NORTH-WESTERN STATE MEDICAL UNIVERSITY
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OCCLUSION OF THE RADIAL ARTERY. REALITY OR MYTH.

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MAIN STUDIES OF THE RADIAL APPROACH

1. Radial vs femoral approach in PCI for STEMI: **RIFLE-STEACS** J Am Coll Cardiol 2012;60(24):2481–2489.
2. Radial vs femoral access for ACS: **RIVAL** Lancet 2011;377(9775):1409–1420.
3. Radial vs femoral approach in STEMI: **STEMI-RADIAL** J Am Coll Cardiol. 2014 Mar 18;63(10):964-72.
4. Radial vs femoral access site in women: **SAFE-PCI** JACC Cardiovasc Interv. 2014 Aug;7(8):857-67.
5. Radial vs femoral access in ACS: **MATRIX Access** Lancet 2015;385(9986):2465–2476.

The Society for Cardiovascular Angiography and Interventions

SCAI

Best Practices for Transradial Angiography and Intervention: A Consensus Statement From the Society for Cardiovascular Angiography and Intervention's Transradial Working Group

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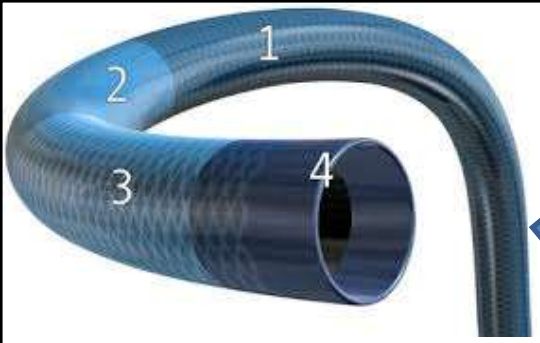
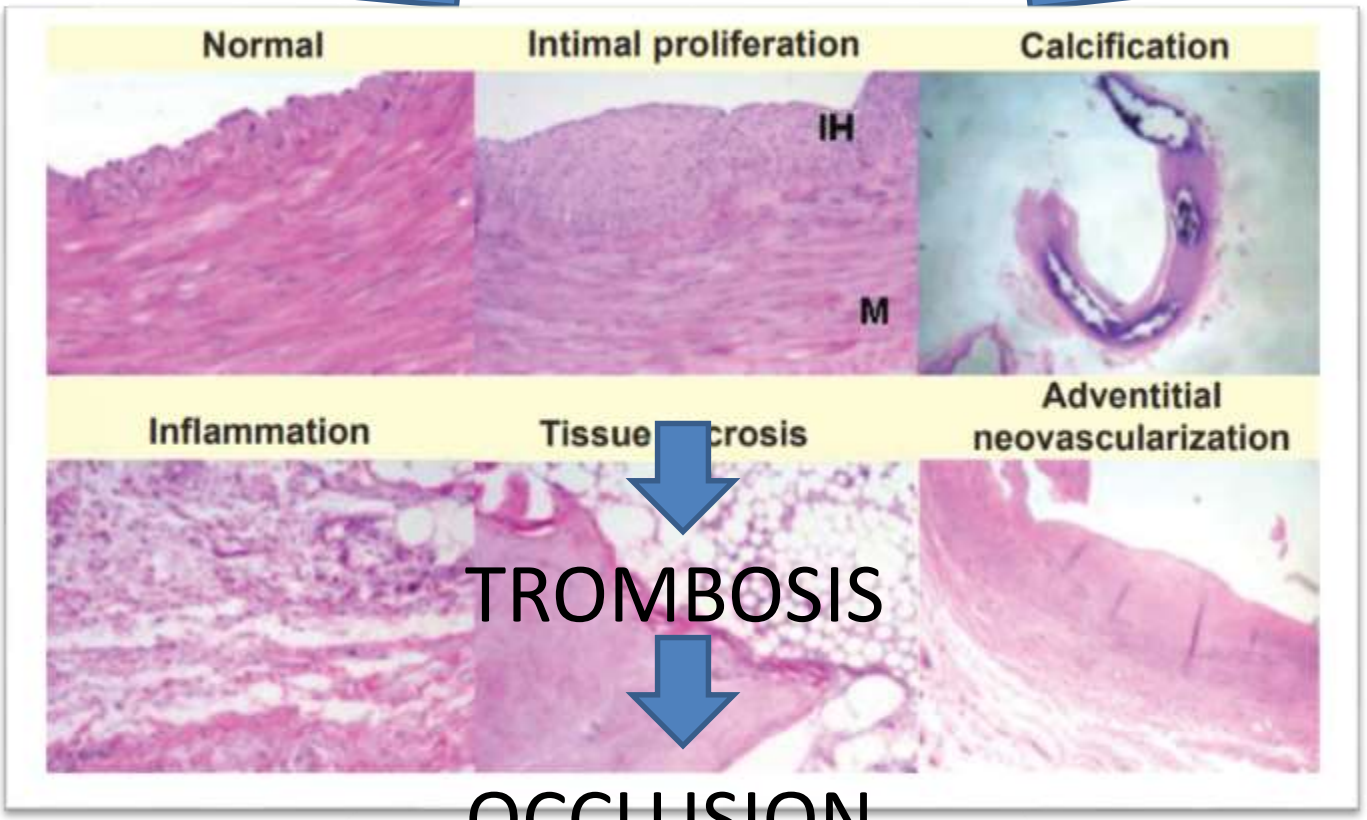
…reduced risk for bleeding and vascular complications [Jolly SS et al. Am Heart J 2009;157:132–140].

…reduced costs [Caputo RP et al. Catheter Cardiovasc Interv 2011;78:823–839.],

…increased patient satisfaction [Cooper CJ et al. Am Heart J 1999;138:430–436; Jolly SS et al. Lancet 2011;377:1409–1420.], and reduced mortality in STEMI [Joyal D et al. Am J Cardiol 2012;109:813–818.].





TROMBOSIS

OCCLUSION

Representative sections of the RA showing different histopathological findings [1]

1 Cezar S Staniloae et al. Vascular Health and Risk Management. 2009:5 527-532.

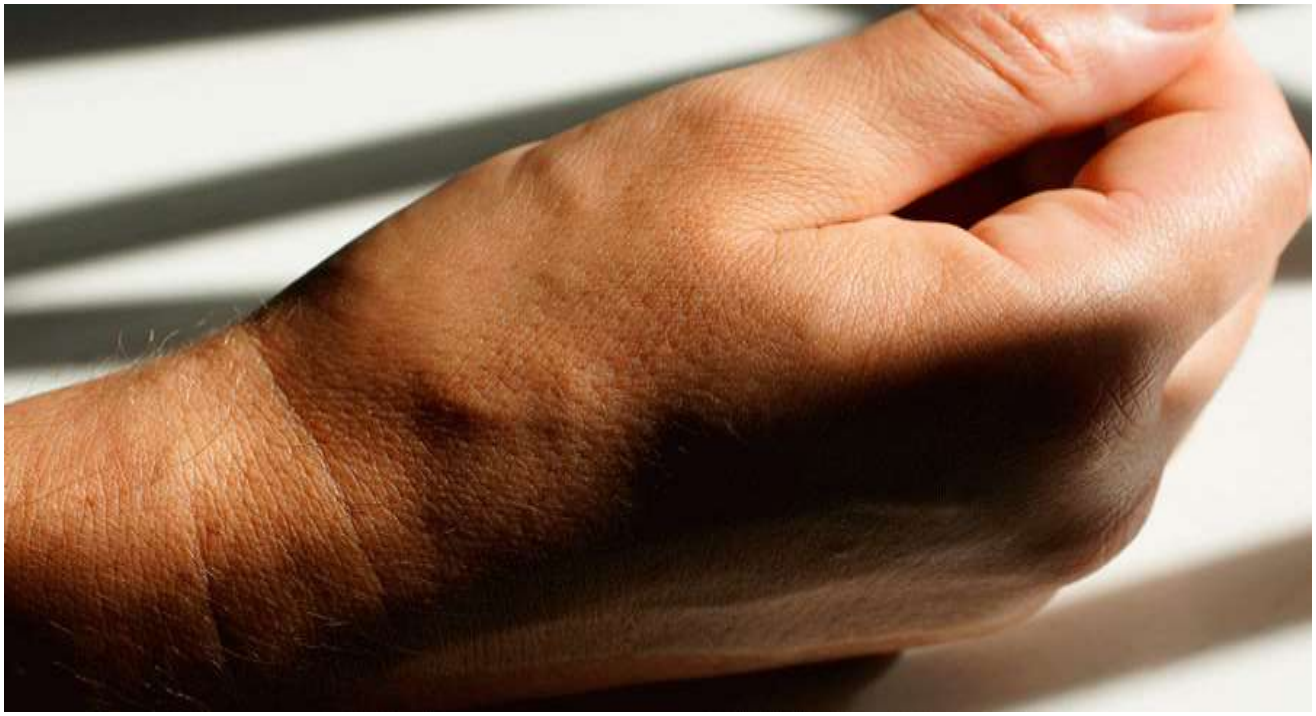
METHODS FOR REDUCING THE RISK OF RAO

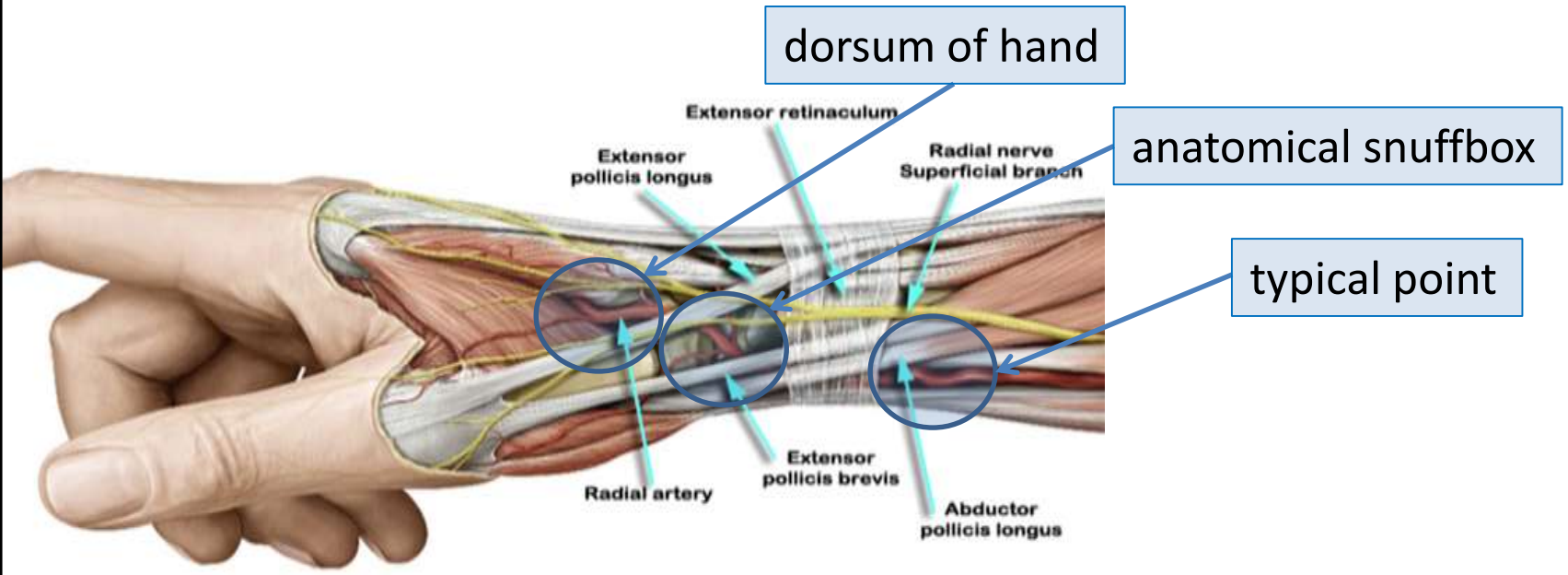
1. Performing an US before intervention. (Check diameter, tortuosity, looping and high origin of RA).
2. Adequate anticoagulation [1]
3. Prevention of spasm [2] (analgesia + sedation + spasmolytics + hydrophilic coating + low profile)
4. Resolution of spasm [3] (spasmolytics + pressure-mediated dilatation).
5. Using low profile, hydrophilic introducers and catheters. [1]
6. Patent hemostasis technique. [1] (Presence of antegrade flow in the artery during hemostasis).

BUT WHAT ELSE CAN WE DO
TO PRESERVE THE ACCESS ARTERY PATENT??

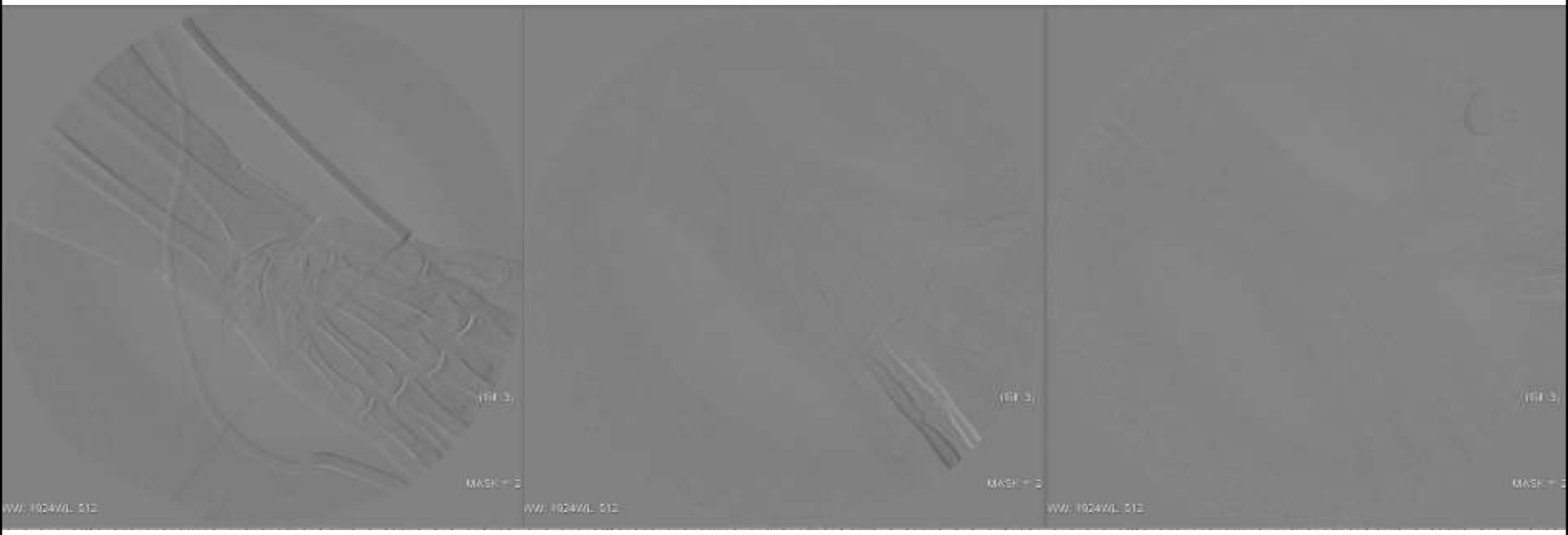
1 Sunil V. Rao, et al. Best practices for transradial angiography and intervention: A consensus statement from the society for cardiovascular angiography and intervention's transradial working group. Catheter Cardiovasc Interv. 2014 Feb;83(2):228-36.
2 Avdikos G, et al. Radial artery occlusion after transradial coronary catheterization. Cardiovasc Diagn Ther 2017;7(3):305-316.
3 Carlos Collet, et al. Pressure-mediated versus pharmacologic treatment of radial artery spasm during cardiac catheterisation: a randomised pilot study. EuroIntervention 2017 Apr 7;12(18):2212-2218.
The **Society for Cardiovascular Angiography and Interventions Expert Consensus**

2013




dorsum of hand
anatomical snuffbox
typical point
Extensor retinaculum
Extensor pollicis longus
Radial nerve Superficial branch
Radial artery
Extensor pollicis brevis
Abductor pollicis longus

The main idea of the **DISTAL** radial approach –
is the preservation of antegrade blood flow in the superficial Palmar arch in case of occlusion of the RA in the anatomical snuffbox area



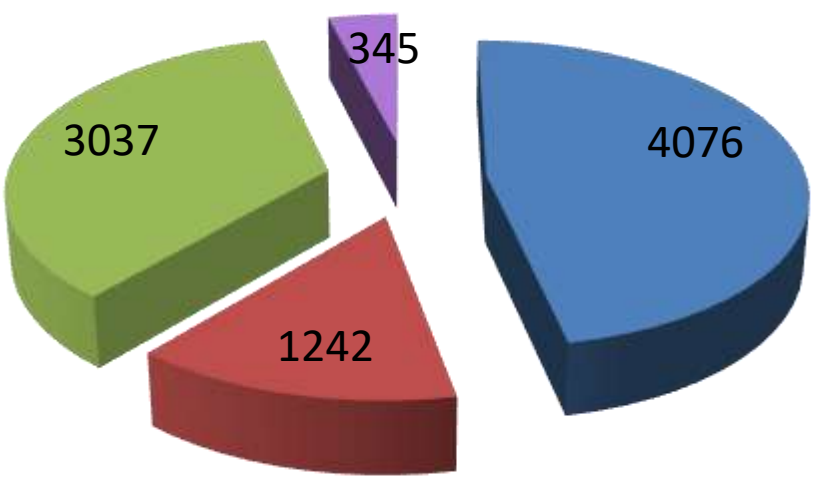
Occlusion of ulnar artery

Occlusion of radial artery on the forearm

Occlusion of radial artery in the snuffbox area

SIMULATED CASES IN ONE PATIENT

Total number of catheterizations (2013-2017)



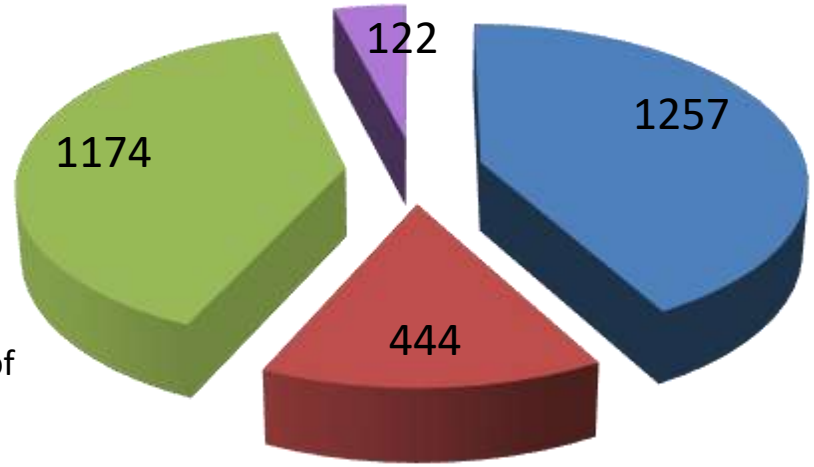
RA typical

Ulnar artery

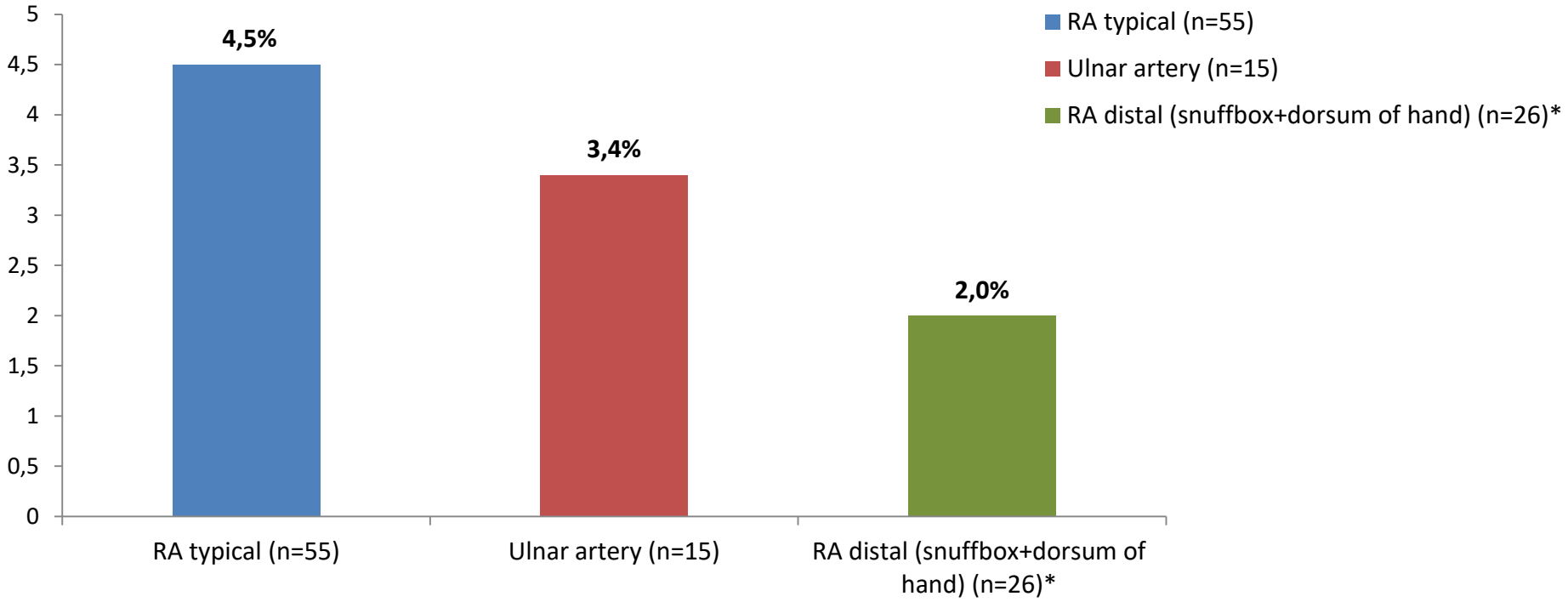
RA snuffbox

RA dorsum of hand

Arterial patency control (average follow-up = 4m)



INCIDENCE OF ARTERY OCCLUSION



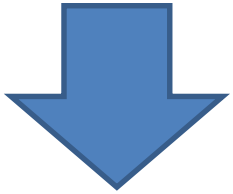
0,8% - local occlusion in snuffbox area
1,2% - RA occlusion

* It was taken into account both the occlusion of the RA on the forearm and local occlusion in snuffbox area

WHY SHOULD WE RECANALIZE ASYMPTOMATIC RADIAL OCCLUSIONS??

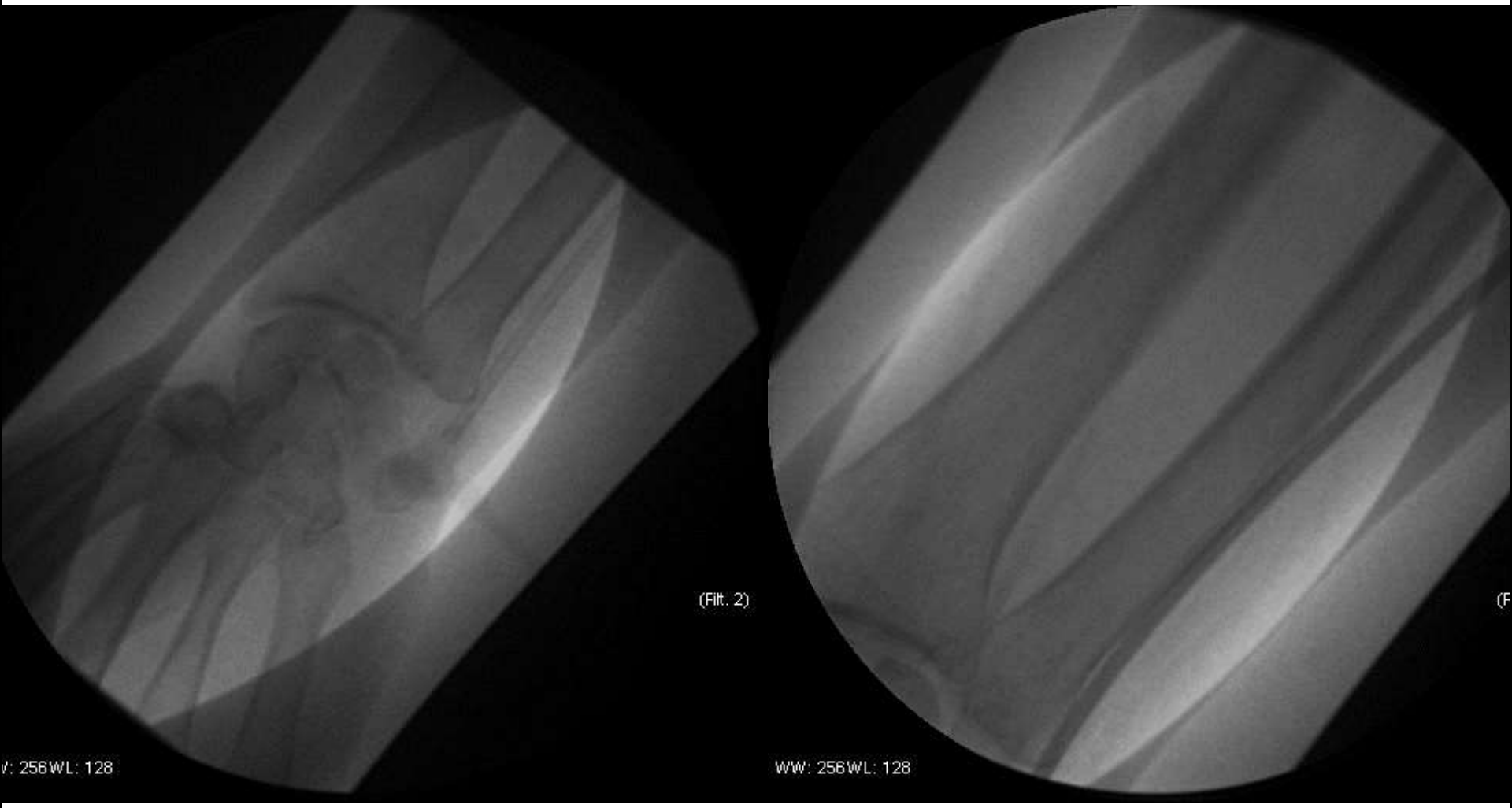
The growth of cardiovascular morbidity and the development of interventional cardiology lead to an increase in repeated interventions.

Radial approach is currently dominant

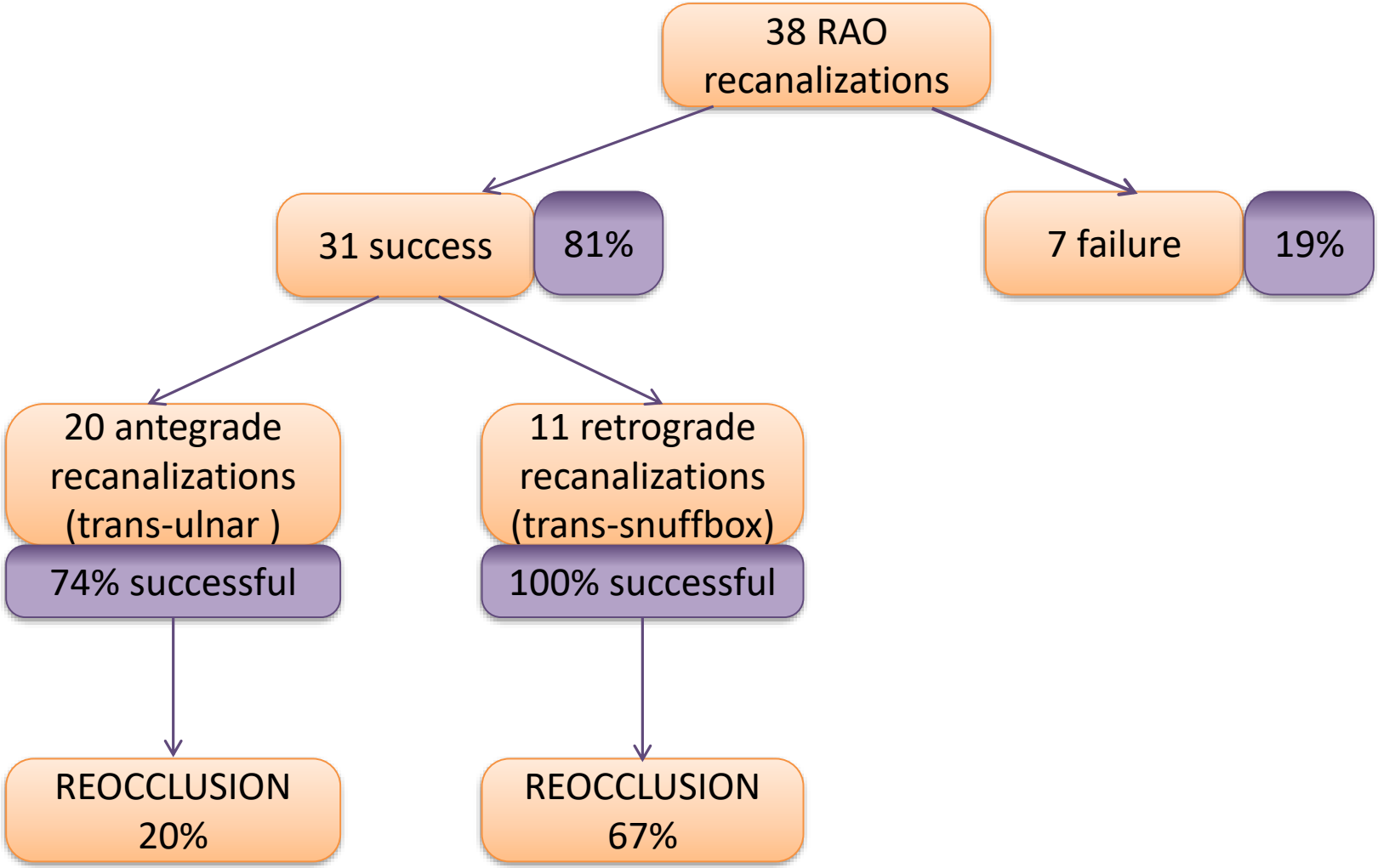


WE REQUIRE PATENT RA
FOR FURTHER INTERVENTIONS
(incl. coronary graft, fistula for hemodialysis or invasive monitoring).

RA occlusion, before and after recanalization

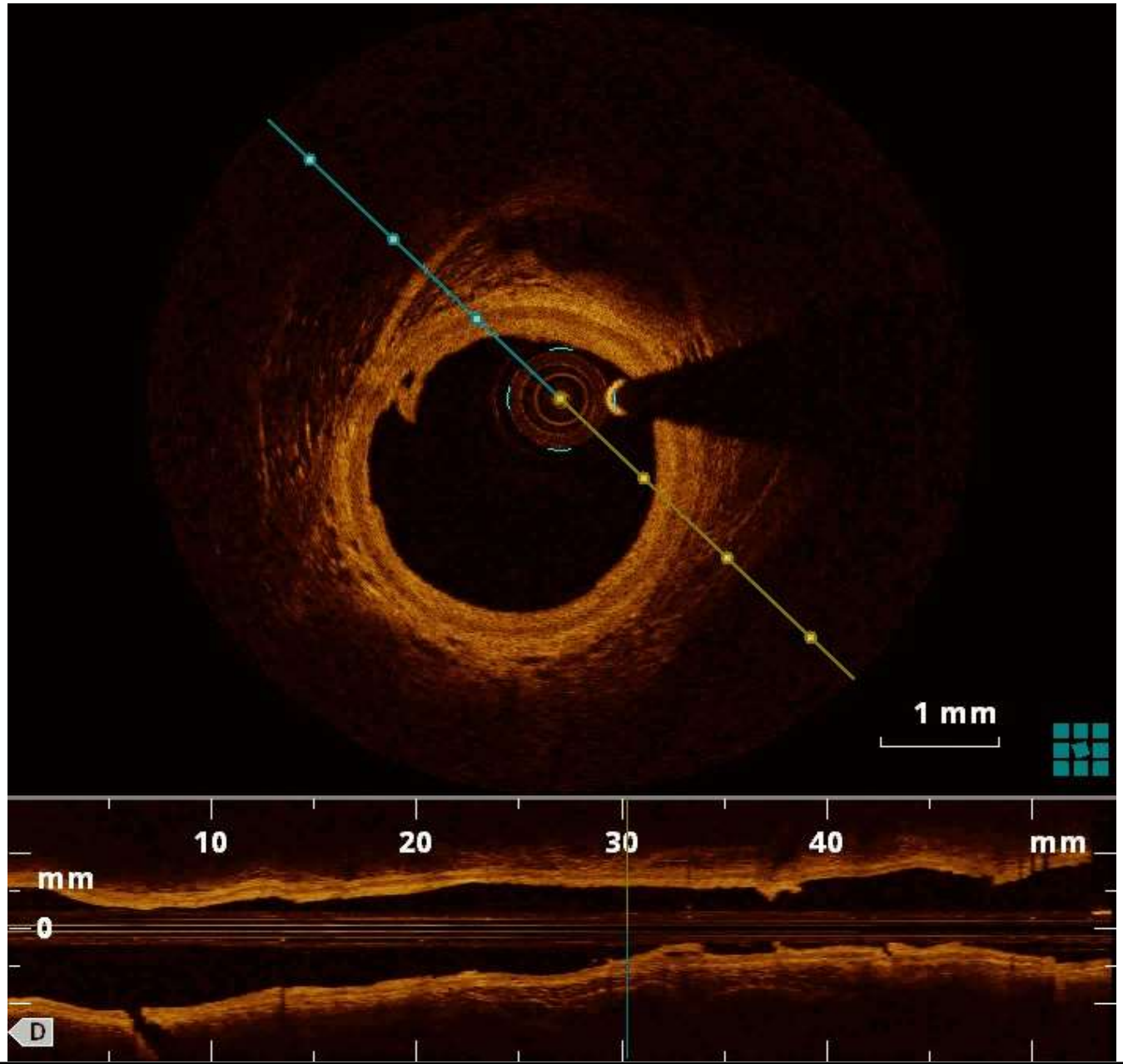


RECANALIZATION OF RA OCCLUSION



own experience

RA immediately after recanalization & angioplasty. OCT-imaging.

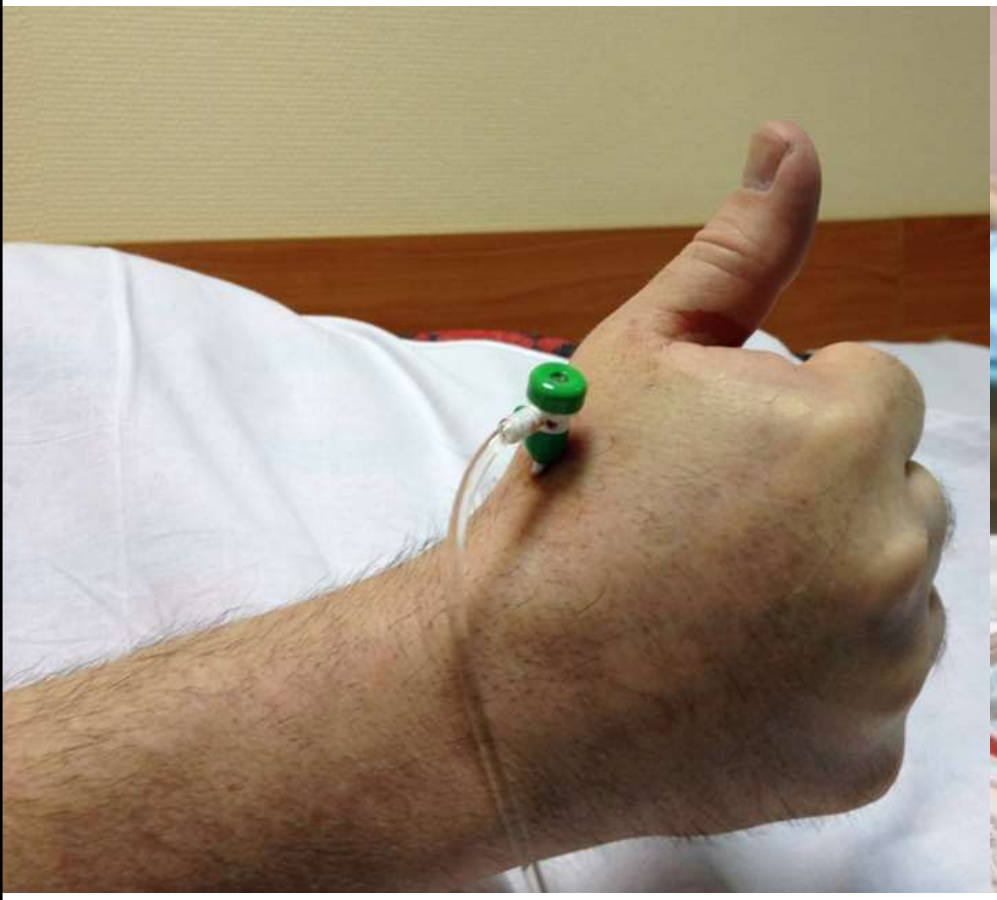


TAKE HOME MESSAGE

Of course, RA occlusion is a severe REALITY, but we have to fight against it. To preserve RA patent, we can:

1. Use techniques to decrease the risk of occlusion
2. Use distal radial and ulnar approaches
3. Recanalize RAO. Trans-ulnar access is safe in these cases

THANK YOU
FOR ATTENTION



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