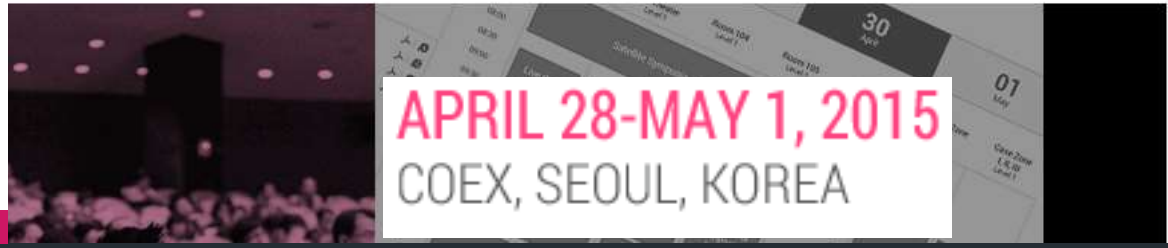
20th CARDIOVASCULAR SUMMIT

TCTAP 2015



Transradial Access for Carotid Artery Stenting: How We Improve Procedure Technique

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Potential conflicts of interest

Piotr Pieniazek, MD, Ph.D.

- **I have the following potential conflicts of interest to report.**

Consulting; Study Honoraria; Travel Expenses; Trials Involvement:

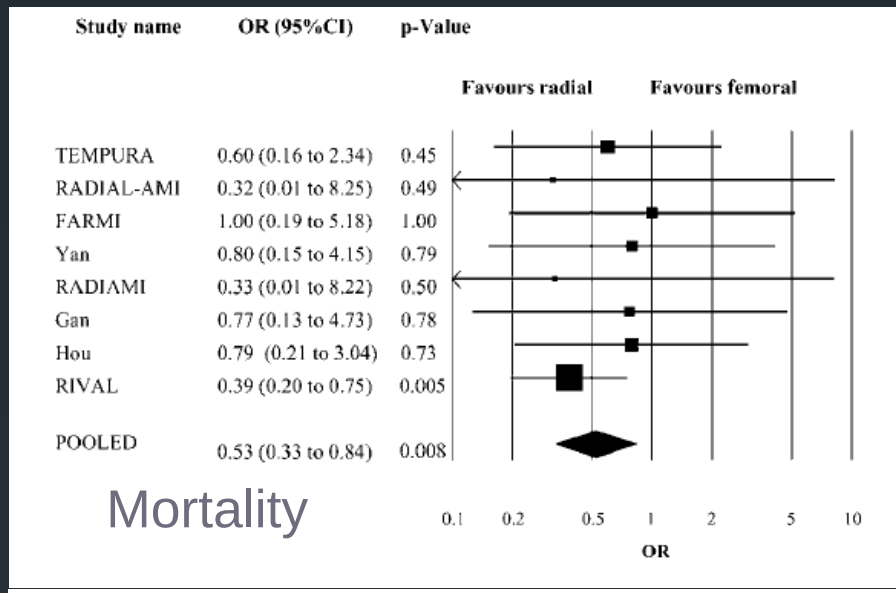
- **Boston Scientific**
- **Abbott**
- **Medtronic**
- **Terumo**
- **Cordis**
- **Astra Zeneca**

History

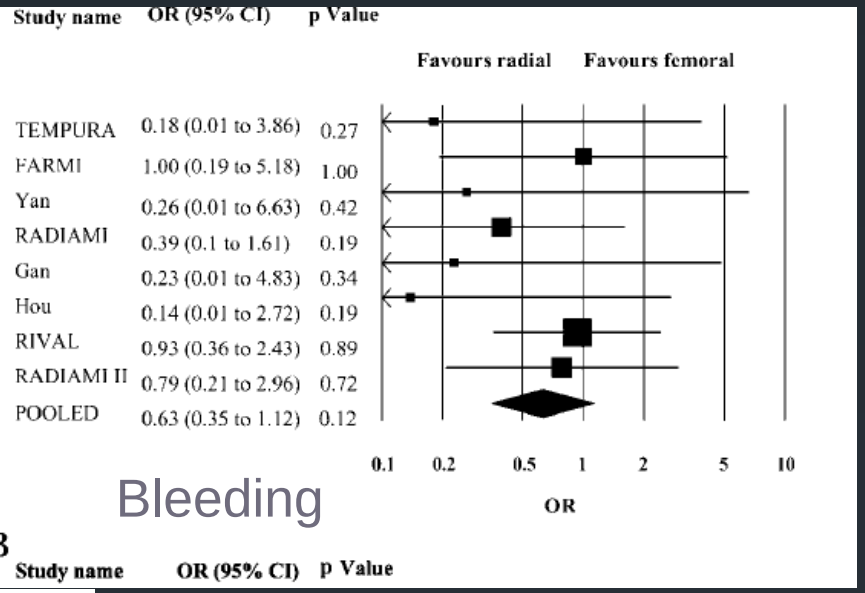
- Transradial catheterization first described by Radner in 1948.
- In 1989, Campeau et al revisited Radner's idea & reported on percutaneous entry into distal radial artery for selective coronary angiography in 100 pts.
- In 1992, Kiemeneij et al used Campeau's work as the basis for developing TRI.

1. Radner S. Thoracal aortography by catheterization from the radial artery; preliminary report of a new technique. *Acta radiol. 1948;29:178-80.*
2. Campeau L. Percutaneous radial artery approach for coronary angiography. *Cathet Cardiovasc Diagn. 1989;16:3-7.*
3. Kiemeneij F, Laarman GJ, de Melker E. Transradial coronary artery angioplasty. *Am Heart J. 1995;129:1-7.*

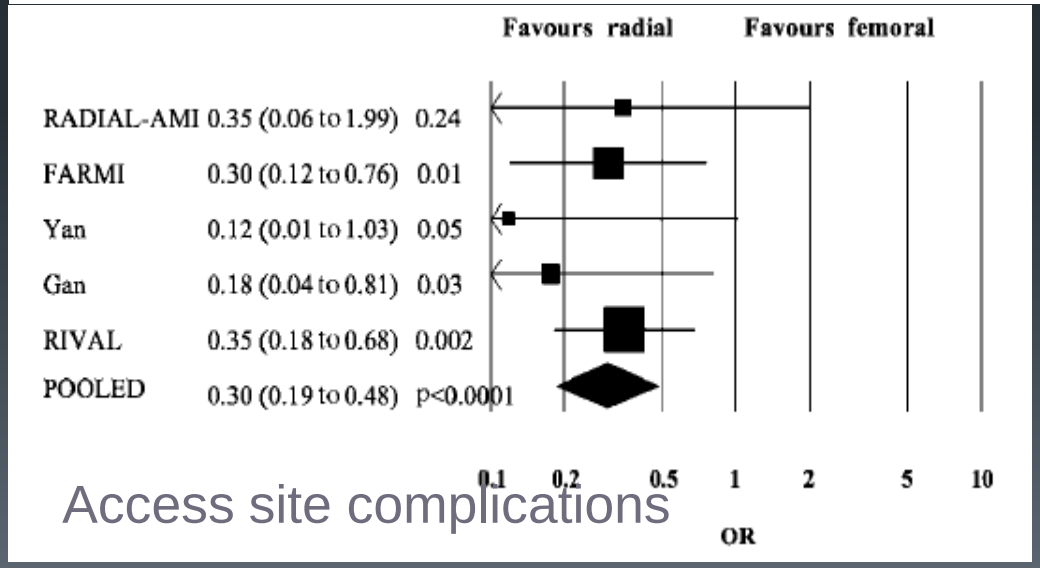
Meta-analysis of Radial vs. Femoral in STEMI



Mortality



Bleeding



Access site complications

Mamas et al Heart 2012

High risk criteria for CEA

Anatomical Criteria	Medical Comorbidities
Lesion at C-2 or higher	Age ≥ 80 yrs
Lesion below clavicle	Class III/IV congestive heart failure
Prior radical neck surgery or radiation	Class III/IV angina pectoris
Contralateral carotid occlusion	Left main/≥2 vessel coronary disease
Prior ipsilateral CEA	Urgent (<30 days) heart surgery
Contralateral laryngeal nerve palsy	LV ejection fraction ≤30%
Tracheostoma	Recent (<30 days) myocardial infarction
	Severe chronic lung disease
	Severe renal disease

Bates et *al.*
ACCF/SCAI/SVMB/SIR/ASITN
Clinical Expert Consensus Document

JACC Vol.49, No. 1,2007 January 2/9, 2007:126-70

SAPPHIRE STUDY
Trial Design and Patient Flow

Evaluated by panel of physicians (interventionalist, surgeon, neurologist) who concur on qualification of patient
n = 747

Surgeon: unacceptable risk for CEA

Surgeon & Interventionalist will treat patient

Interventionalist: unacceptable risk for stenting

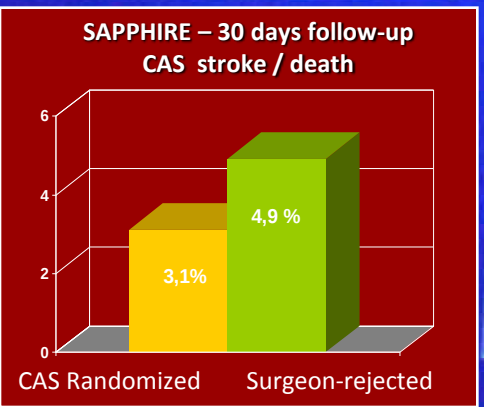
Non-Randomized Stent Arm n=406

RCT
334 Randomized (310 Treated)

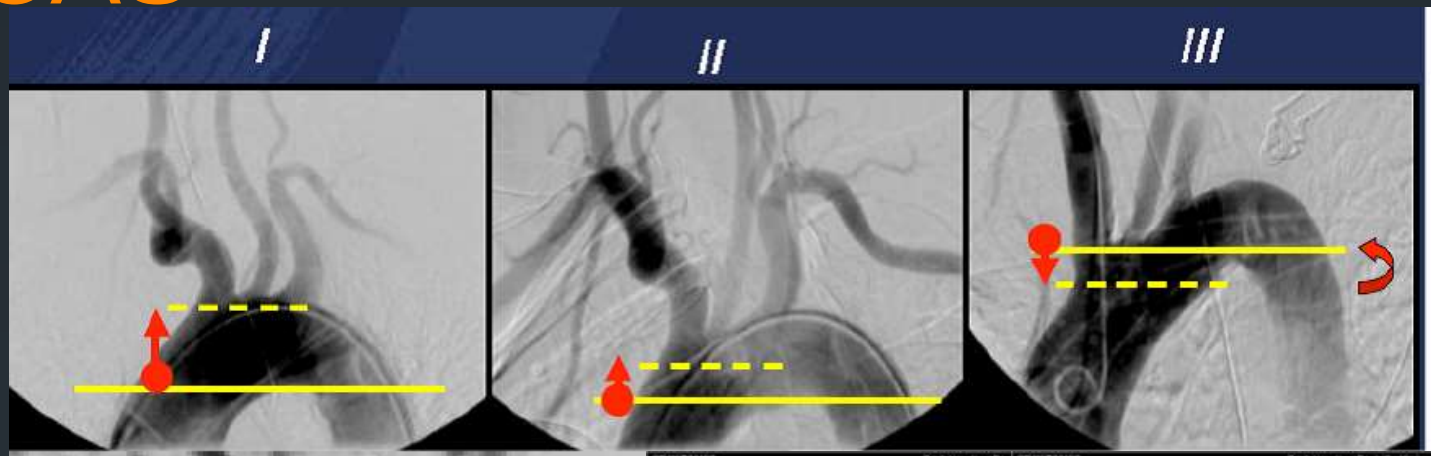
Non-Randomized CEA Arm n=7

Stent Treatment n=167

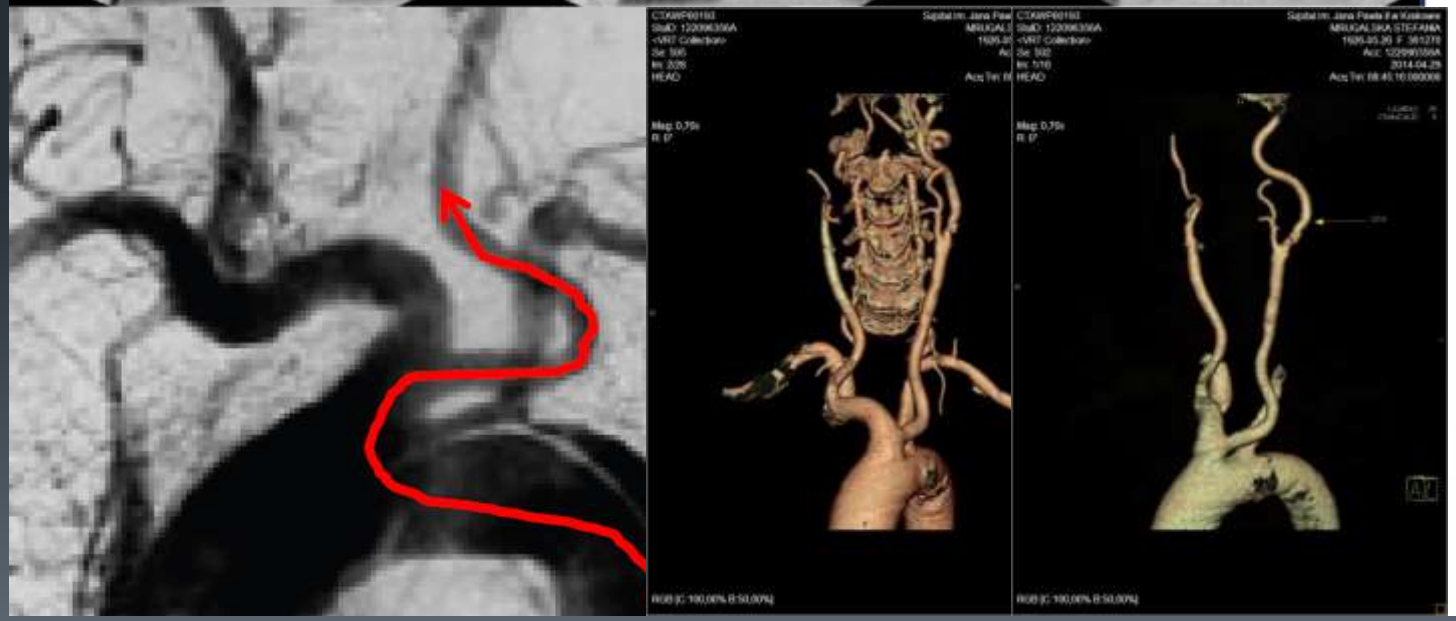
CEA Treatment n=167



Caniulatiom difficulties of CCA during CAS



Aortic arch



Bovine arch

Femoral Approach Limitations !!!

Aorto-Iliac disease or occlusion
(Lerishe'a Syndrom)

Previous surgical bypass at peripheral field

After stent graft implantation

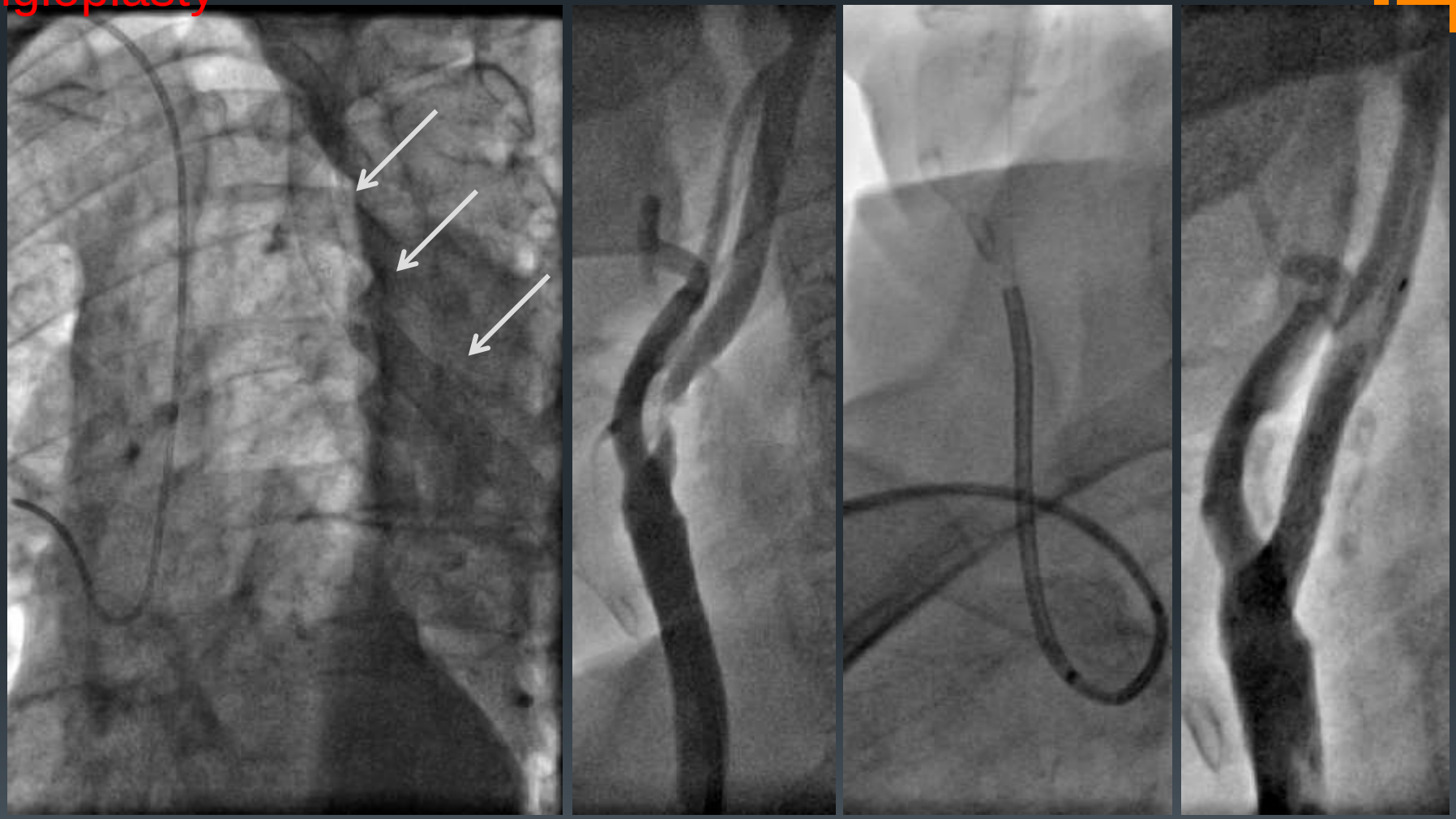
Significant overweight

Large hernia

Need for prolong stay in bad in pts with spine pain syndrome

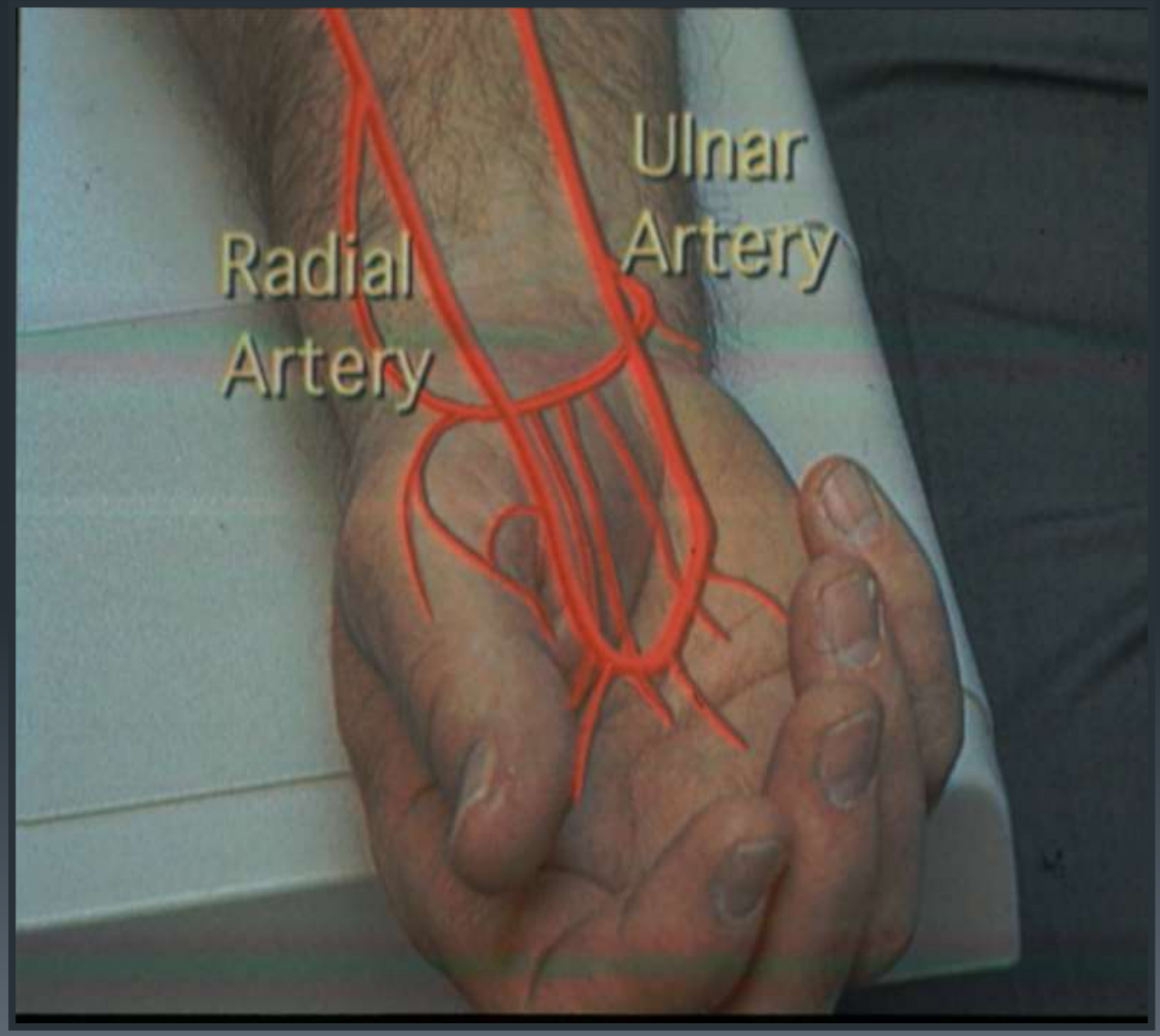
Haematological disease or Coumadin therapy

RICA – symptomatic stenosis 80% - 60mm stent hanging in Aorta that jumped to the aorta when someone tried to do LSA angioplasty

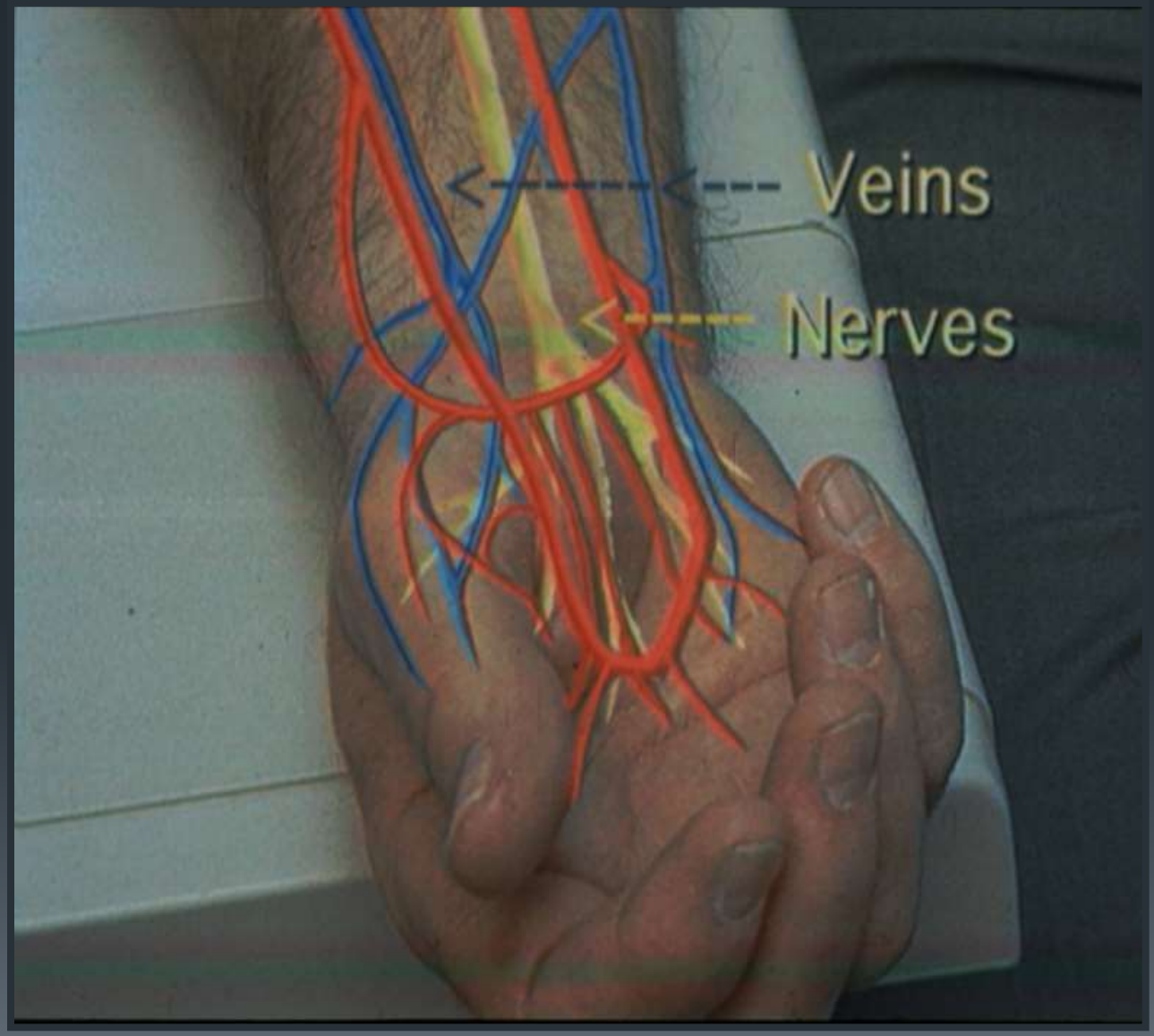


Patient after this complication rejects any possibility of surgical treatment . Very gently RICA intubation and RICA stenting !!!!

The Anatomy



The Anatomy



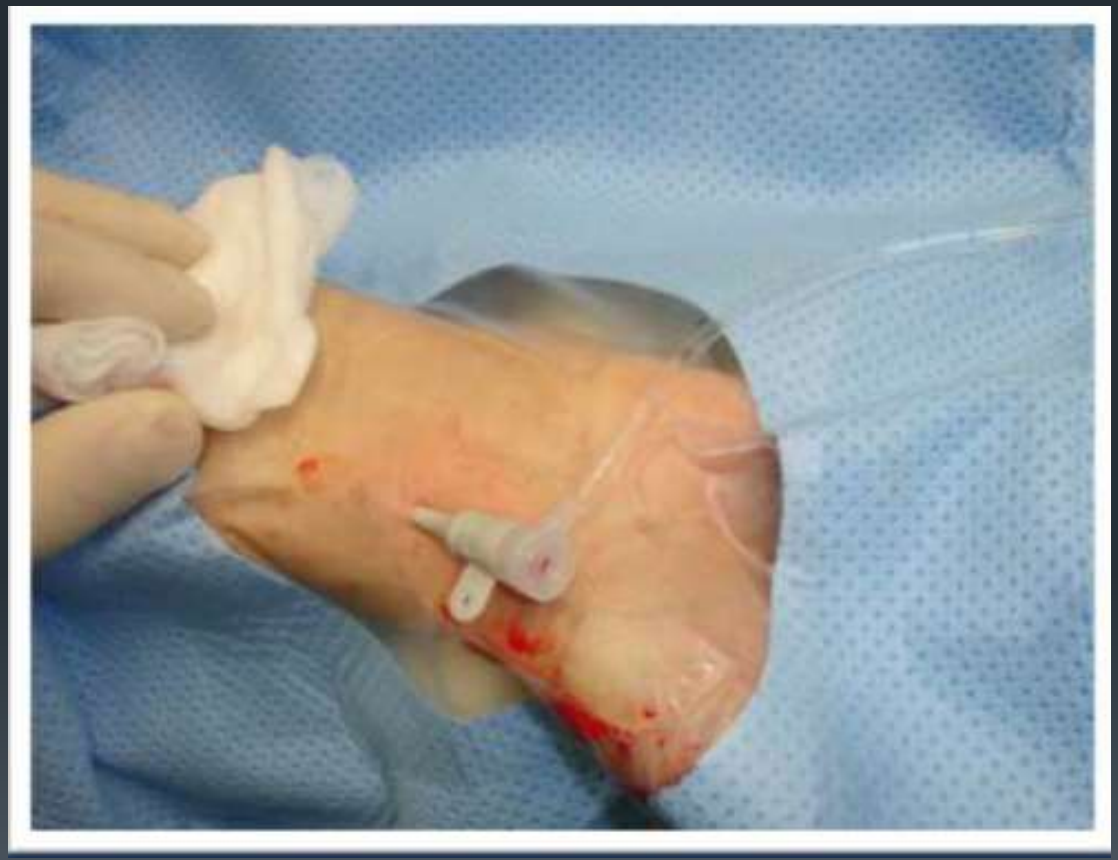
Allen's Test - Can be performed ± Oximetry test

Peripheral vascular diseases. Edgar van Nuys Allen, MD and others with associates in the Mayo Clinic and Mayo Foundation; 2nd edition, Philadelphia, Saunders, 1955.

Allen's Test - Can be performed ± Oximetry test

- We recommend that, in the presence of an abnormal AT, the RA should not be used for cardiac catheterization unless the risk of using the femoral approach is excessive. Greenwood et al. JACC Vol. 46, No. 11, 2005, 2005:2013–7

Radial access - special transradial sheath 6F or 7F/11cm



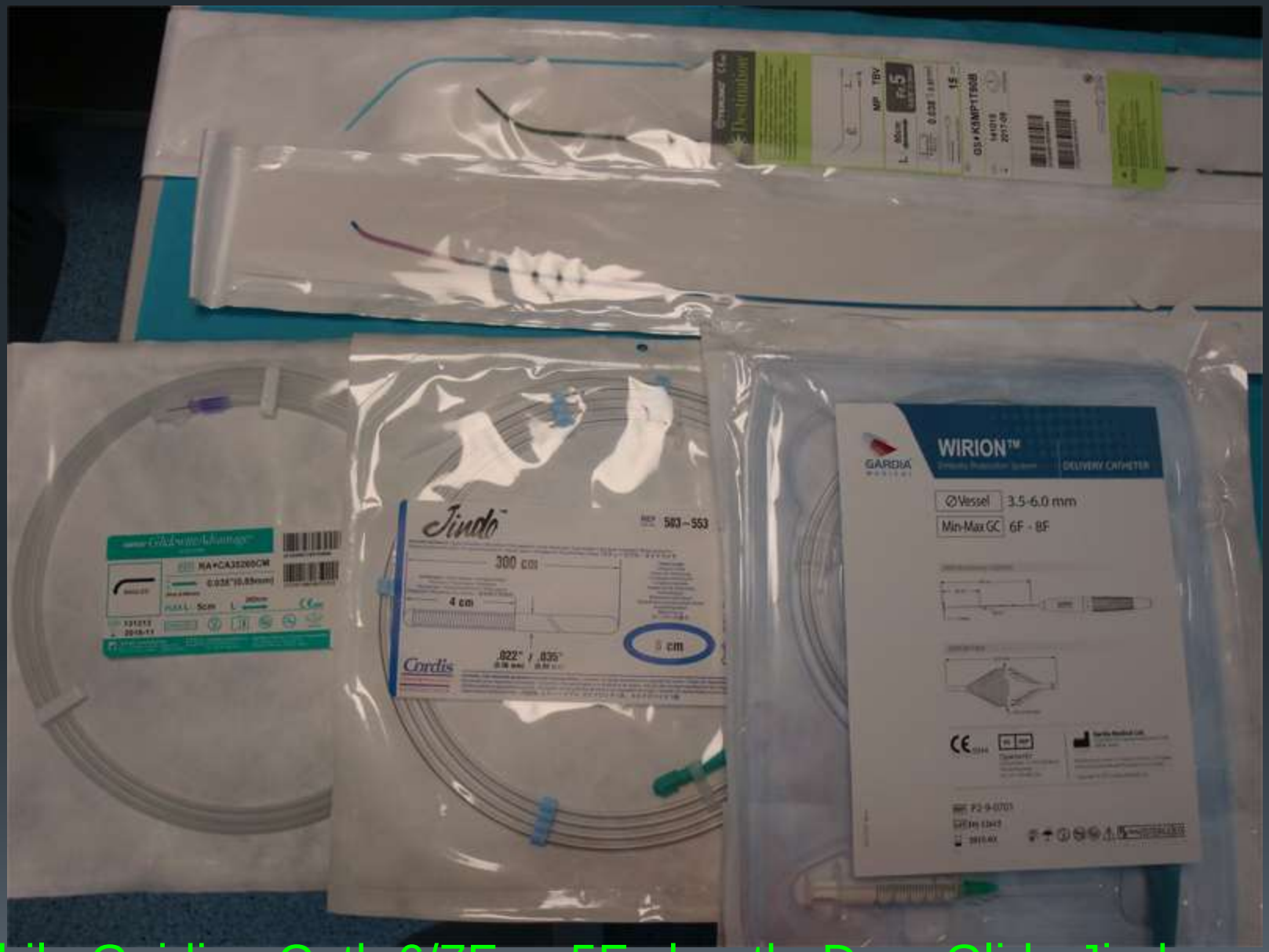
Antispasmolitic coctail

2.5mg Verapamil

200ug Nitrologliceryn

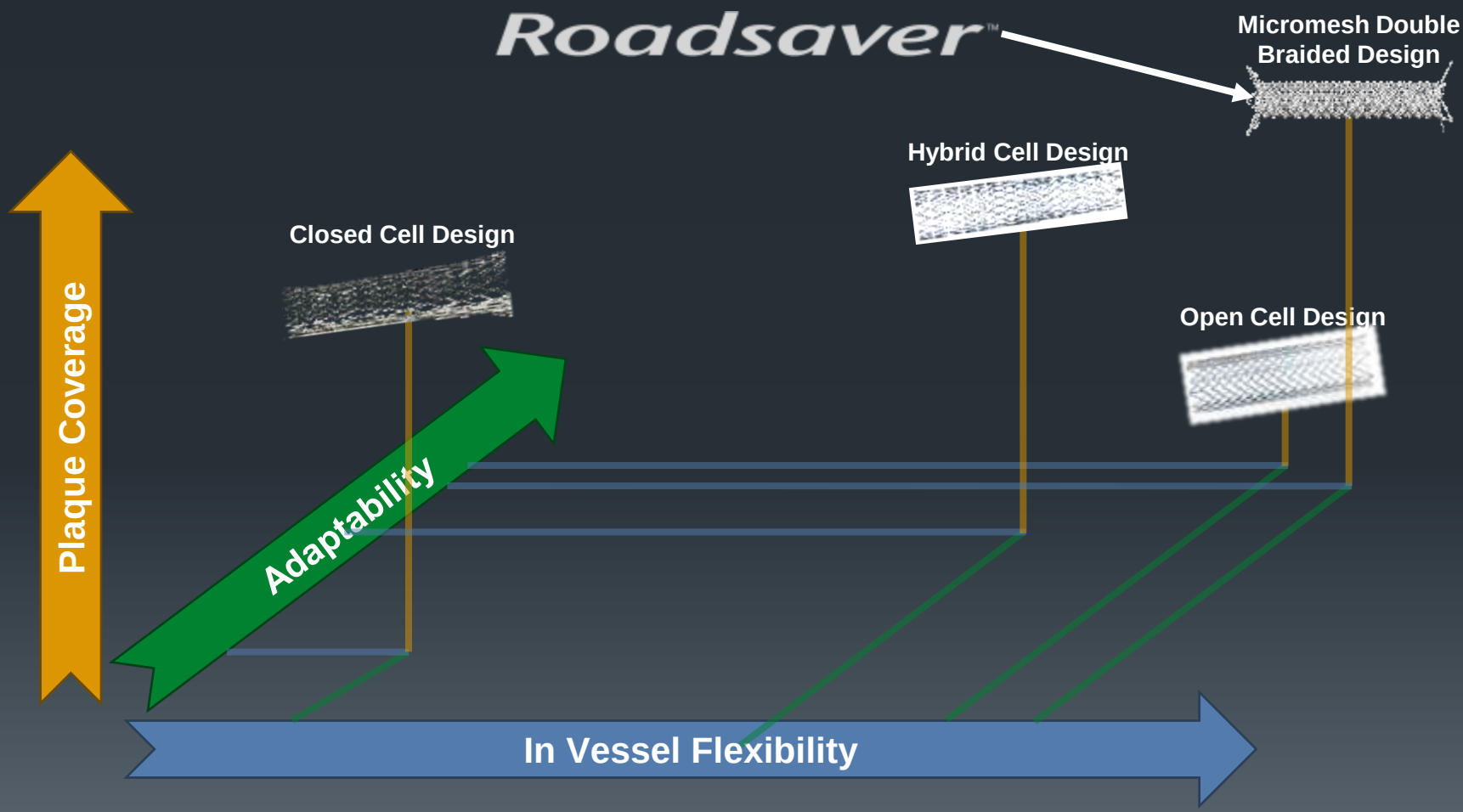
5000 IU Heparin

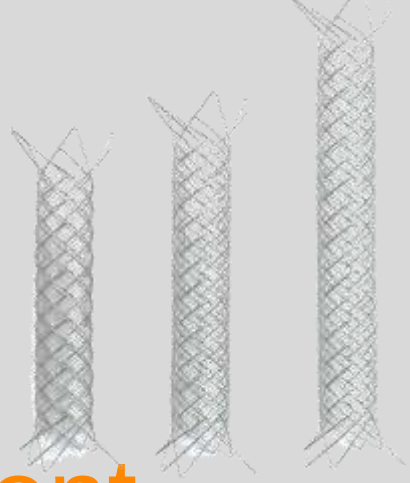
Special dedicated devices is crusial for radial access CAS



Flexibile Guiding Cath 6/7F or 5F sheath, Dura Glide Jindo or Glidewire Advantage, Independent Filter (Spider RX or Wirion)

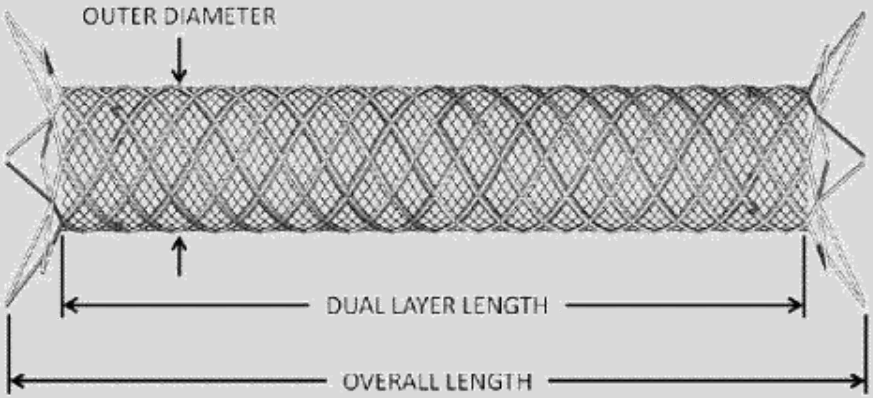
Scaffolding – various stent designs

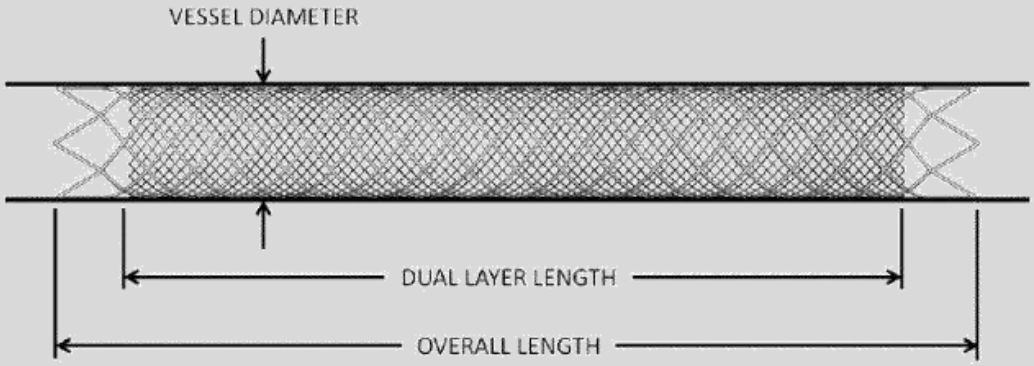




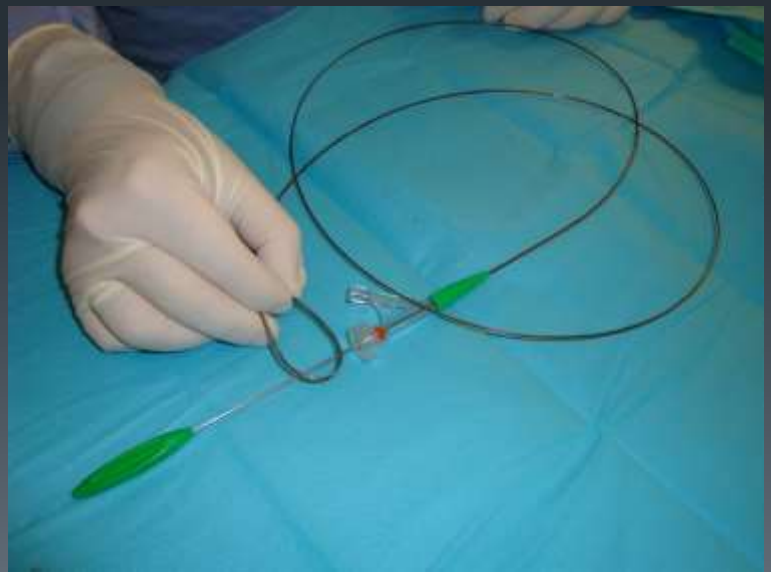
RoadSaver Carotid Stent

- double layer micromesh scaffold
- enabling sustained embolic protection by very tight plaque coverage
- embolic protection starts with implantation of the stent into the lesion and continues throughout the process of neointimalization
- up to 50% deployment full re-sheathable and repositionable

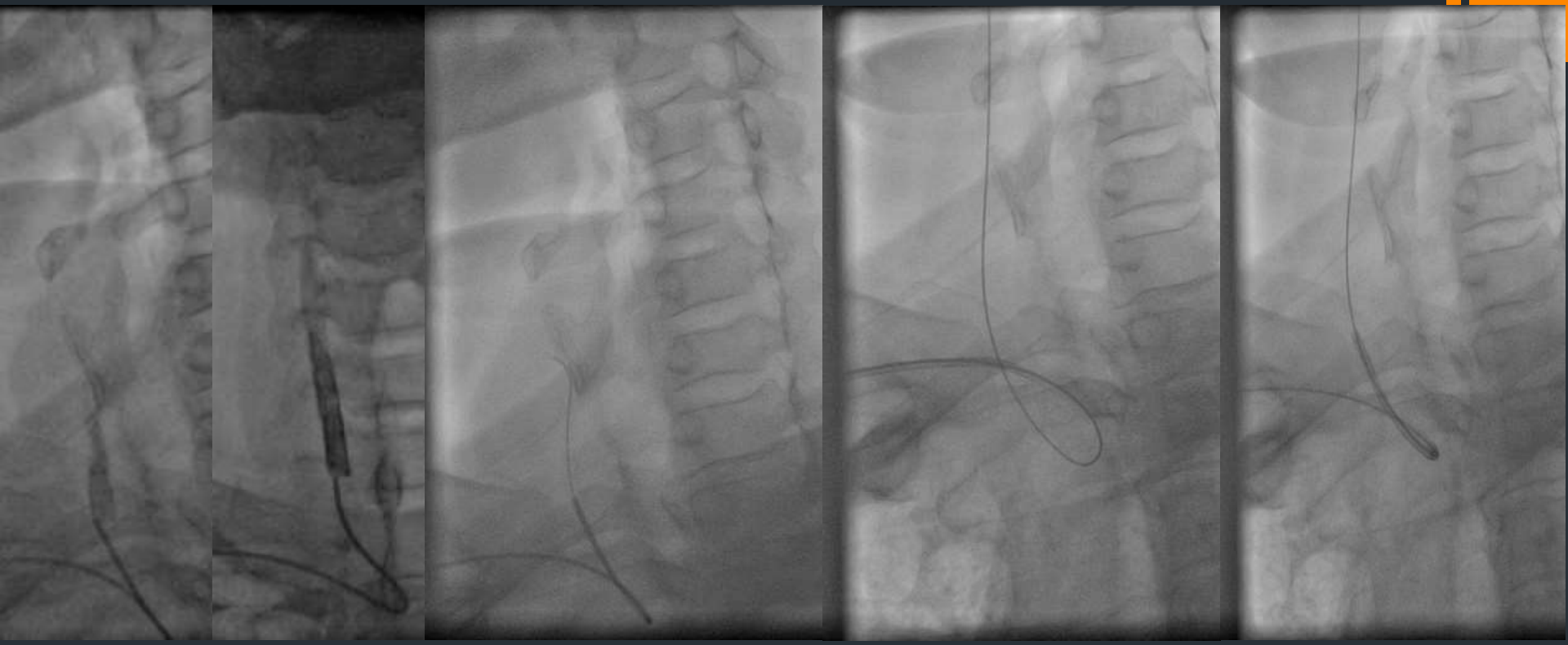




Roadsaver the most flexible carotid stent on the market



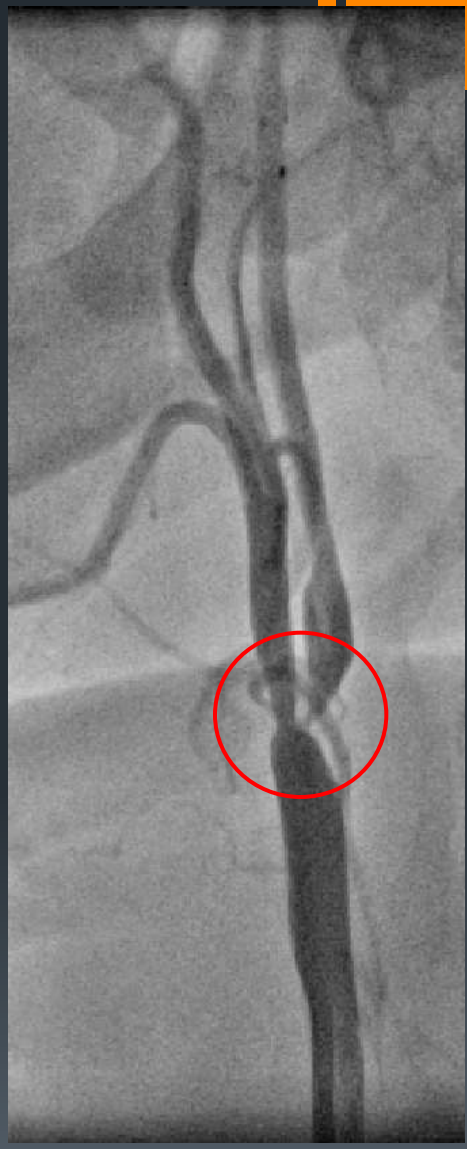
Simmons 1 – 3 5F the most useful diagnostic catheter



We use generaly right radial artery for both RICA & LICA CAS
One long GW to ECA
Special FX40 guiding catheter or 5F sheath
Very gently „ push and pull” technique.

Radial access for CAS is always challenging procedure



Delivery sheath required 1.5mm balloon predilatation for Spider RX placement

Roadsaver stent can be used for „Direct stenting” in all CAS procedures and should be preferred always from radial access!!

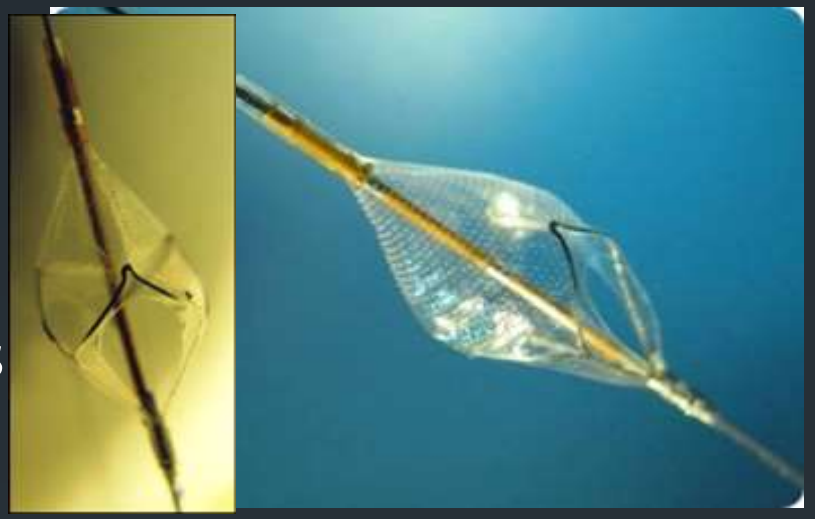
Sustained Embolic Protection

WIRION The Ultimate Solution

- The embolic filter that can be used with *any* guide wire
- Allows optimal filter positioning:

  anywhere on the guide wire

  anywhere along the vessel
- Suitable for a wide range of vessels
- Excellent deliverability
- Excellent support and stability
- Excellent visibility
- Superior retrieval technology
- Ready for use



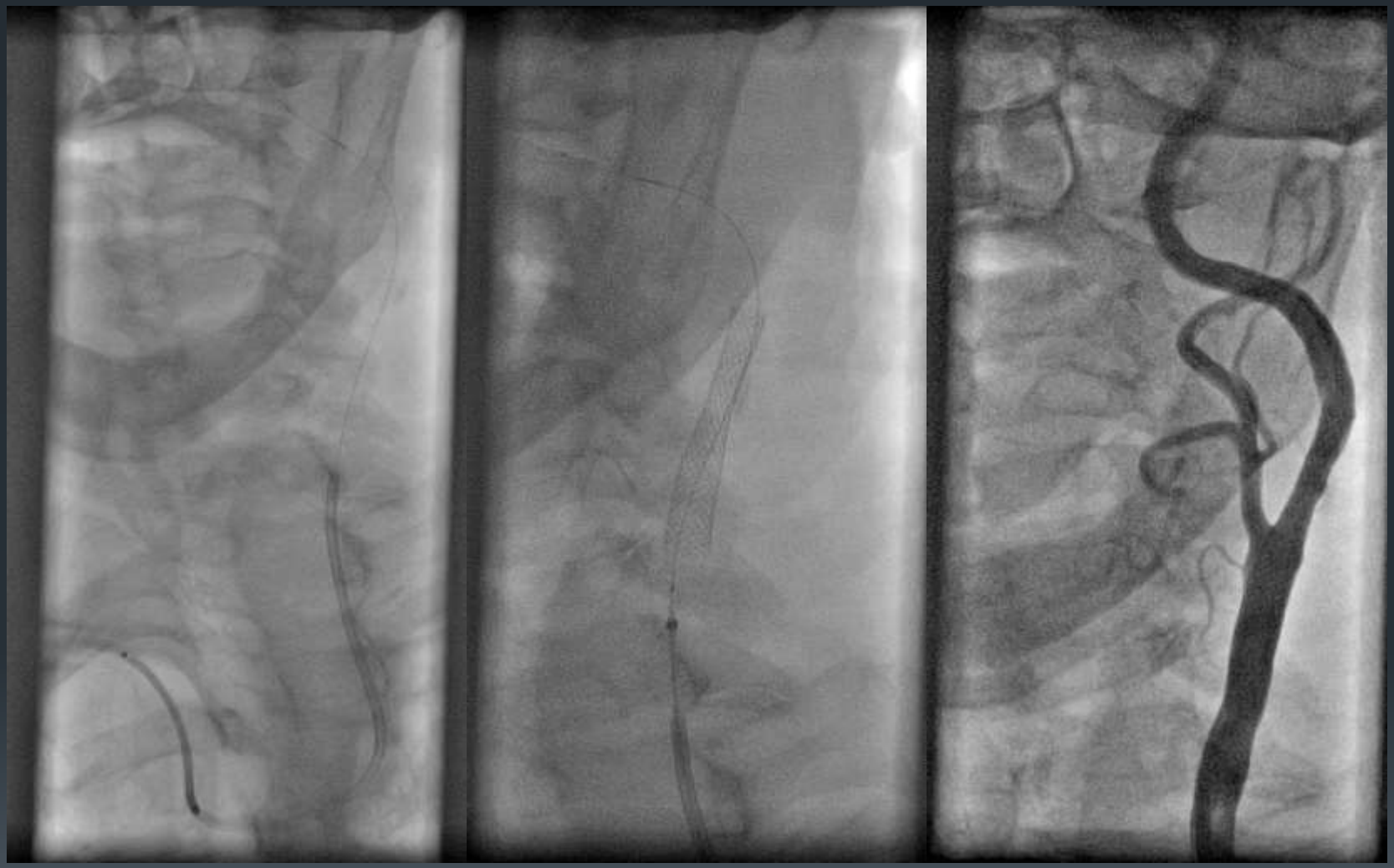
Excellent feedback from medical community!

- ✓ Optimal wall apposition
- ✓ Strong capturing ability

Bovine Arch – not a problem with CAS from right radial access

Wiron Filter very easy crossing the lesion on coronary 0.14” wire

Bovine Arch – not a problem with CAS from right radial access



Conic soft tip facilitates easy advancing retriver accross the stent

A randomised comparison of transradial and transfemoral approach for carotid artery stenting: RADCAR (RADial access for CARotid artery stenting) study

EuroIntervention 2014;10:381-391

Zoltán Ruzsa[1,3]*, MD, PhD; Balázs Nemes[1], MD, PhD; László Pintér[2], MD; Balázs Berta[1], MD; Károly Tóth[3], MD; Barna Teleki[3], CVT; Sándor Nardai[1], MD; Zoltán Jambrik[1], MD, PhD; György Szabó[1], MD; Ralf Kolvenbach[2], MD, DSc; Kálmán Hüttl[3], MD, DSc; Béla Merkely[1], MD, DSc

Conclusions: The transradial approach for carotid artery stenting is safe and efficacious; however, the cross-over rate is higher with transradial access. There are no differences in the total procedure duration and fluoroscopy time between the two approaches but the radiation dose is significantly higher in the radial group, and the hospitalisation is shorter with the use of transradial access by per-protocol analysis. By evaluating the patient data according to intention-to-treat analysis we found no difference in major adverse events and hospitalisation. In both groups, vascular complications rarely occurred.

Radial Access - The Advantages

- Decrease the incidence of major vascular complications
- Decrease the incidence of bleeding complications
- Appears to decrease MANE in patients with CAS
- Better control over vascular access and hemostasis for obese and overall patients
- Decreased time to ambulation
- Improved patient movement and comfort
- Allows early discharge policy
- May decrease cost

Conclusion:

Carotid artery stenting with EPD can be safely and effective performed using radial access

In severe PAD difficult aortic arch transradial CAS can be more save then transfemoral access.

New generation of GW, Filters and Stents cause that the CAS procedure is fast and safe.

Due to immediatelly mobilization the patients comfort is much better

Thank you

John Paul II Hospital Krakow PL