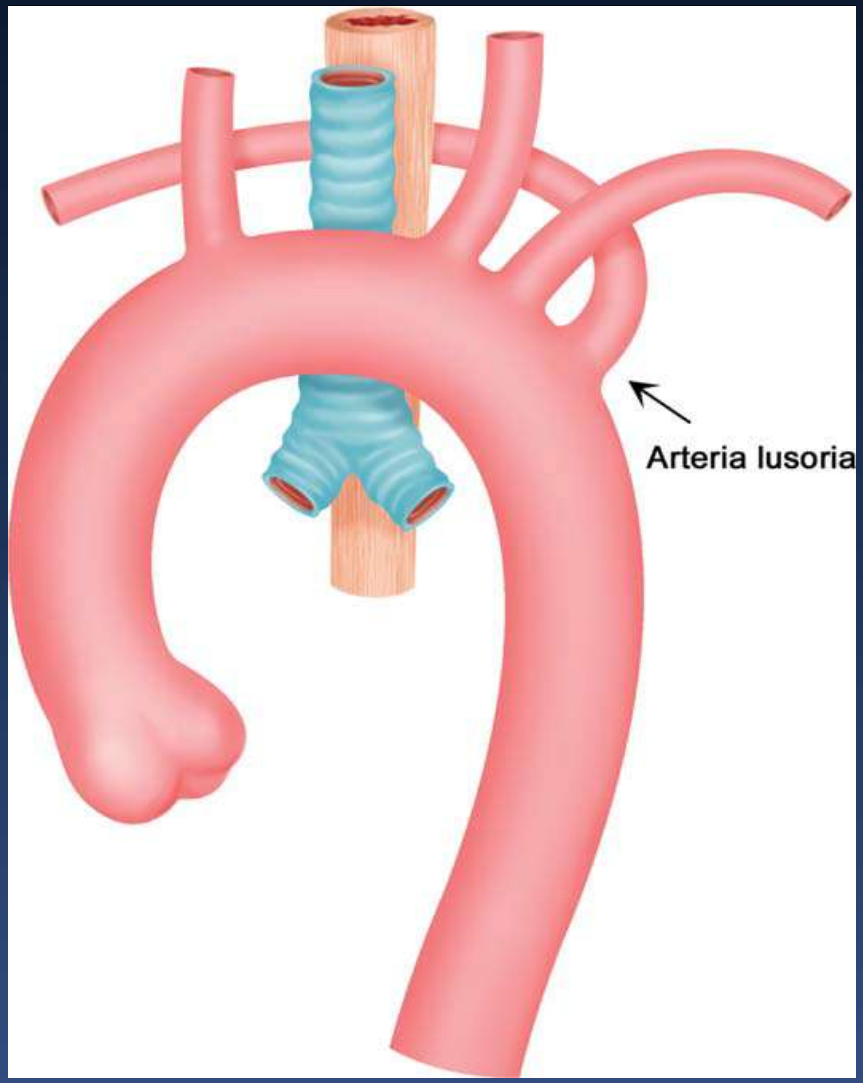
Subclavian Tortuosity

Simple Tortuosity

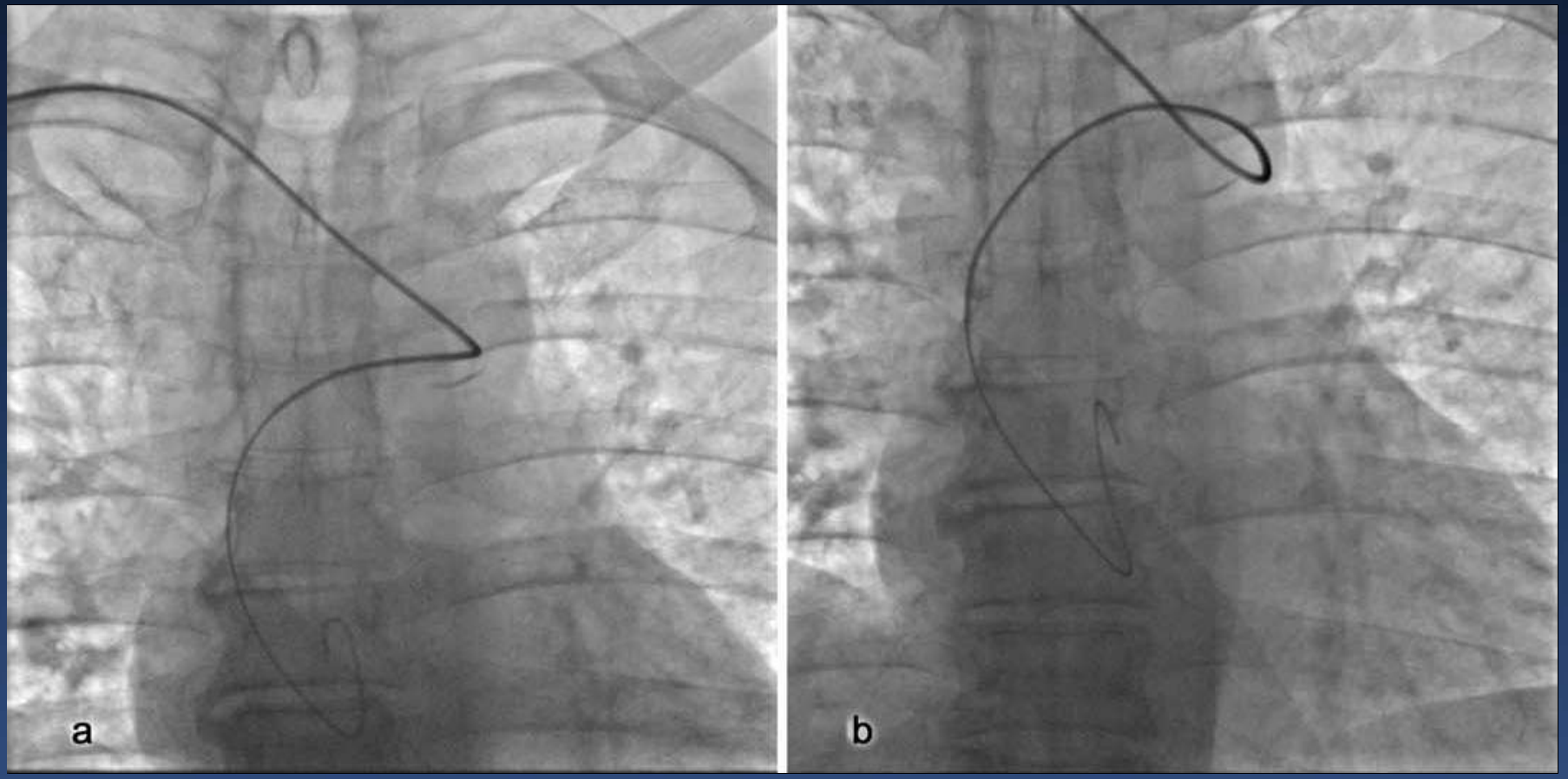


Complex Tortuosity

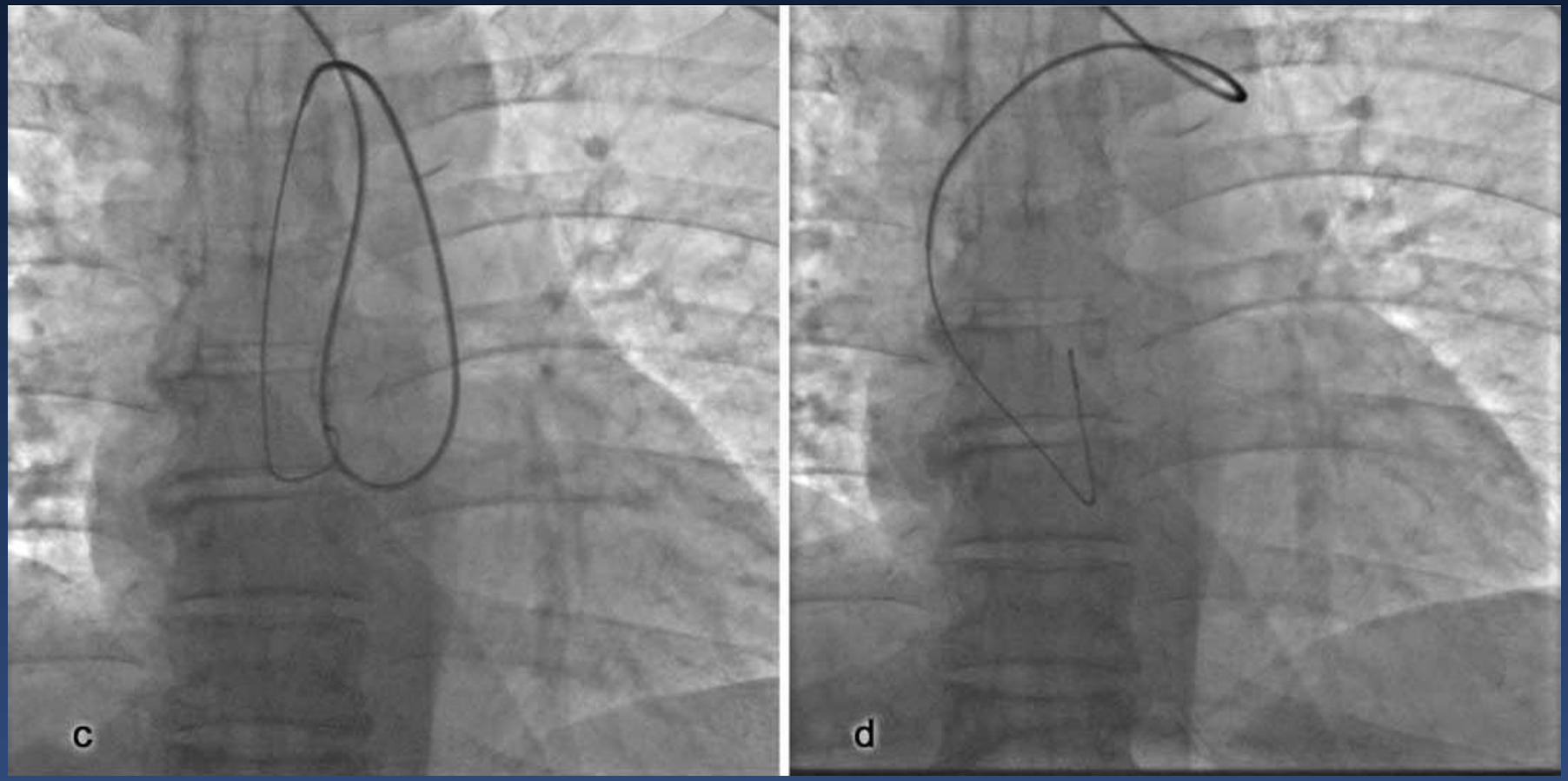
Arteria lusoria



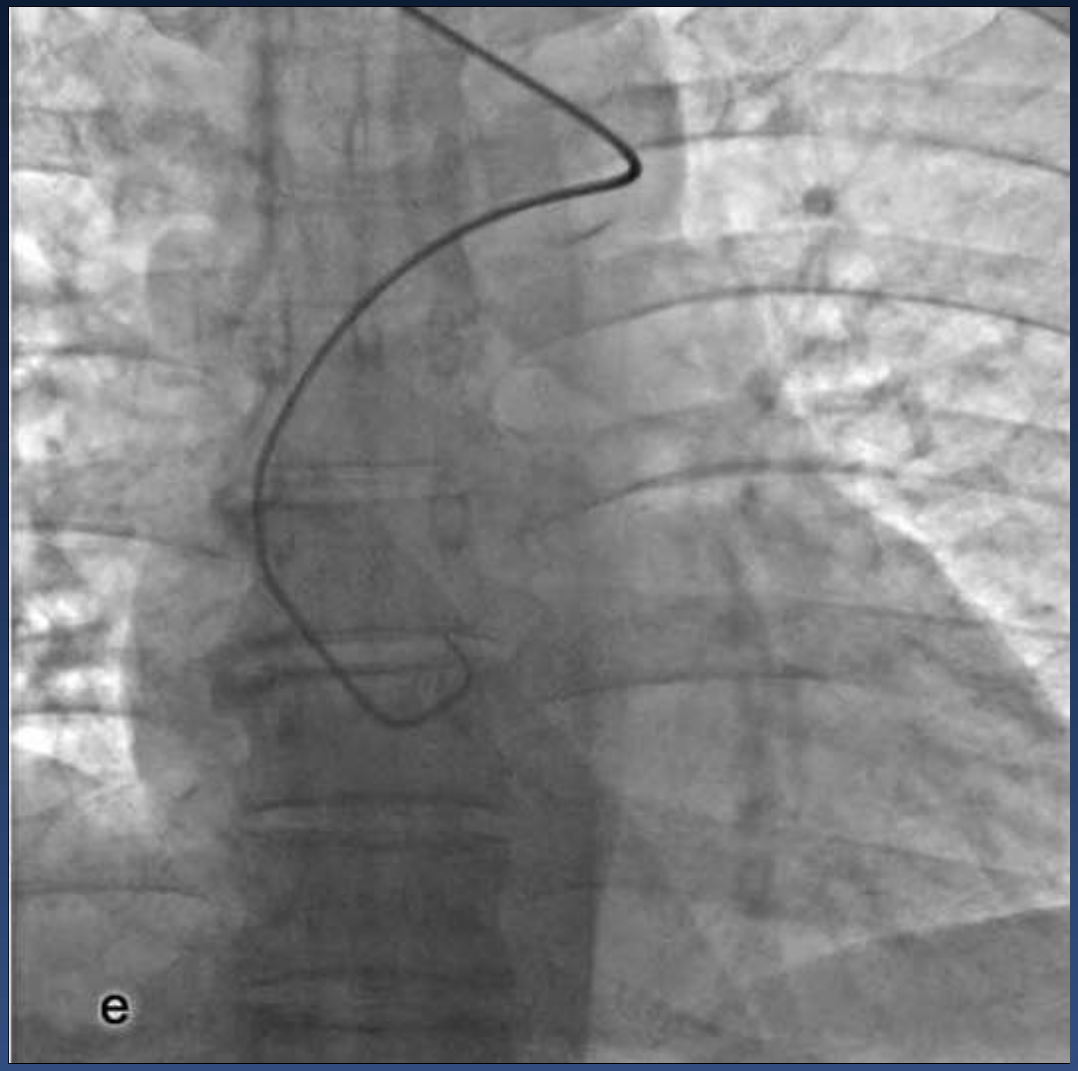
Arteria lusoria



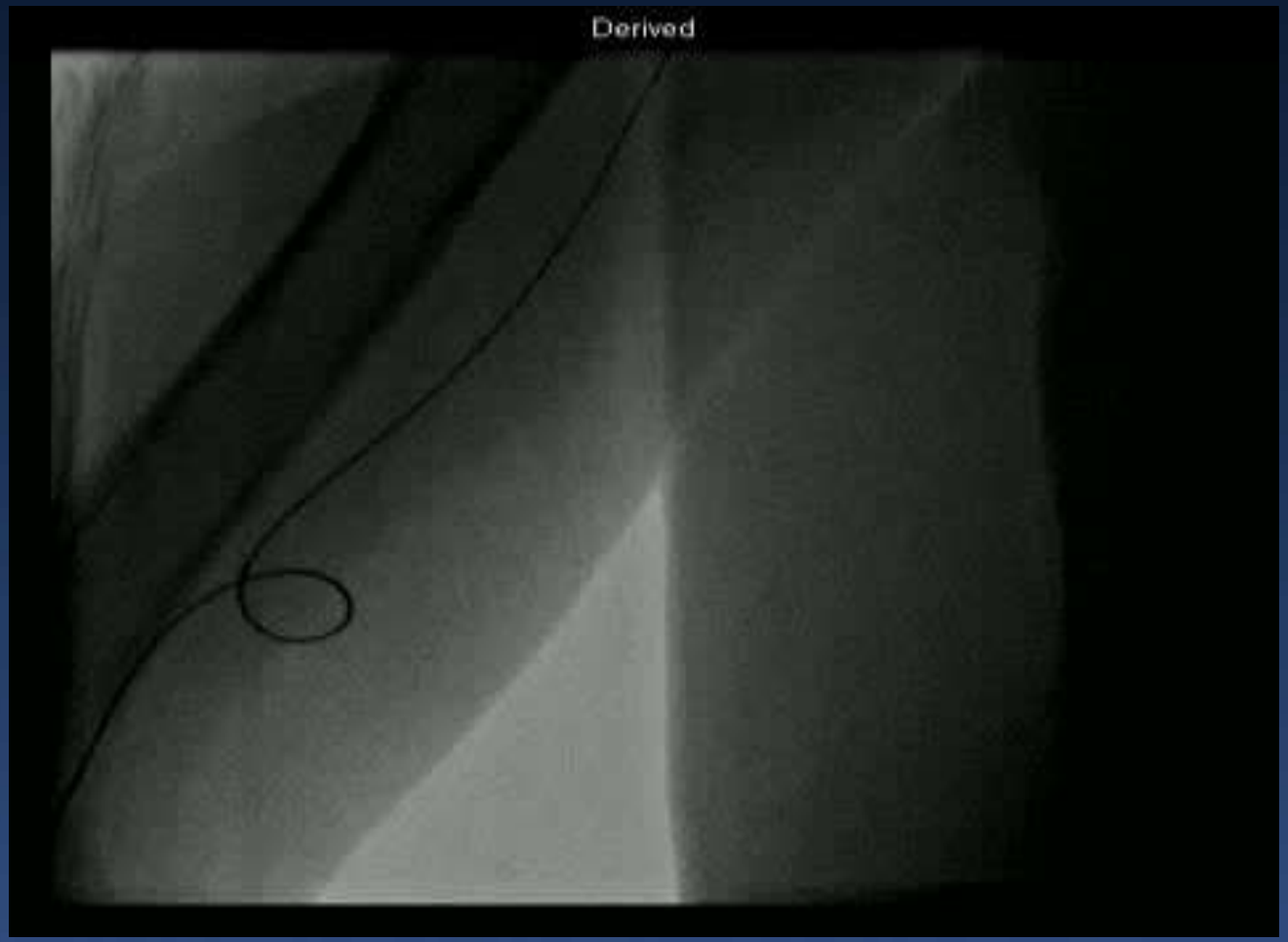
Arteria lusoria



Arteria lusoria

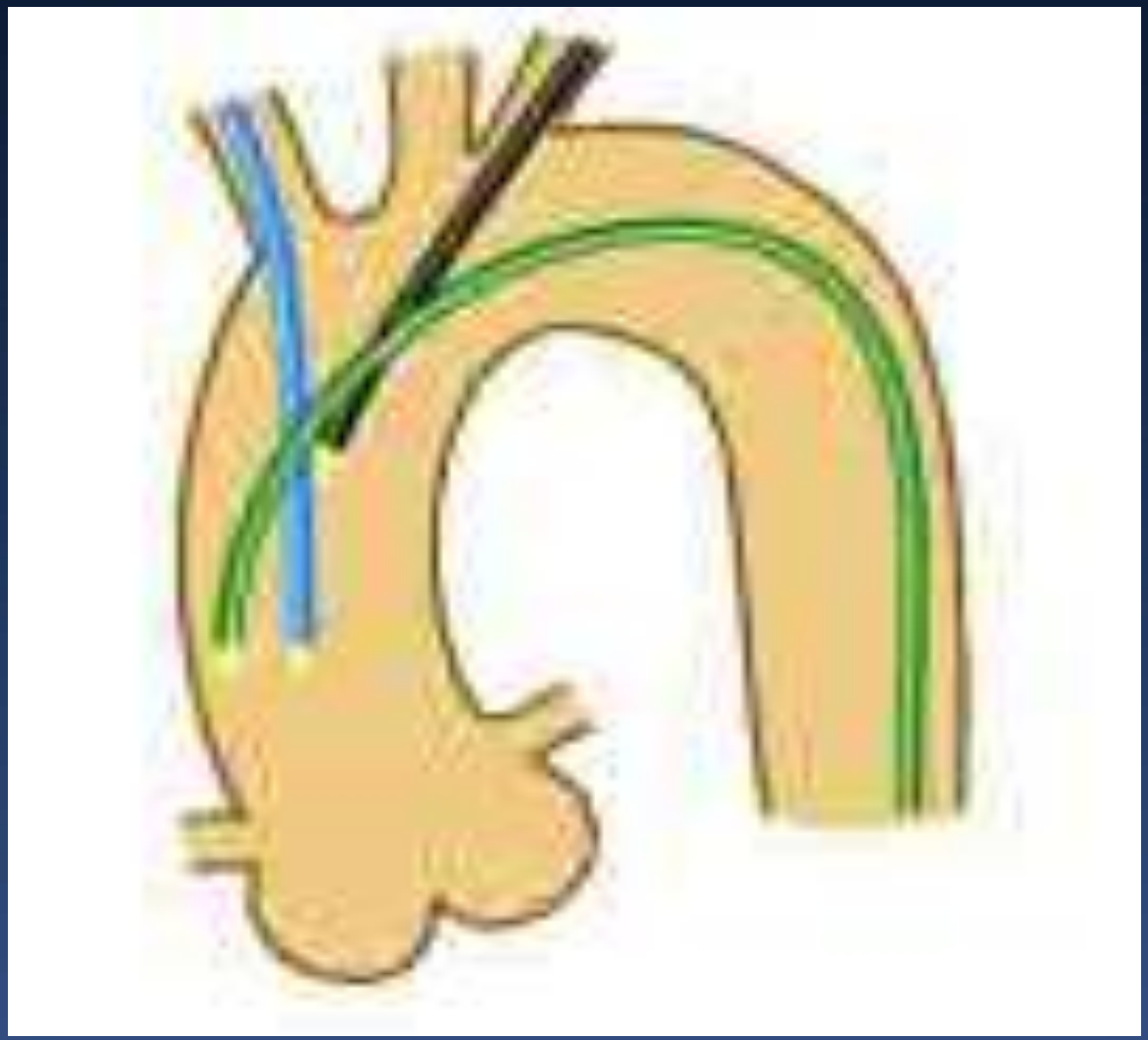


Artery Loops



Artery Loops

Inadequate Guide Support



Inadequate Guide Support

General consideration in selection of GC

- Radial artery size and spasm
- Lesion site and morphology of coronary artery

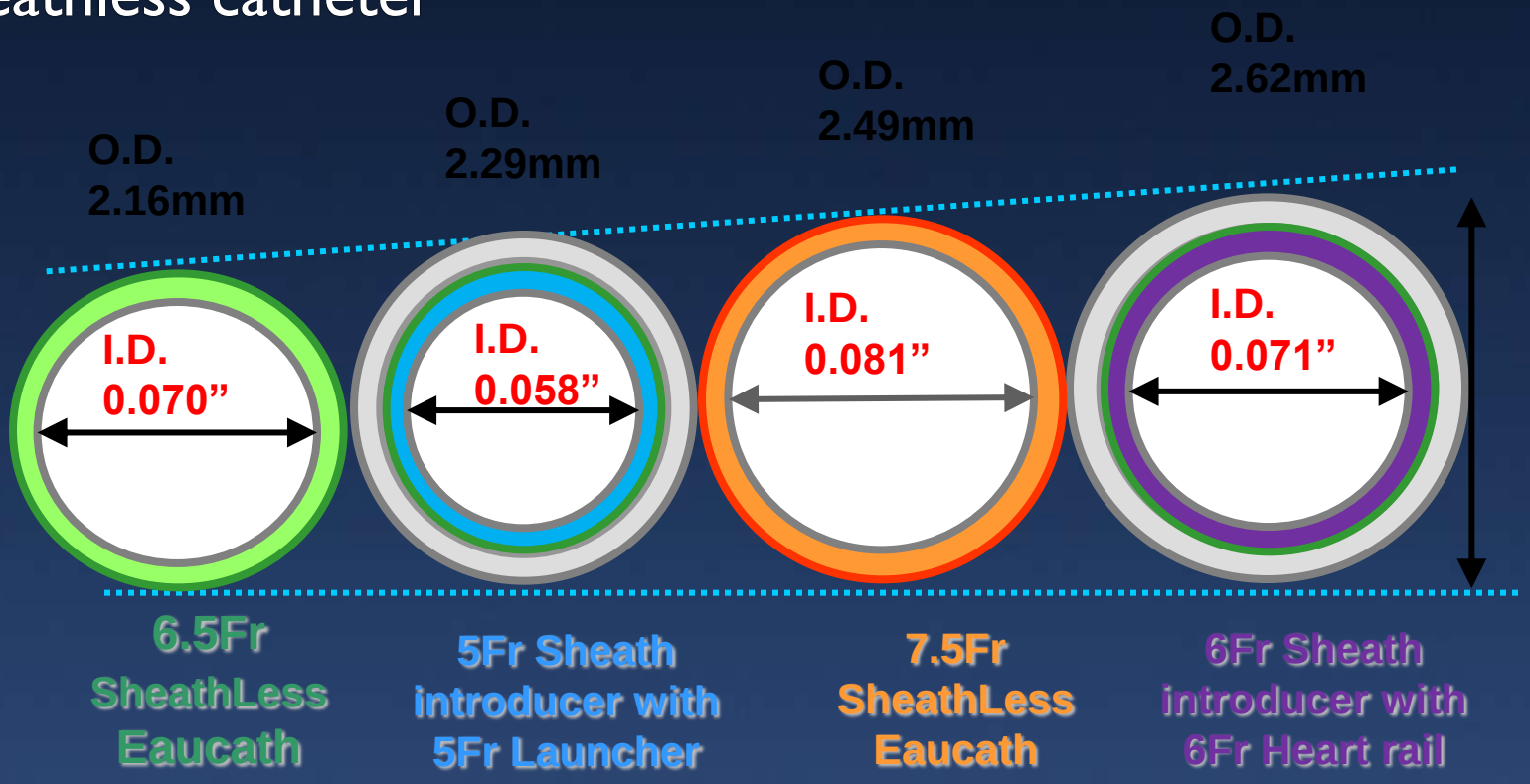
Radial artery size and spasm

Catheter Size	Devices	Technique
5 F	• Balloon ≤ 5 mm • Stent ≤ 4.5 mm • Intravenous ultrasound (Eagle Eye catheter, Volcano Corporation, San Diego, CA; OptiCross coronary imaging catheter, Boston Scientific Corporation, Natick, MA) • Cutting balloon 2.5 mm • Rotablator 1.25 mm (Boston Scientific Corporation)	Two wires allowed for bifurcation but no kissing balloons (only for slender techniques in Japan[a])
6 F	• All balloon sizes • All stent sizes • Intravenous ultrasound (Eagle Eye and Revolution catheters, Volcano Corporation) • Optical coherence tomography • Cutting balloon > 2.5 mm • Rotablator ≤ 1.5 mm • Thrombectomy devices • Saphenous vein graft protection devices • Mother-child • GuideLiner	Kissing balloon
7 F[b]	Rotablator > 1.75 mm	Kissing stents

[a]Note, the "slender technique" is an approach used in Japan to minimize the diameter of guide catheters, guidewires, and puncture sites.
[b]An alternative to 7–8 F outside the United States is to use Asahi sheathless 6.5- or 7.5-F devices (Asahi Intecc USA, Inc., Santa Ana, CA).

Radial artery size and spasm

Sheathless catheter



Lesion site and morphology of coronary artery

- LAD

Narrow aortic route and higher positioned left main ostium (XB)

High coronary take-off (Multipurpose or Amplatz)

Wide aortic root (Judkins or Amplatz)

Lesion site and morphology of coronary artery

- Lcx

High take-off(Multipurpose or Amplatz)

Horizontal or wide aortic root (JL)

Short left main(AL1)

Lesion site and morphology of coronary artery

- RCA

Wide Ascending Aorta (MP)

Left sinus originated RCA (larger JL AL MP)

Backup Support

- Buddy wire technique
- Anchor balloon technique
- Mom & Child technique

Conclusion

- Recently transradial approach rapidly has become widespread throughout the world and the major approach for coro
- Development spec success rate.
- But, I think..

Thank you for your attention