



**Controversies & Updates in Vascular Surgery
CACVS 2015**



Can we predict the reentry site in total occluded SFA?

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CONFERENCES OF INTEREST IN VASCULAR SURGERY
CONTROVERSIES & UPDATES
IN VASCULAR SURGERY

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BIARRITZ - BOUILLONNE - CONFERENCE CENTER PARIS, FRANCE

Disclosure

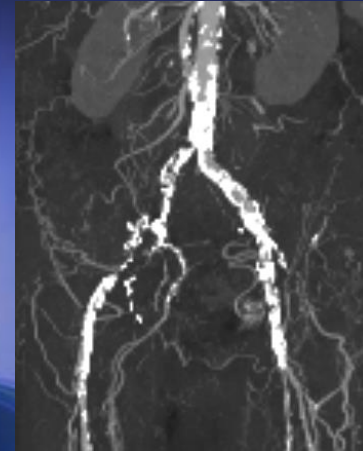
Speaker name: FEUGIER Patrick

V I do not have any potential conflict of interest

SFA Recanalization

The reasons of failure

- **Problem of accessibility**
- **Lack of specific equipment**
- **Failure of thrombosis crossing**
- **Failure of arterial reentry**



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SFA Recanalization

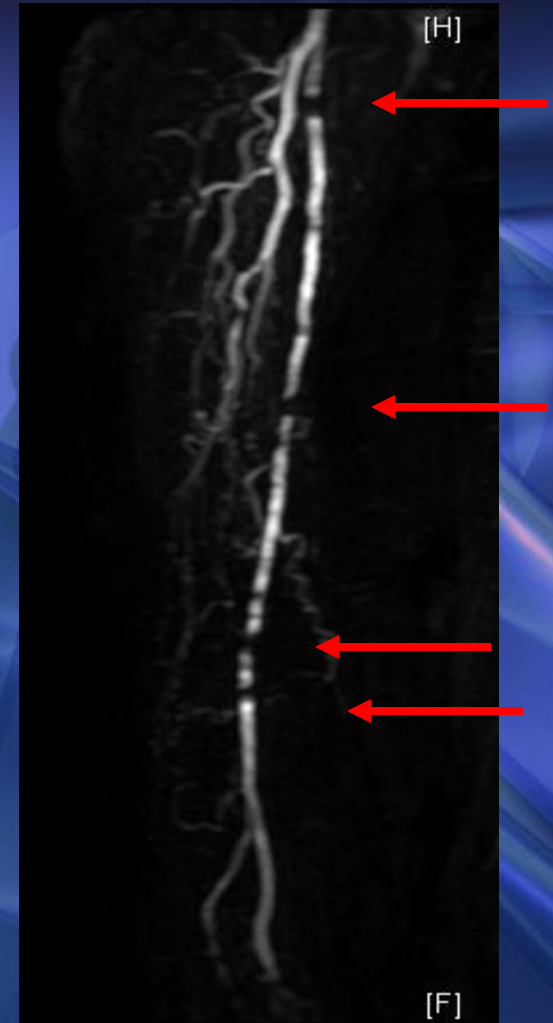
The reasons of failure:

- Problem of accessibility
- Lack of specific equipment
- Failure of thrombosis crossing
- **Failure of arterial reentry**



What would be your surgical decision?

- **Woman, 77 y old**
- **Living alone at home**
- **Kidney transplant (+15 ans)**
- **Right calf claudication**
 - **PM < 100m**
 - **No rest ischemia**
 - **No GSV available**

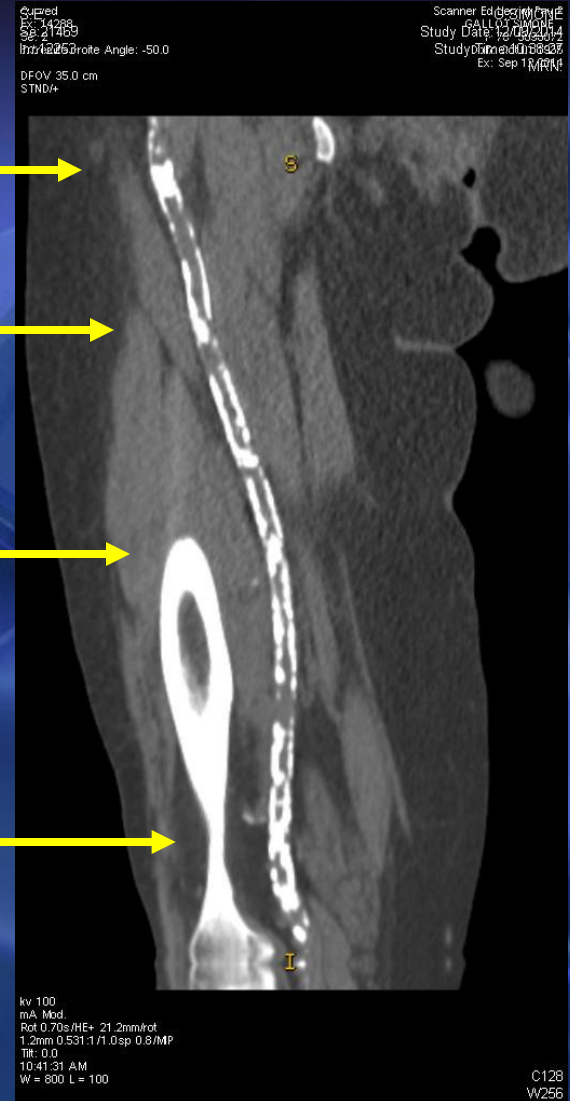
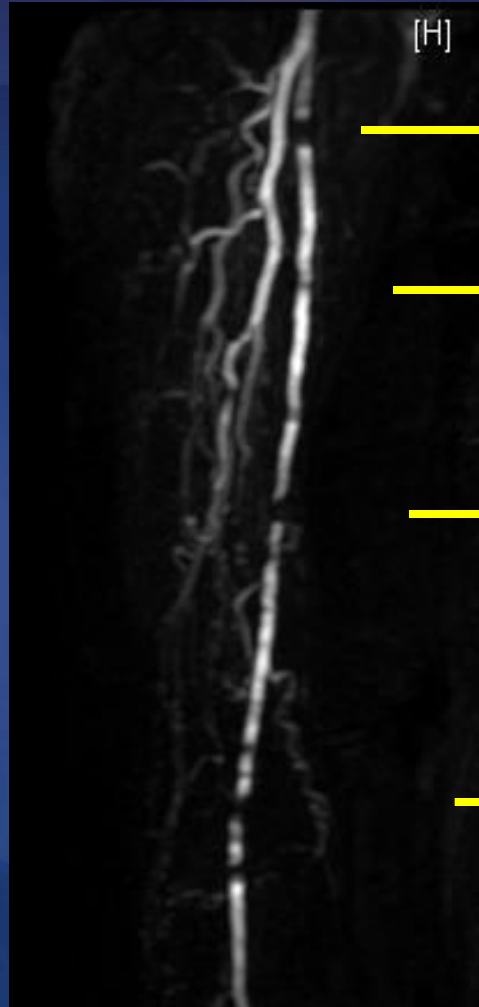


Risk of failure?

- Intraluminal calcified coral reef stenosis
- Complete calcification of her SFA axis

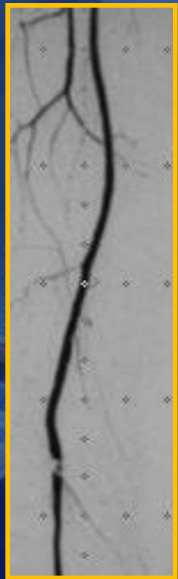


Difficulty of crossing
Difficulty of reentry

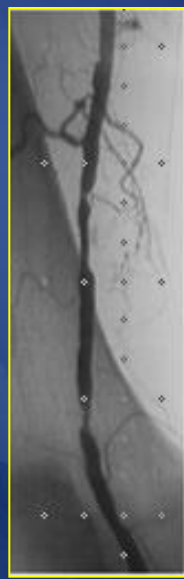


Reentry: is it feasible?

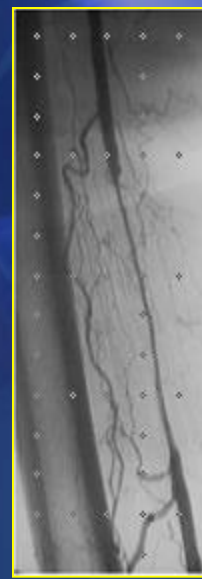
- Which exams?
- On what criteria?
- With which techniques?



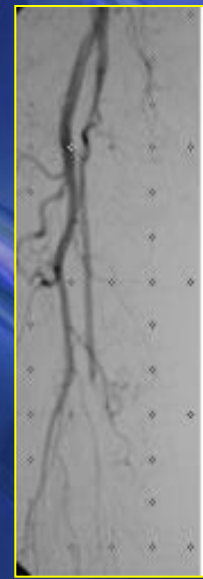
TASC II A



TASC II B



TASC II C



TASC II D

1st Case: intra-luminal recanalization

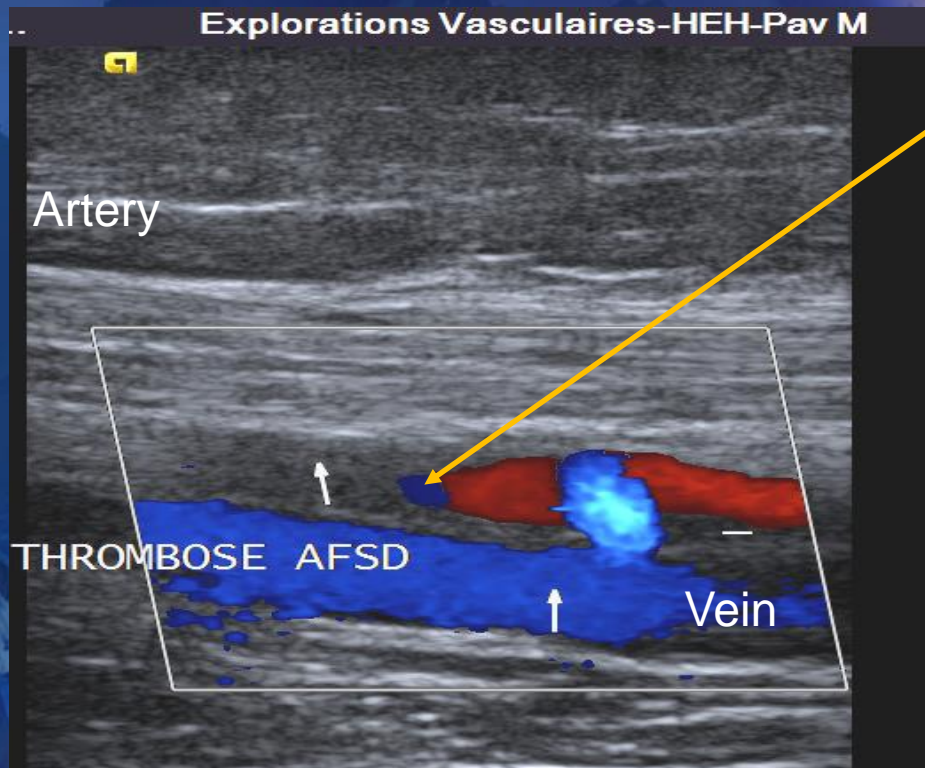
- **TOTAL THROMBUS
but
LITTLE CALCIFIED**

Or

- **PRE-OCCLUSIVE
STENOSIS LEAVING
A CHANNEL**



Intra-luminal Recanalization

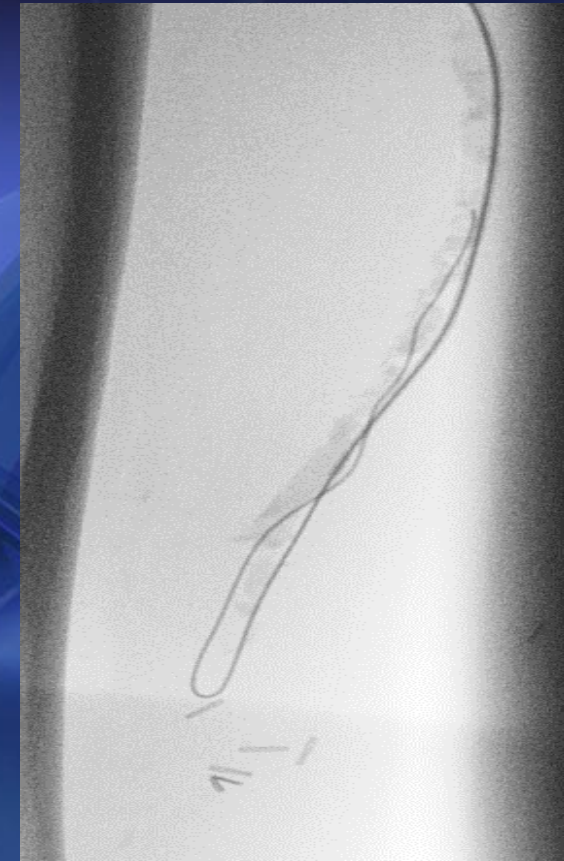
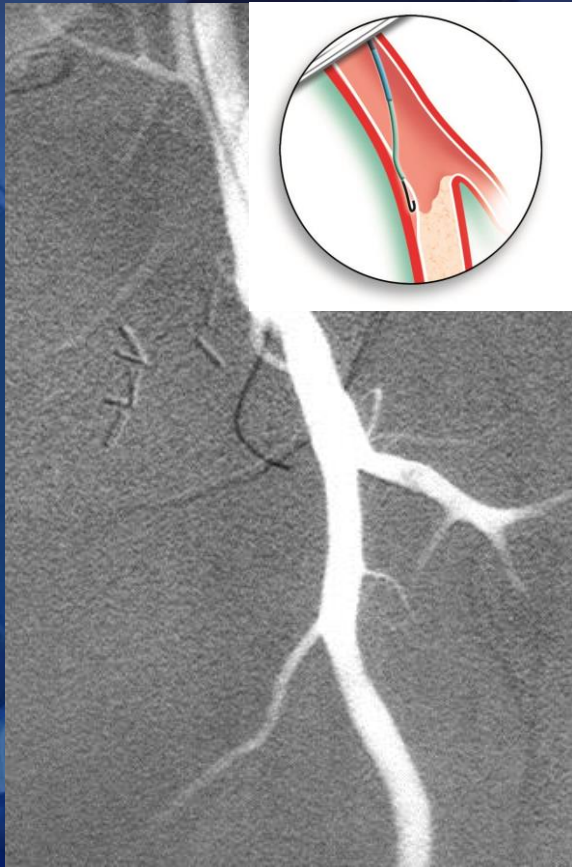


End of
thrombosis



Reentry site = end of the thrombosis

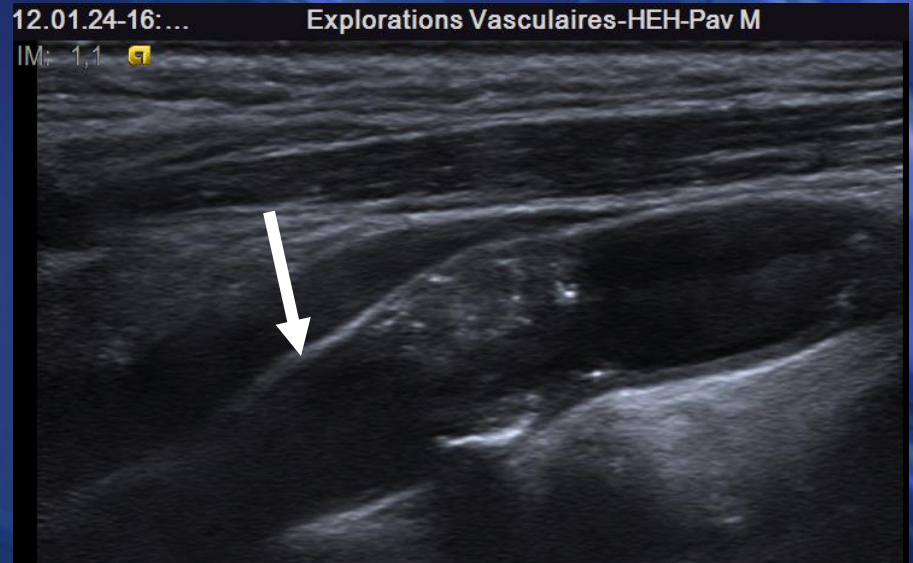
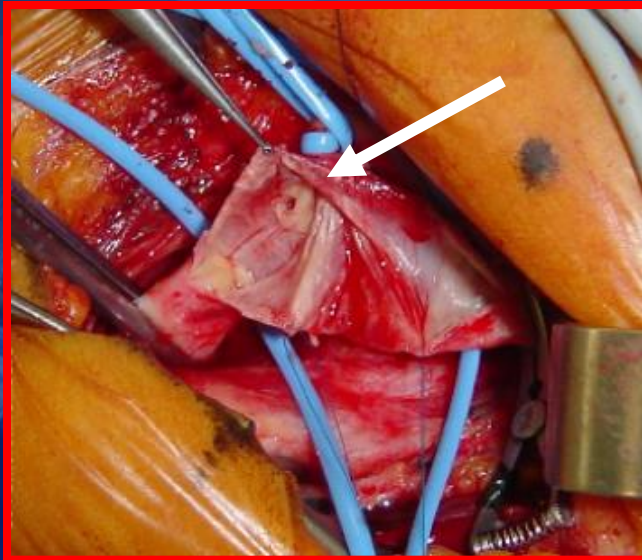
2nd Case: sub-intimal recanalization



- **Bolia A, Brennan J, Bell PR.** Recanalisation of femoro-popliteal occlusions: improving success rate by subintimal recanalisation. Clin Radiol. 1989 May;40(3):325.
- Lipsitz EC, **Ohki T, Veith FJ**, Does subintimal angioplasty have a role in the treatment of severe lower extremity ischemia? J Vasc Surg. 2003 Feb;37(2):386-91.

Sub intimal Recanalization

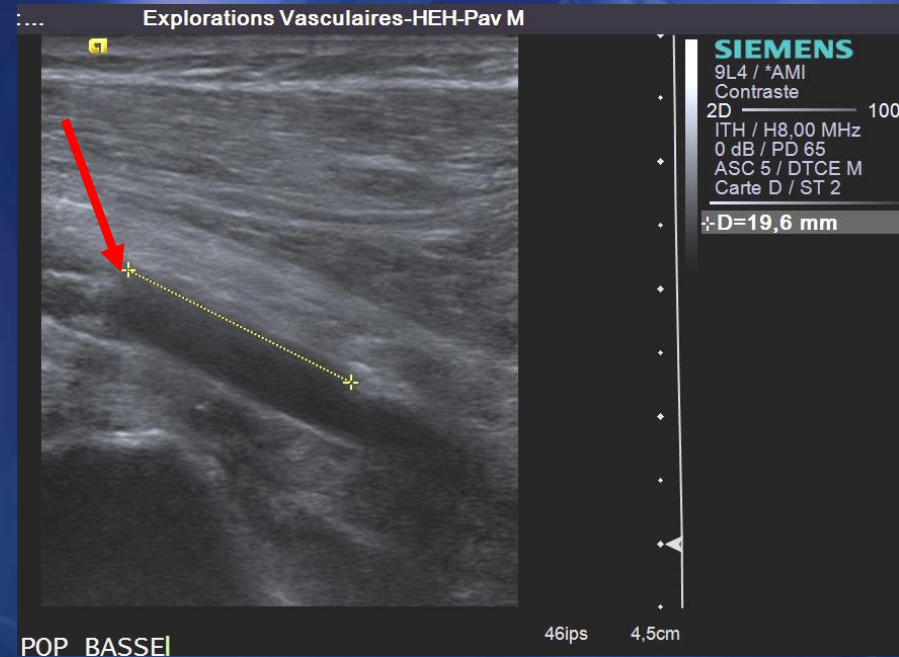
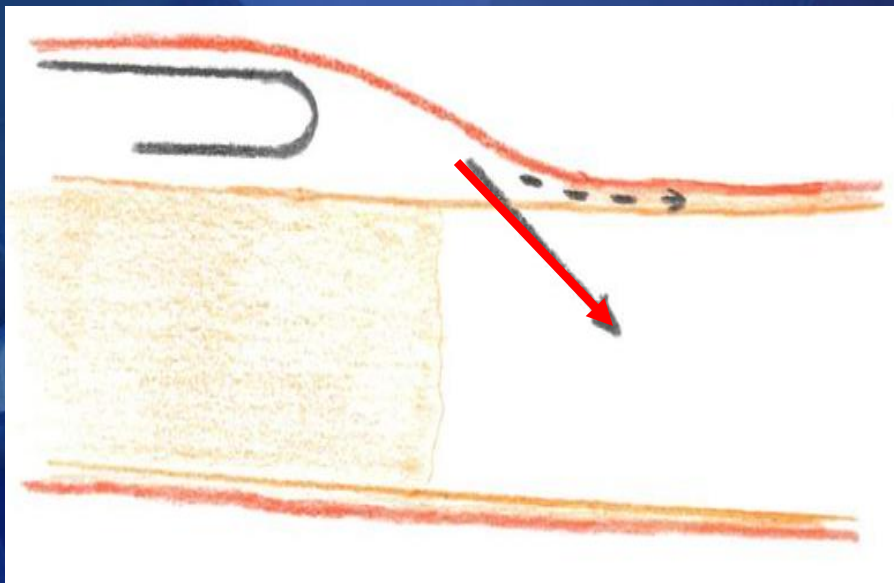
**Reentry site depends on the quality of the arterial wall downstream of thrombosis
(analogy to carotid plaque stop)**



Sub intimal Recanalization

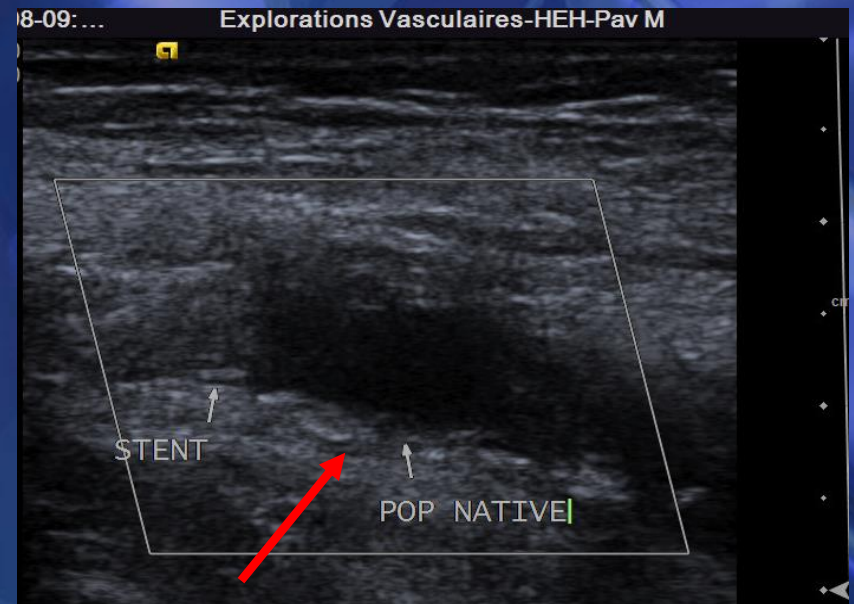
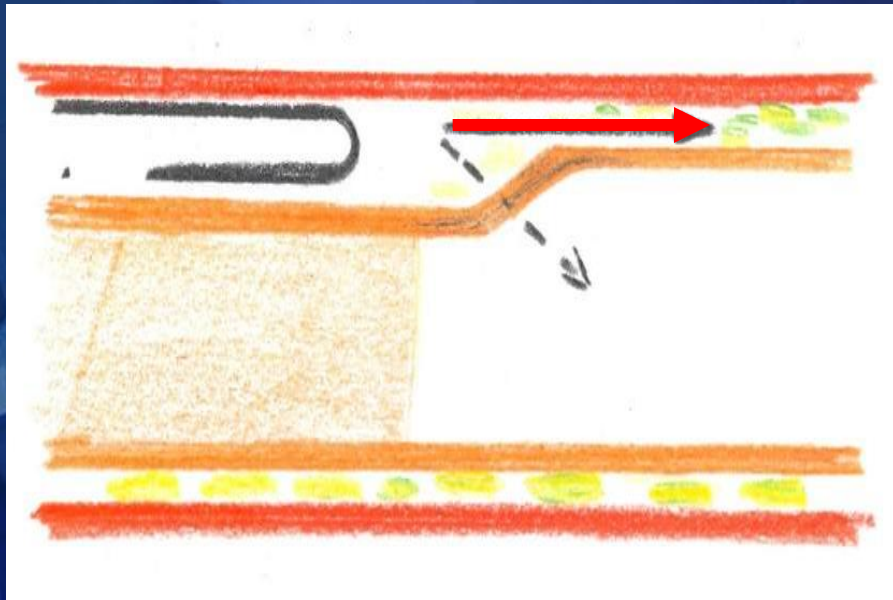
If the arterial wall is without lesion

→ Spontaneous reentry = EASY



Sub intimal Recanalization

If pathological arterial wall
→ reentry **DIFFICULT / IMPOSSIBLE**



Our own experience

- Retrospective analysis
- 34 consecutive patients
- De novo above-knee femoropopliteal thrombosis

| N=34 | Men = 29 (85%) | Women = 5 (15%) |
|----------------|-------------------------------|-----------------------------|
| Mean age | 72 ans (41-86) | |
| Clinical stage | Effort ischemia N=12 (35%) | Rest ischemia N=22 (65%) |

- Saketkhoo RR, Razavi MK, Dake MD. Percutaneous bypass: subintimal recanalization of peripheral occlusive disease with IVUS guided luminal re-entry. *Tech Vasc Interv Radiol*. 2004
- Etezadi V, Benenati JF, Patel PJ. The reentry catheter: a second chance for endoluminal reentry at difficult lower extremity subintimal arterial recanalizations. *J Vasc Interv Radiol*. 2010

Population

| N=34 | |
|-------------------------|------------|
| Tobacco | N=30 (88%) |
| hypercholesterolemia | N=26 (76%) |
| High ABP | N=14 (41%) |
| Diabetes type II | N=20 (59%) |
| CRF (DFG < 45ml/min) | N=8 (24%) |

- **Pre-op targeted duplex-scan**
- **Angio CT scan**
- **Angio MRI + CT scan without inj**

Results

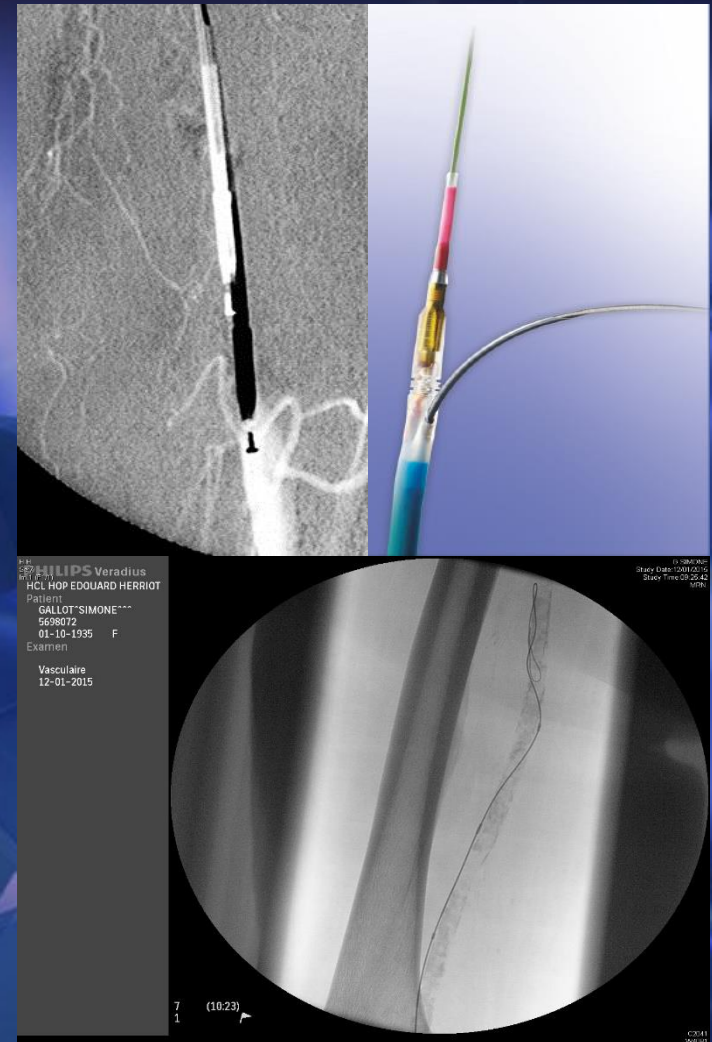
- **3 failures of thrombosis crossing (8%)**
- **No reentry system used**
- **Could we predict the reentry site?**

YES: 25/31 recanalisations (84%)

| N=31 | Intra luminal Recanalisation | Sub intimal Recanalisation | Don't know |
|--------------------------------------|-----------------------------------------|---------------------------------------|----------------------|
| Type of recanalisation | N=10 (32%) | N=14 (45%) | N=7 (23%) |
| Prediction (angiographic control) | 10/10 (100%) | 9/14 (64%) | 6/7 (85%) |

Benefits

- Better planning of the endoV procedure
- **Reducing complications**
 - =
 - Loss of arterial level**
 - Loss of collateral**
- Reducing intervention period, radiation exposure
- Reducing procedural failures:
 - Planning to use a reentry systems (Outback Cordis; OffRoad Boston Scientific, Pionner Plus Volcano)
 - Rapid conversion of the procedure:
 - SAFARI,
 - Distal bypass



Conclusion

- **Analysis of the reentry site must be part of the surgical strategy in SFA recanalization**
 - Better planning endoV procedure
 - Use of specific techniques
(reentry system, SAFARI...)
- **Angio CT scan**
Association MRA + CT-scan (or duplex Scan) seems to allow it.