

MEET2015

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Closure devices: treatment of complications

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Meta-analysis safety VCD

- 31 prospective, randomized studies (7,528 patients)
- Similar results in the study groups in terms of groin hematoma, bleeding, pseudoaneurysm, and blood transfusion
- Lower limb ischemia and other arterial ischemic complications (0.3% vs 0%, $P = .07$)
- Need of surgery for vascular complications (0.7% vs 0.4%, $P = .10$)
- Groin infection was significantly more frequent with VCDs (0.6% vs 0.2%, $P = .02$)
- VCD significantly shorter time to hemostasis

Complications closure devices

- False aneurysm
- Stenosis
- Occlusion
- Dislodgement of endo-luminal component
- Infection

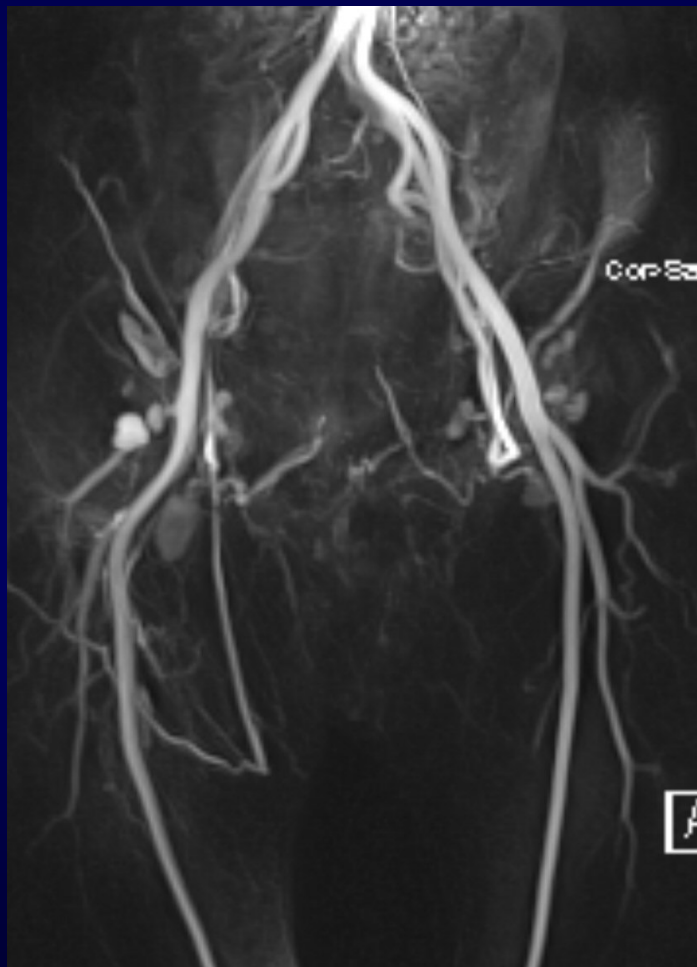
Complications closure devices

- Stenosis
 - Entrapment plaque (anchor/suture)
 - Inadequate traction of anchor (intra-luminal foreign body)
 - Suture-induced stenosis
 - Large suture intervals
 - Suturing anterior and posterior wall
- Laceration
- Intra-arterial placement/embolisation of (part of) closure device

Complications closure devices

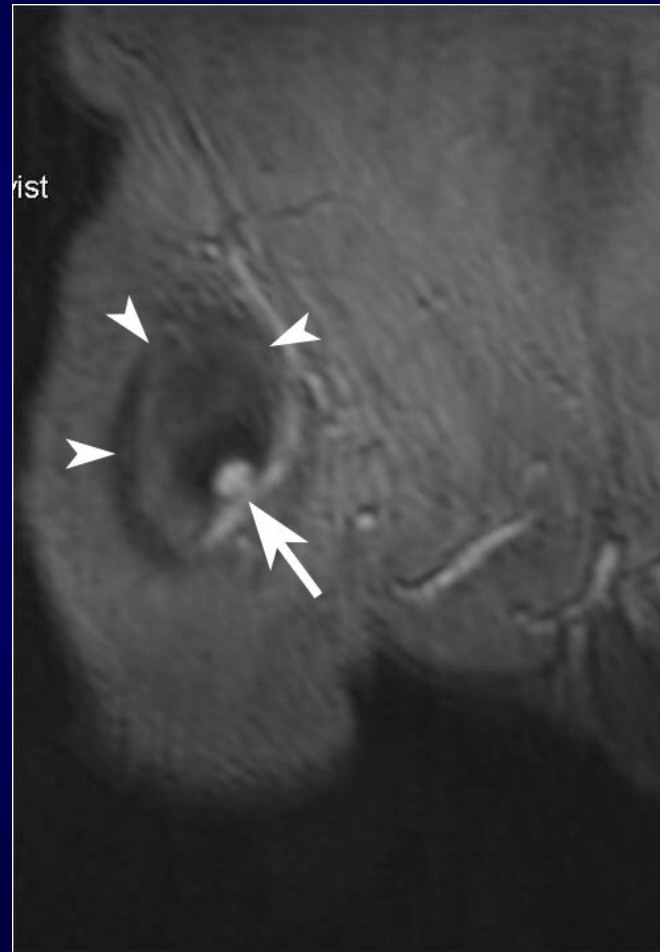
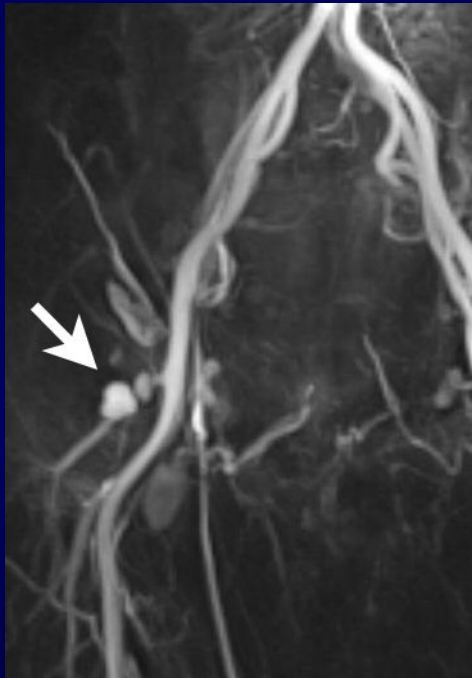
- Infection
- Thrombosis
- Periarterial and intra-arterial fibrosis

False aneurysm



Plug mediated device

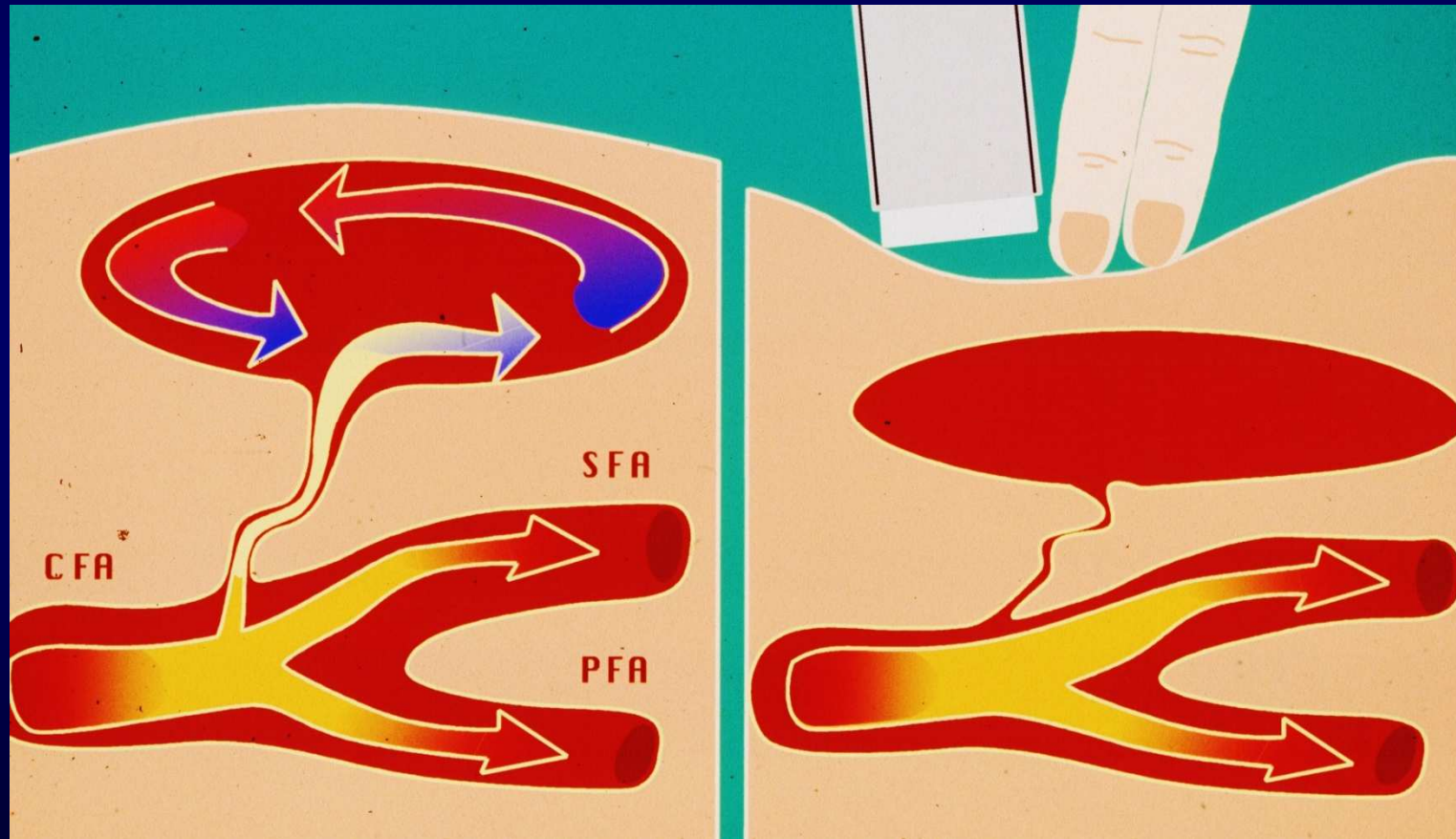
False aneurysm



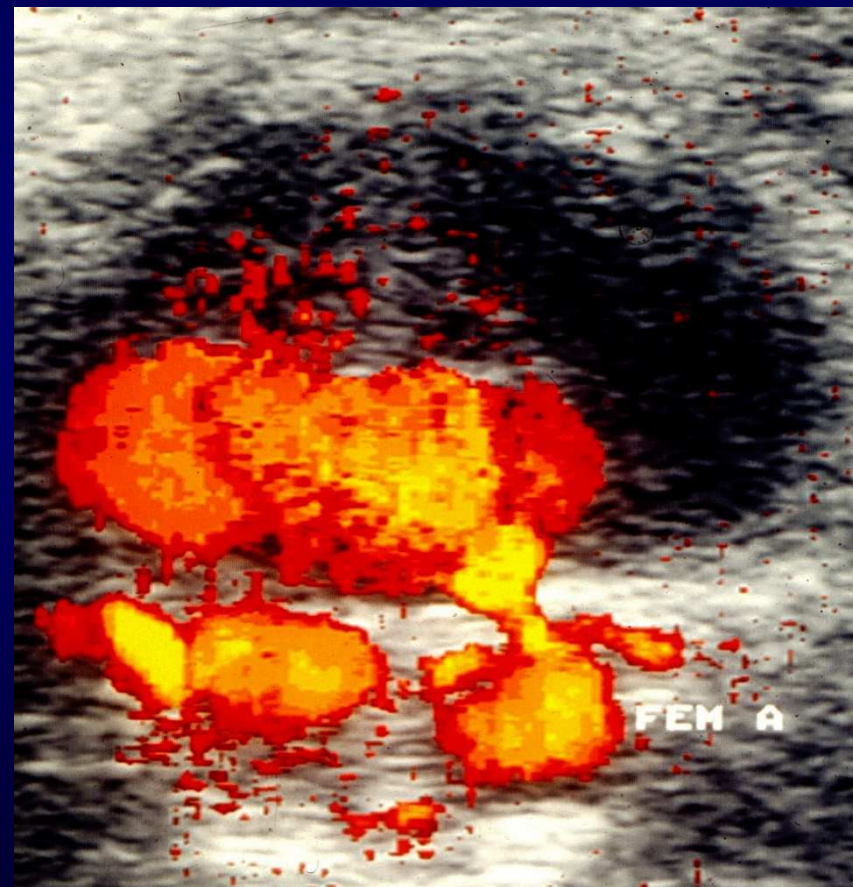
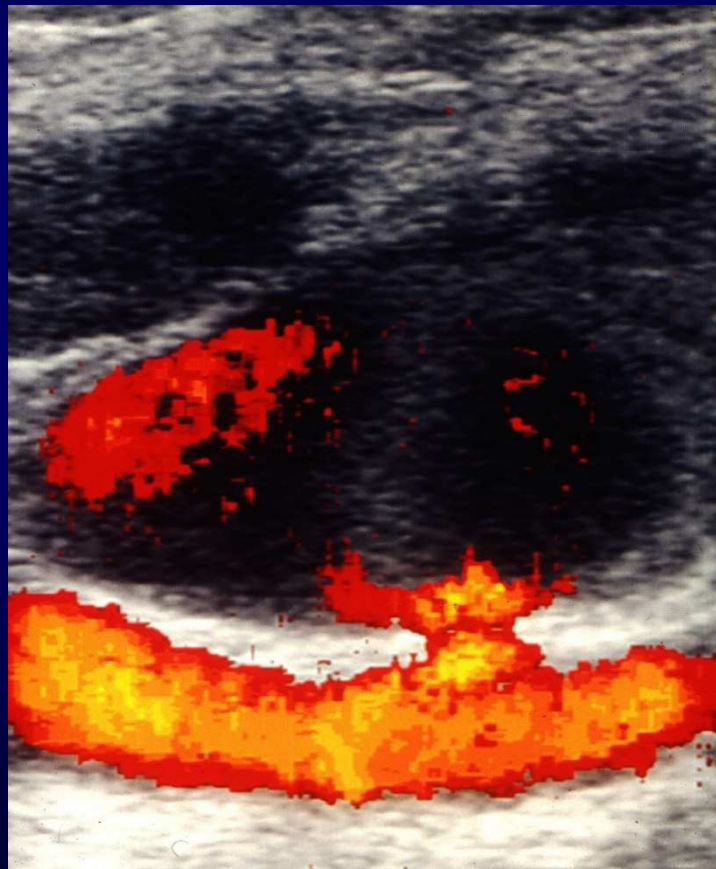
False aneurysm-treatment

- External graded compression
- Ultrasound guided thrombin injection

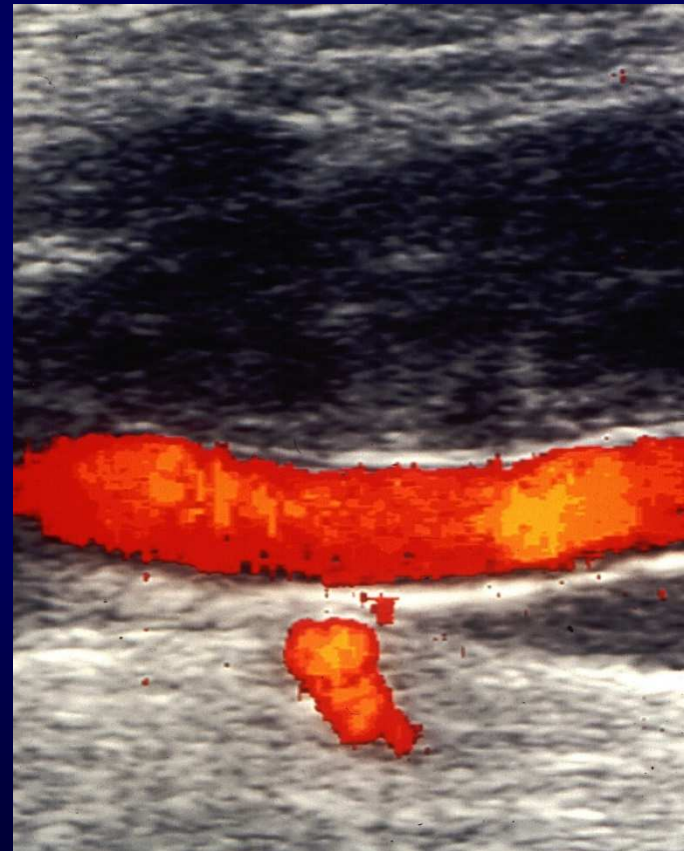
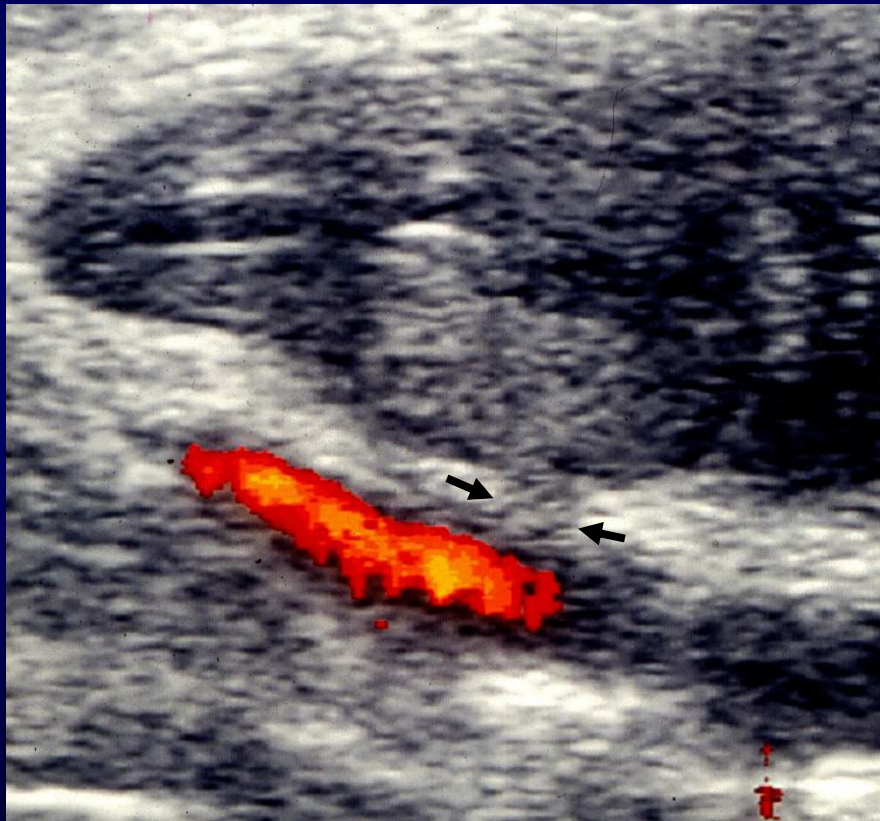
External graded compression



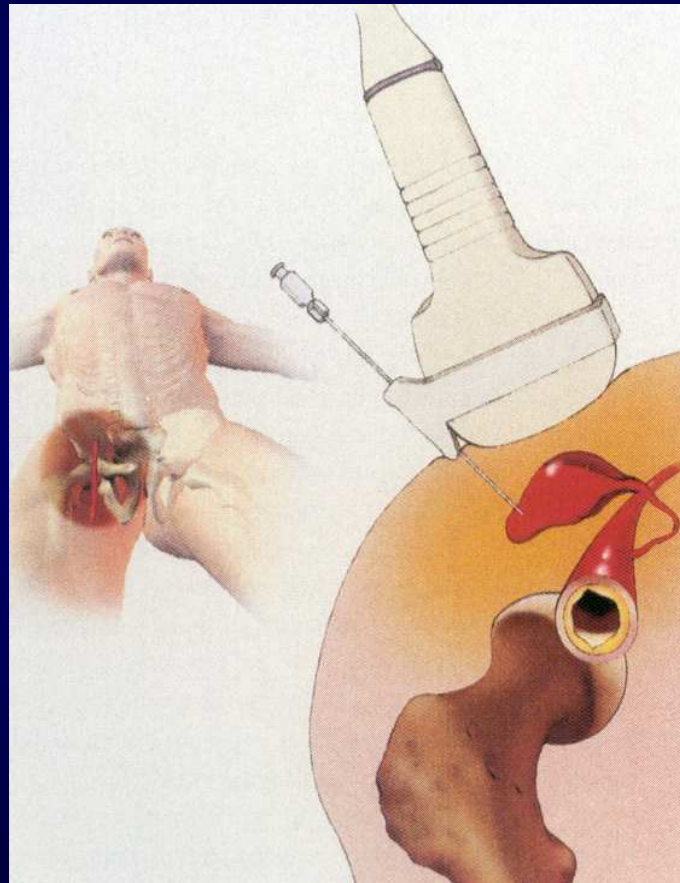
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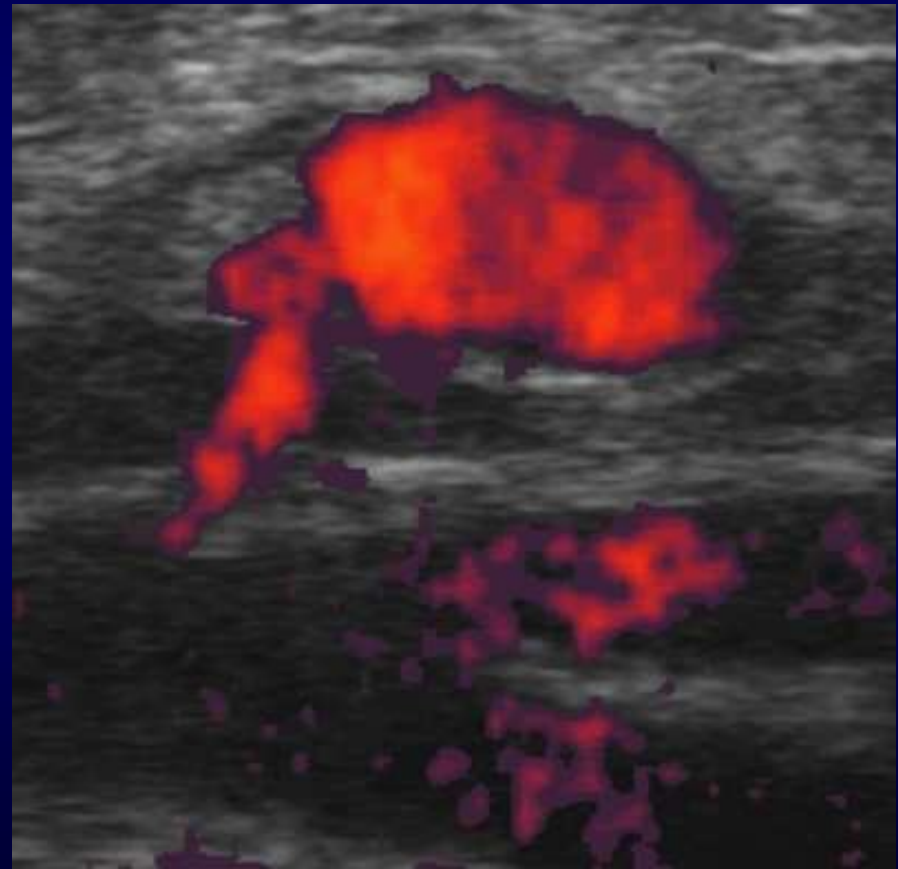
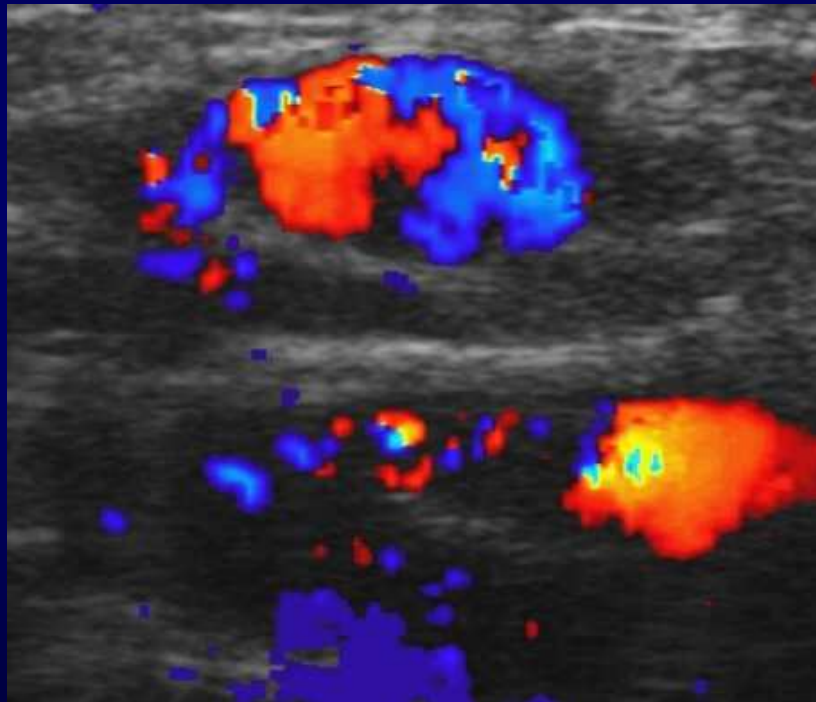
External graded compression



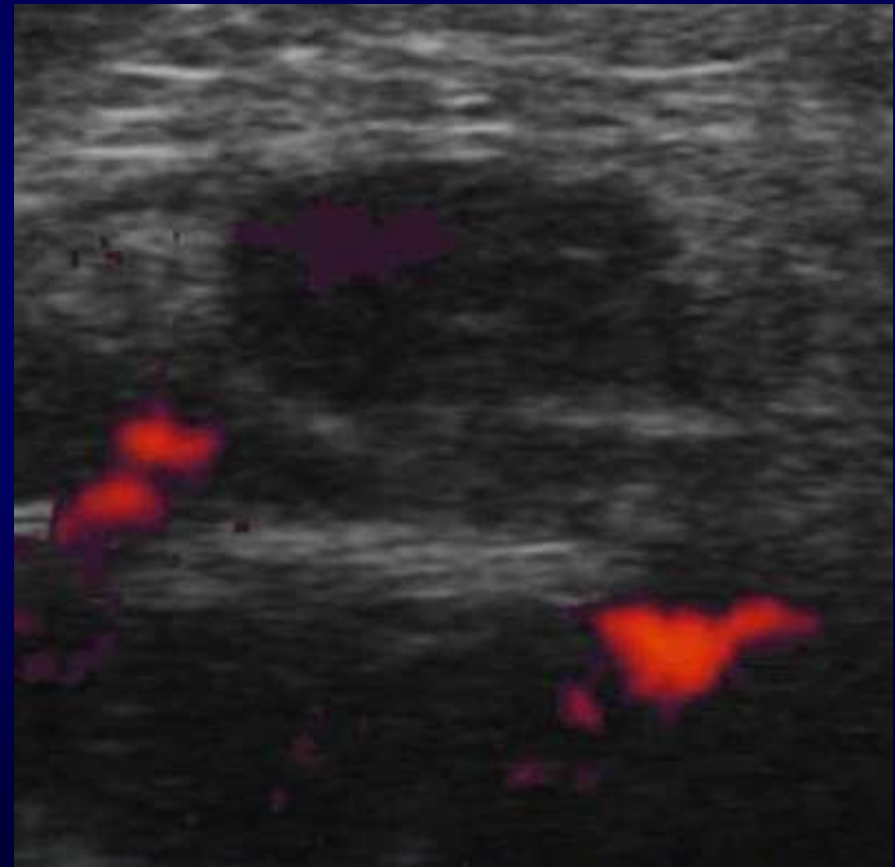
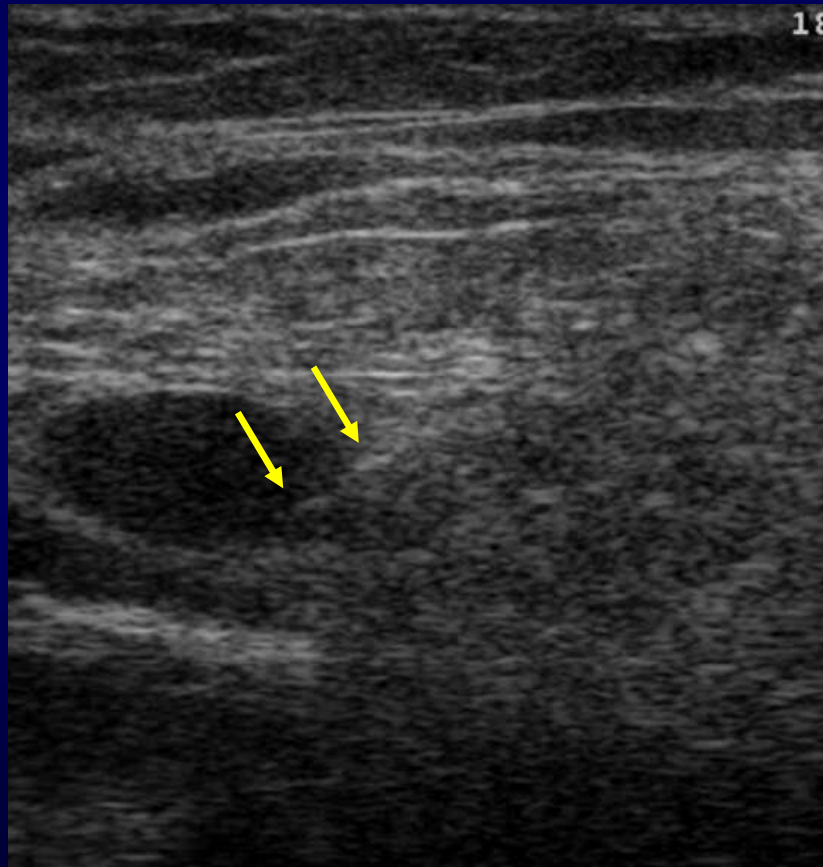
Thrombin injection



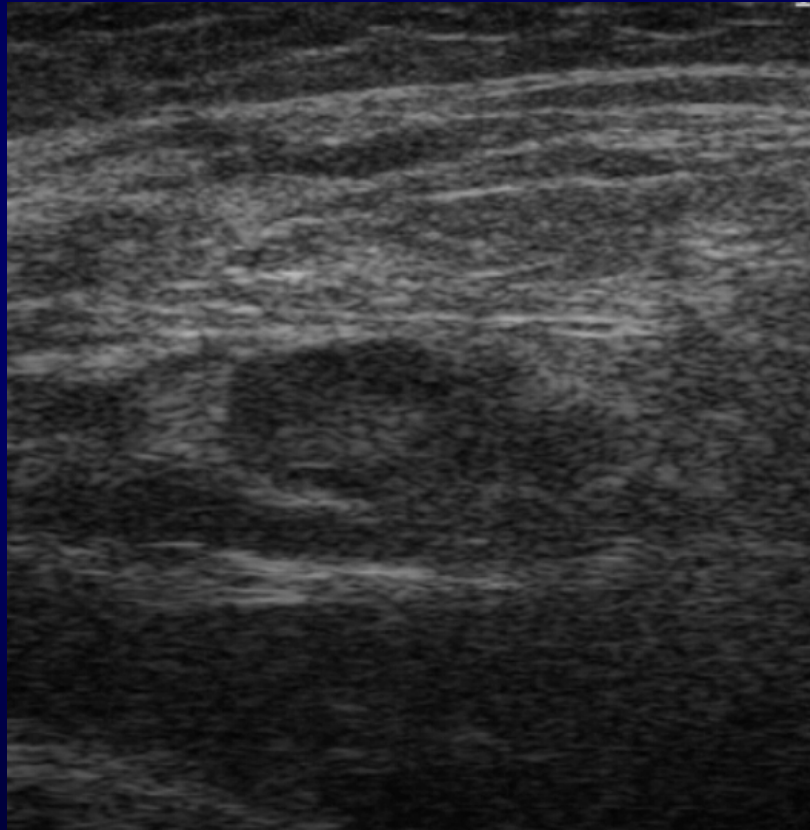
Thrombin injection



Thrombin injection



Thrombin injection



Stenosis/occlusion-treatment

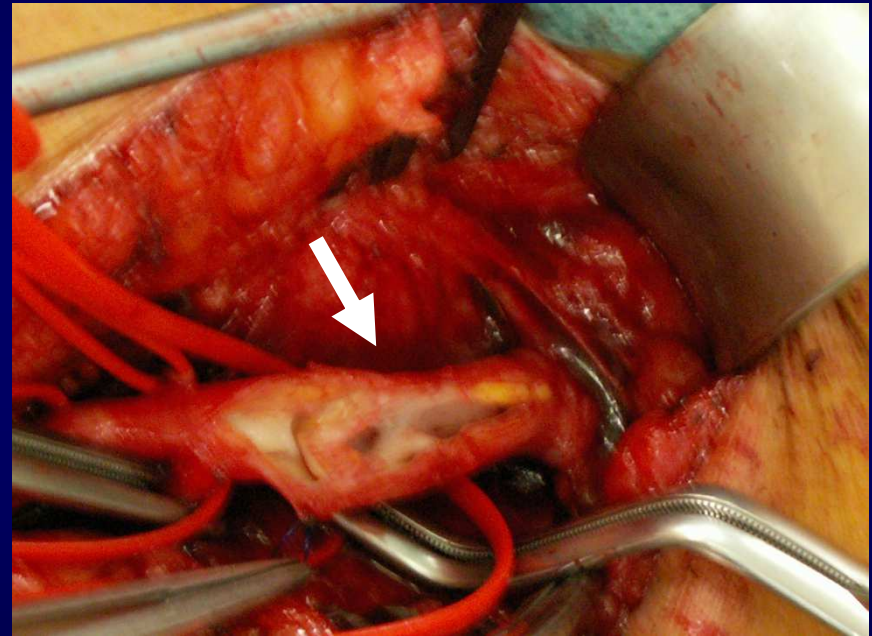
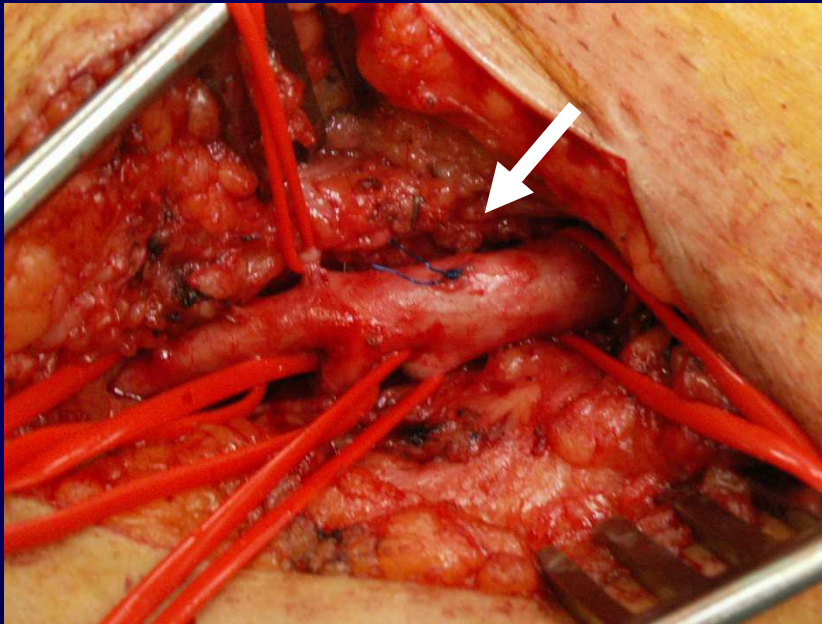
- PTA (caveat: intra-luminal anchor)
- Surgical repair

Stenosis



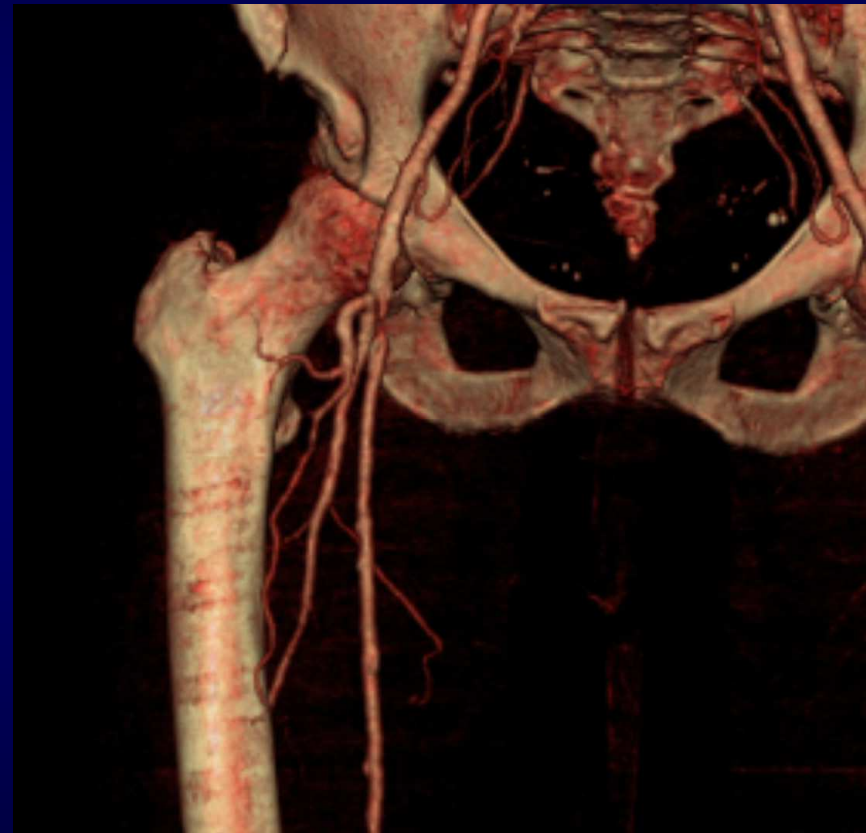
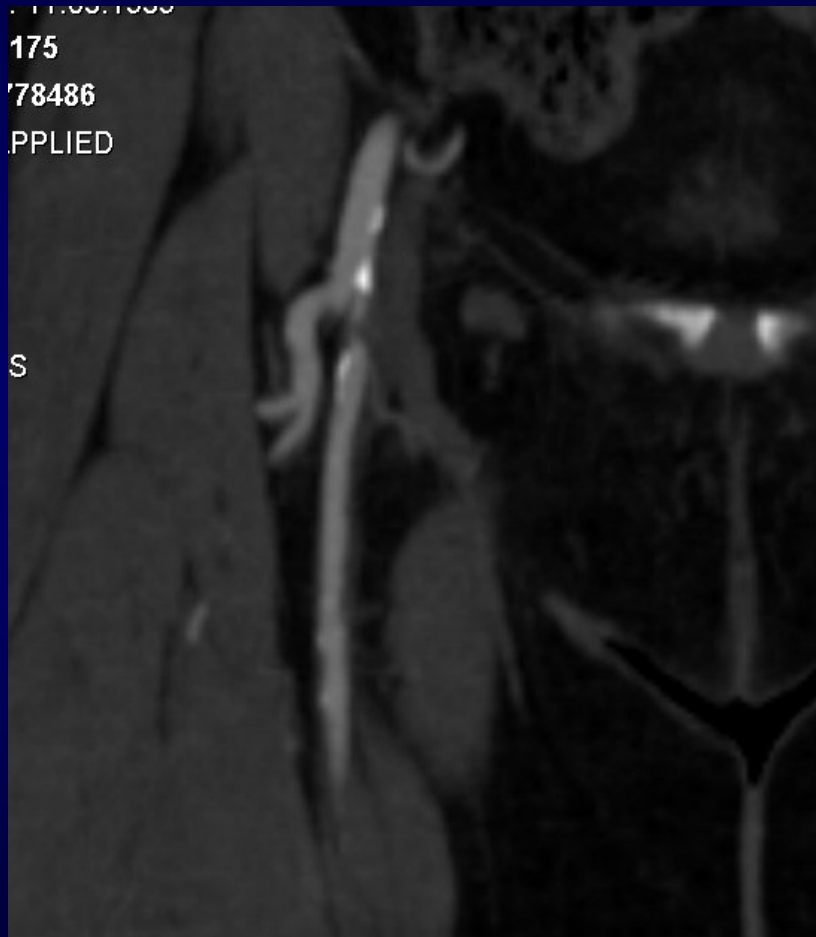
Perclose

Stenosis



Perclose

Stenosis



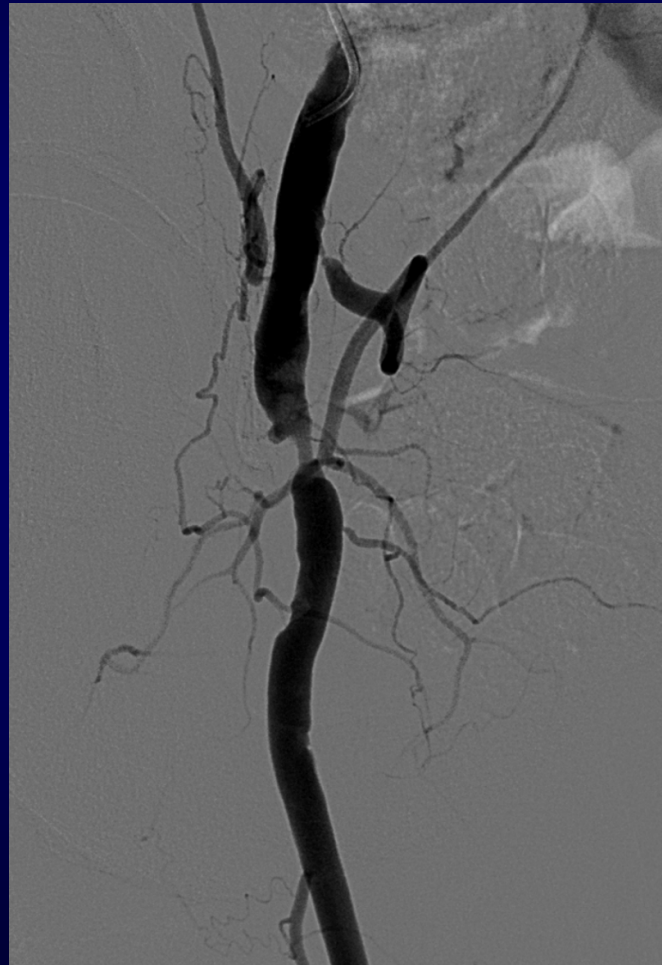
Angioseal

Stenosis



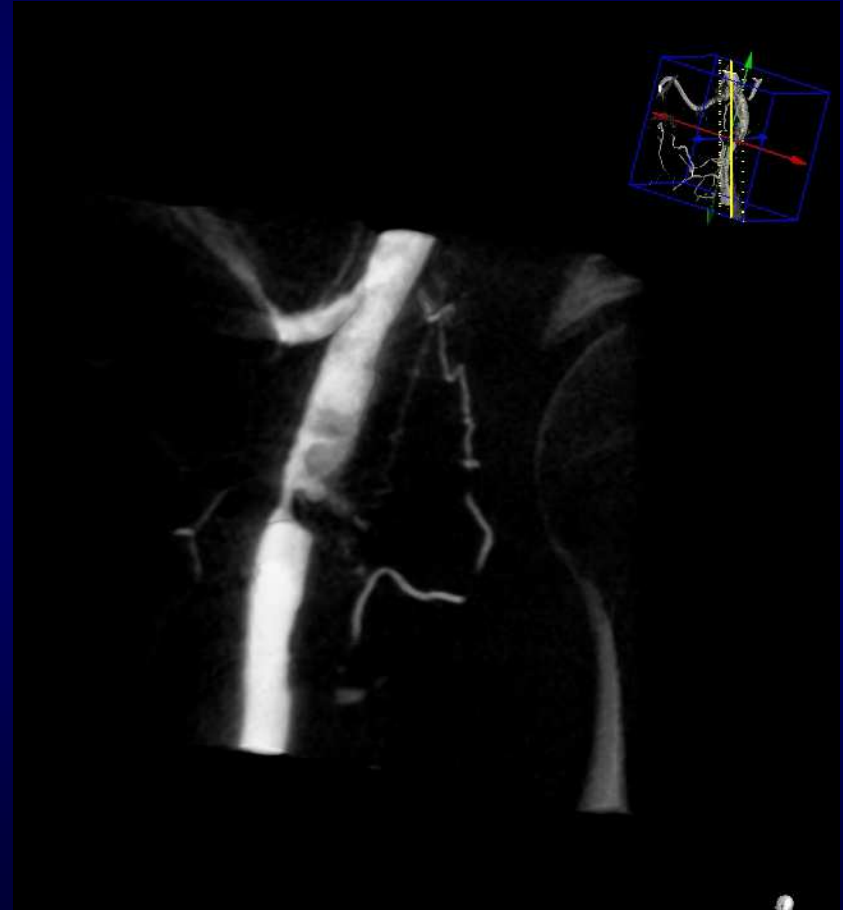
Angioseal

Stenosis



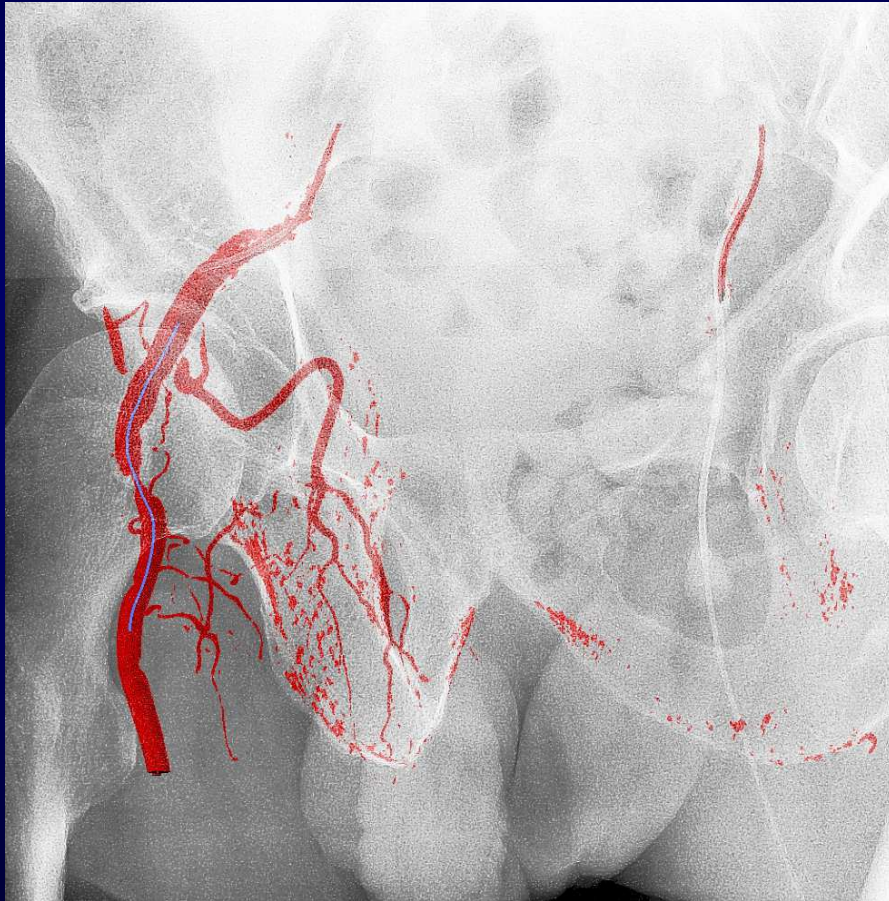
Angioseal

Stenosis

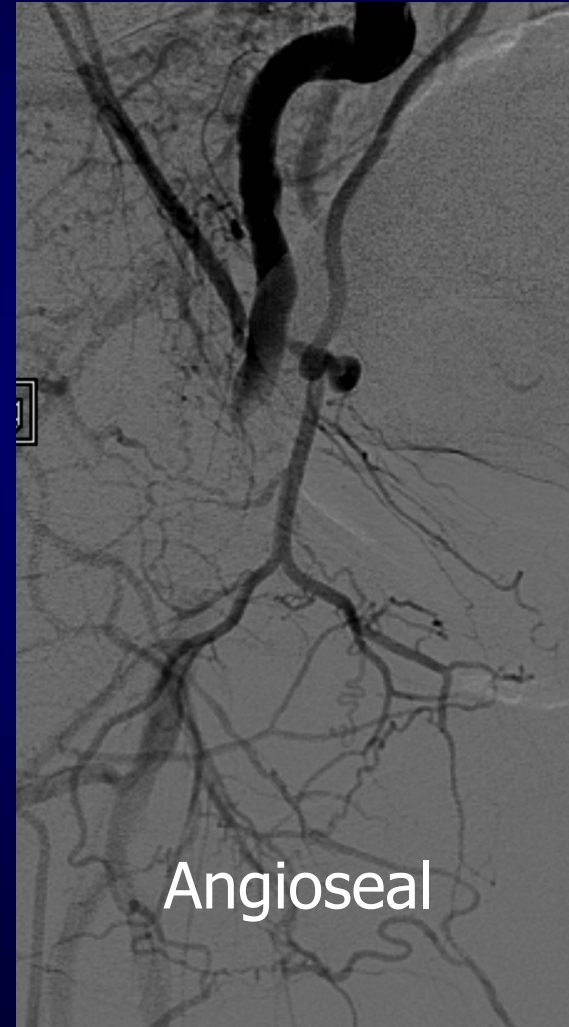
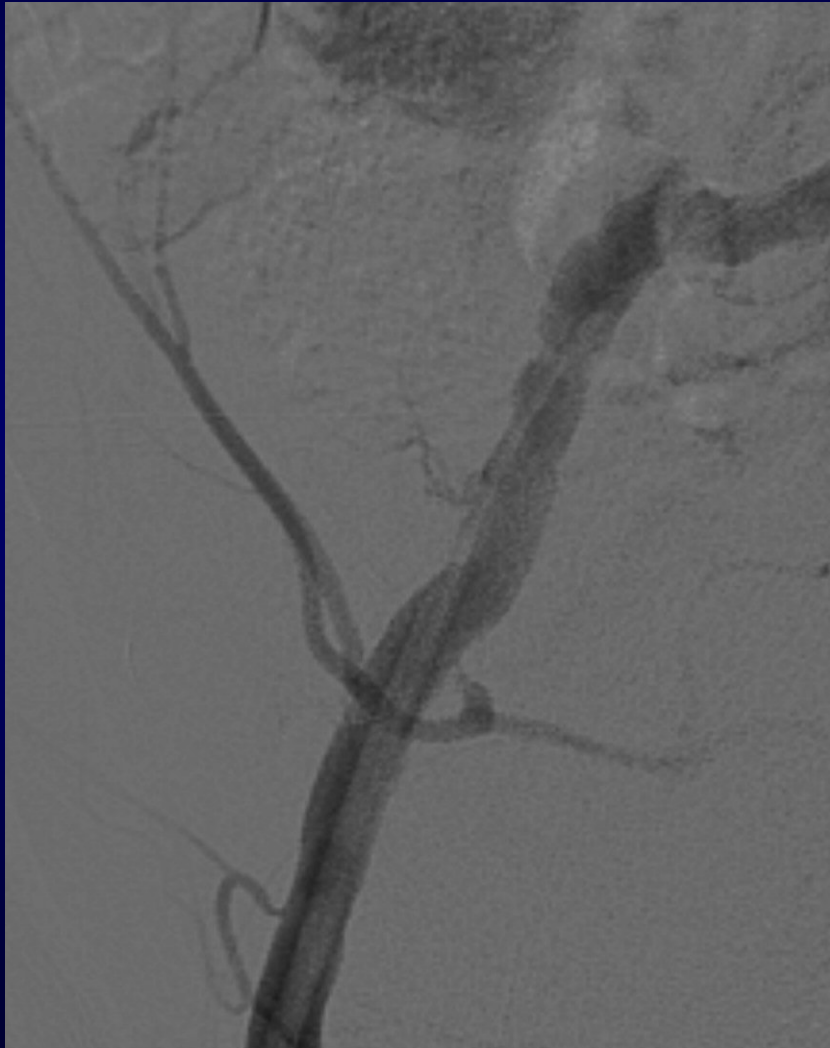


Angioseal

Stenosis

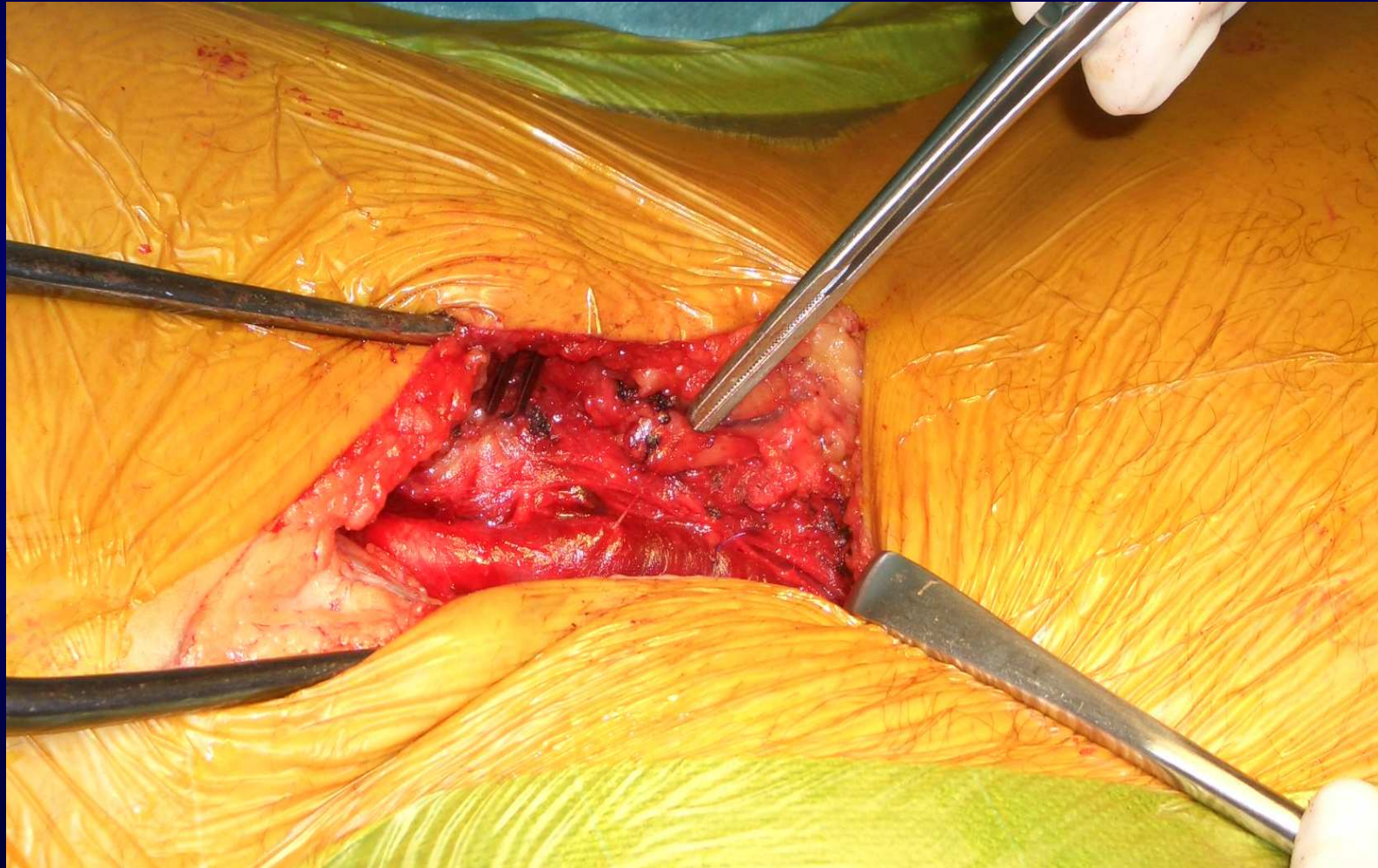


Arterial occlusion



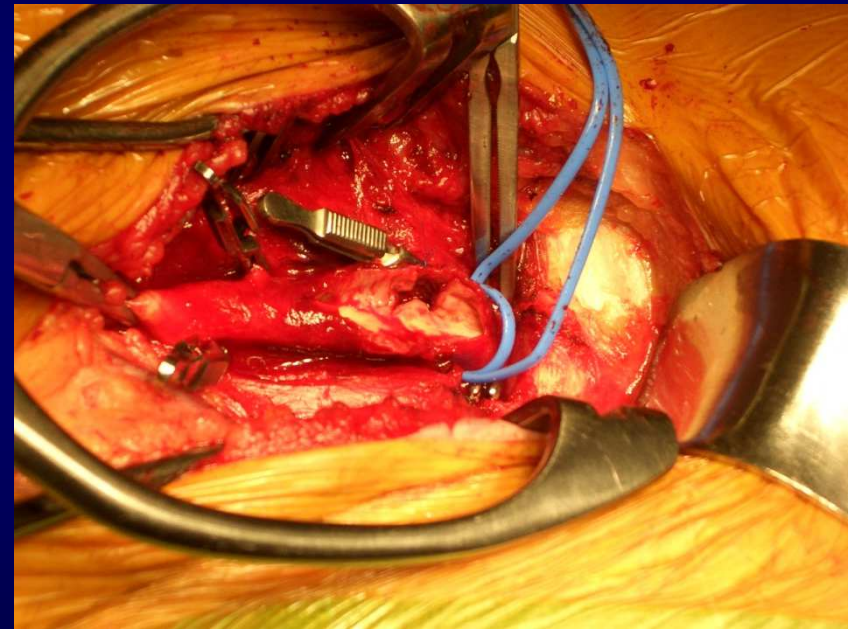
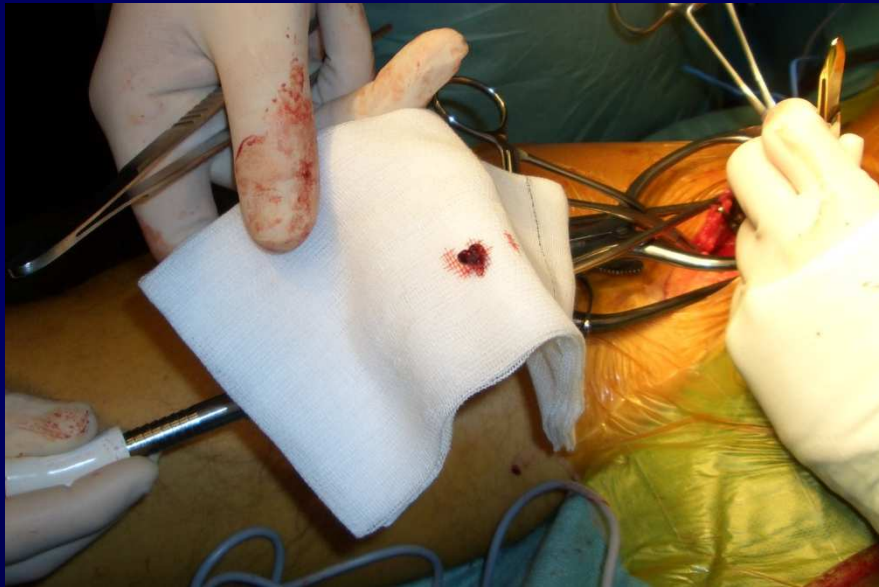
Courtesy JA Vos, MD

Arterial occlusion



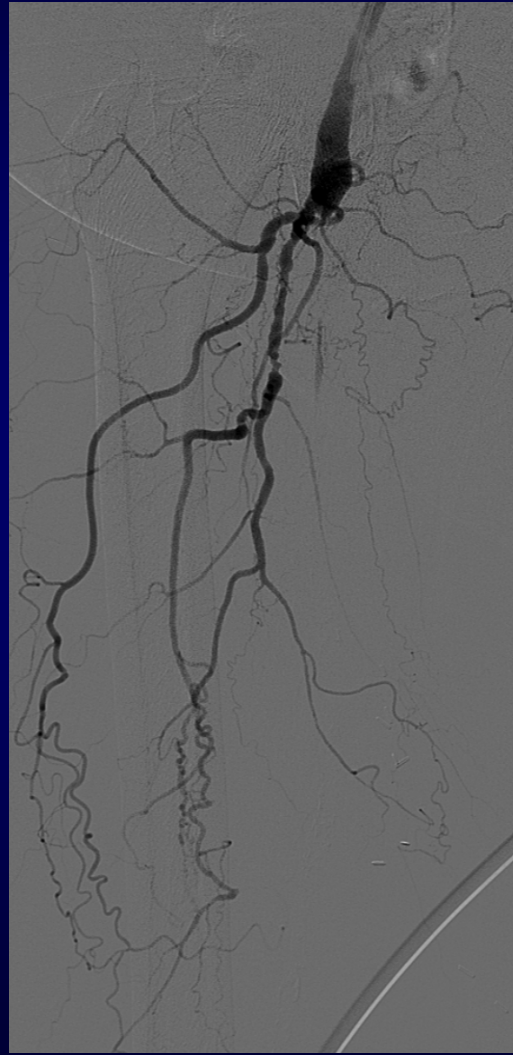
Courtesy JA Vos, MD

Arterial occlusion



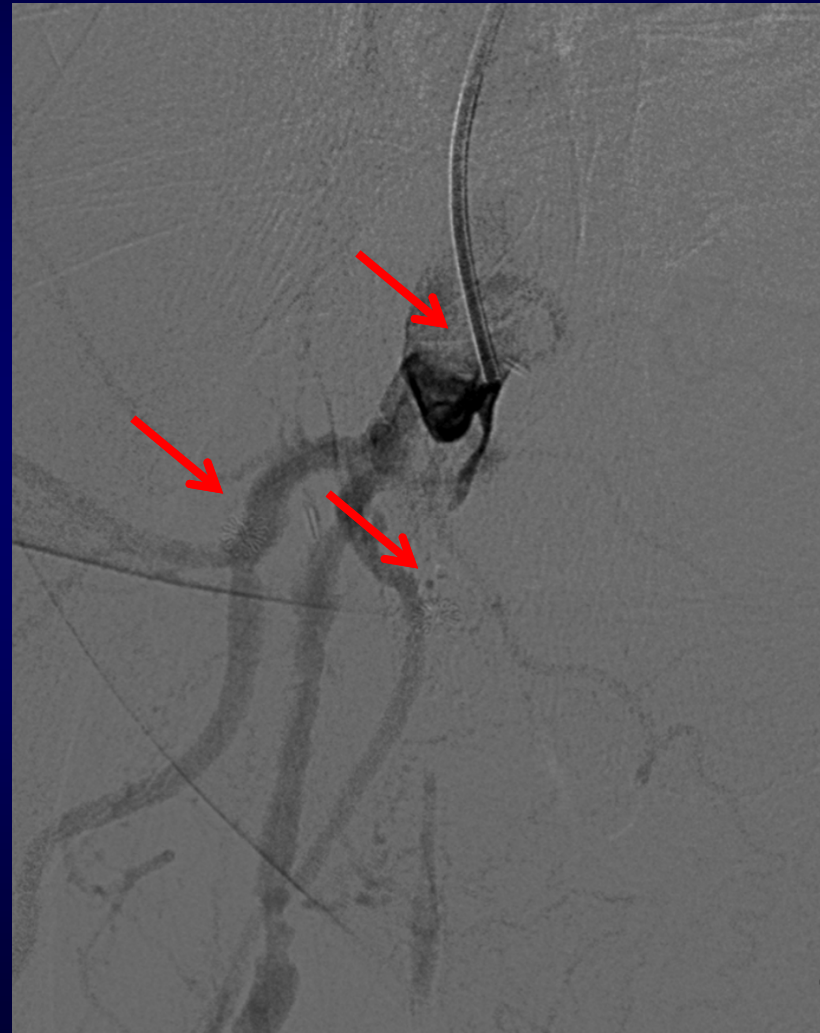
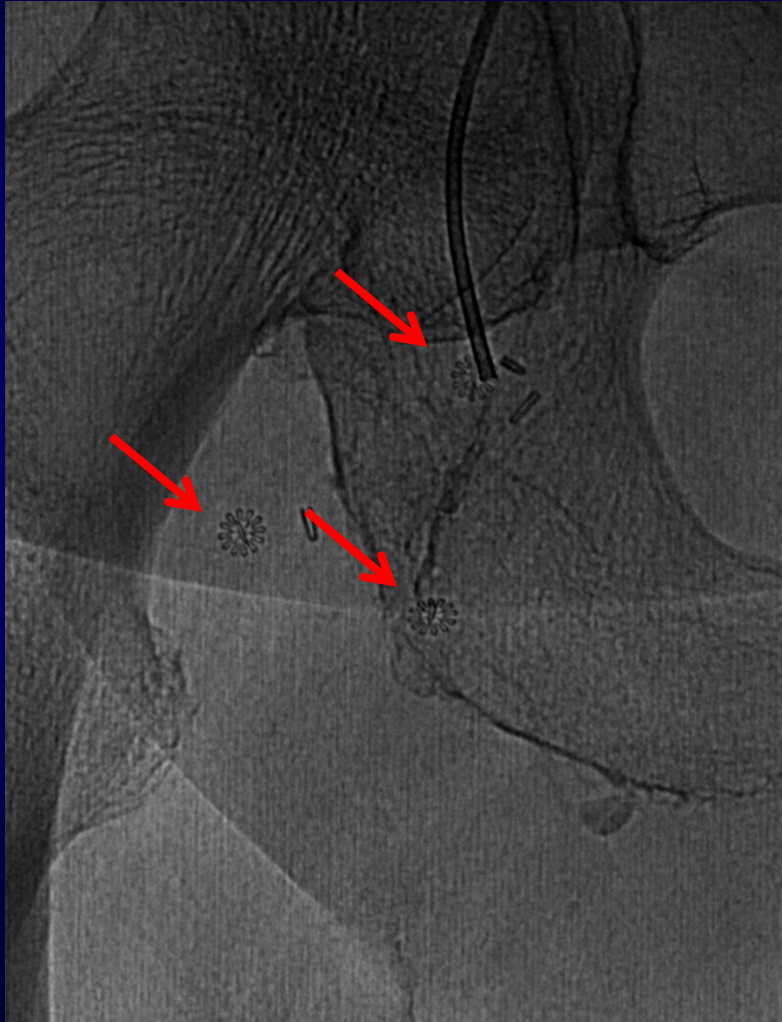
Courtesy JA Vos, MD

Arterial occlusion



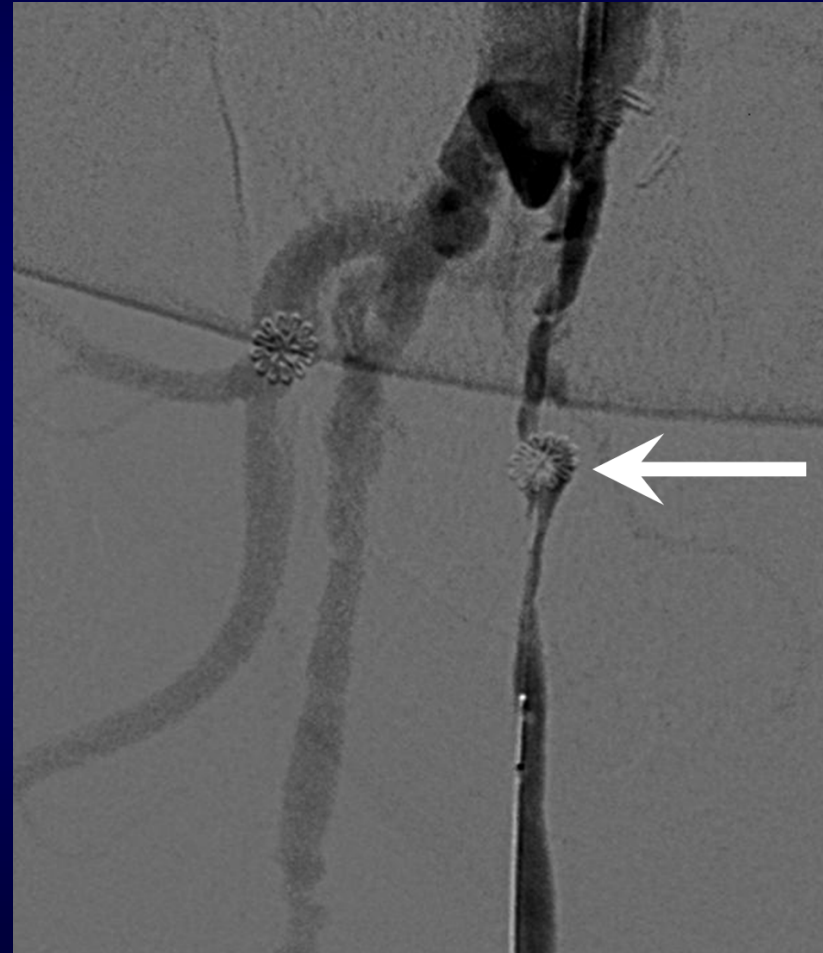
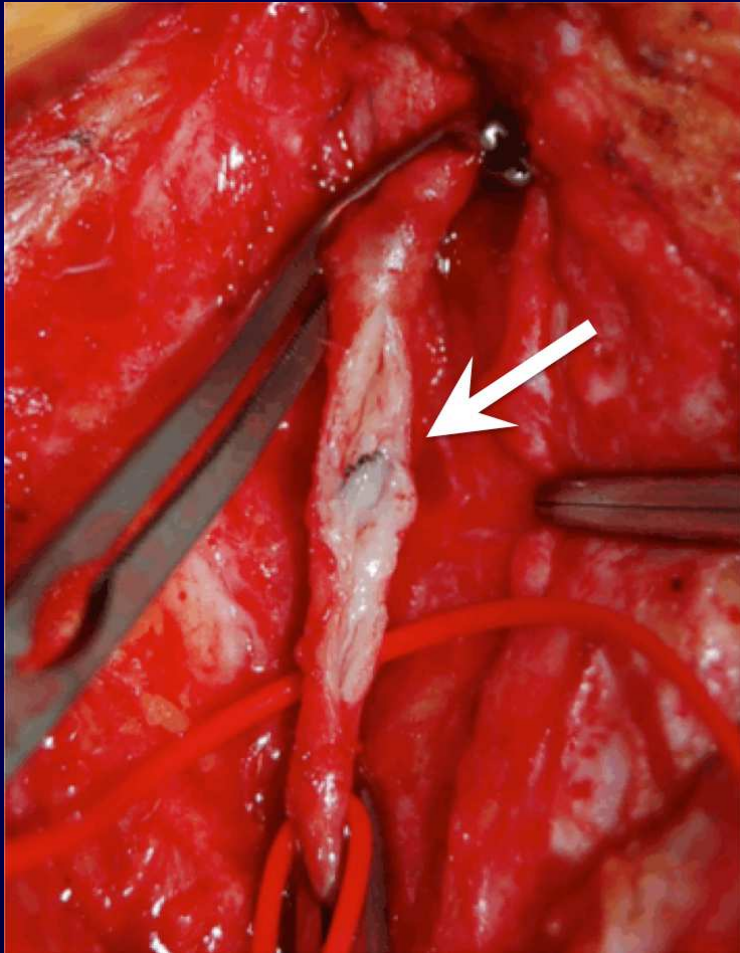
Starclose

Arterial occlusion

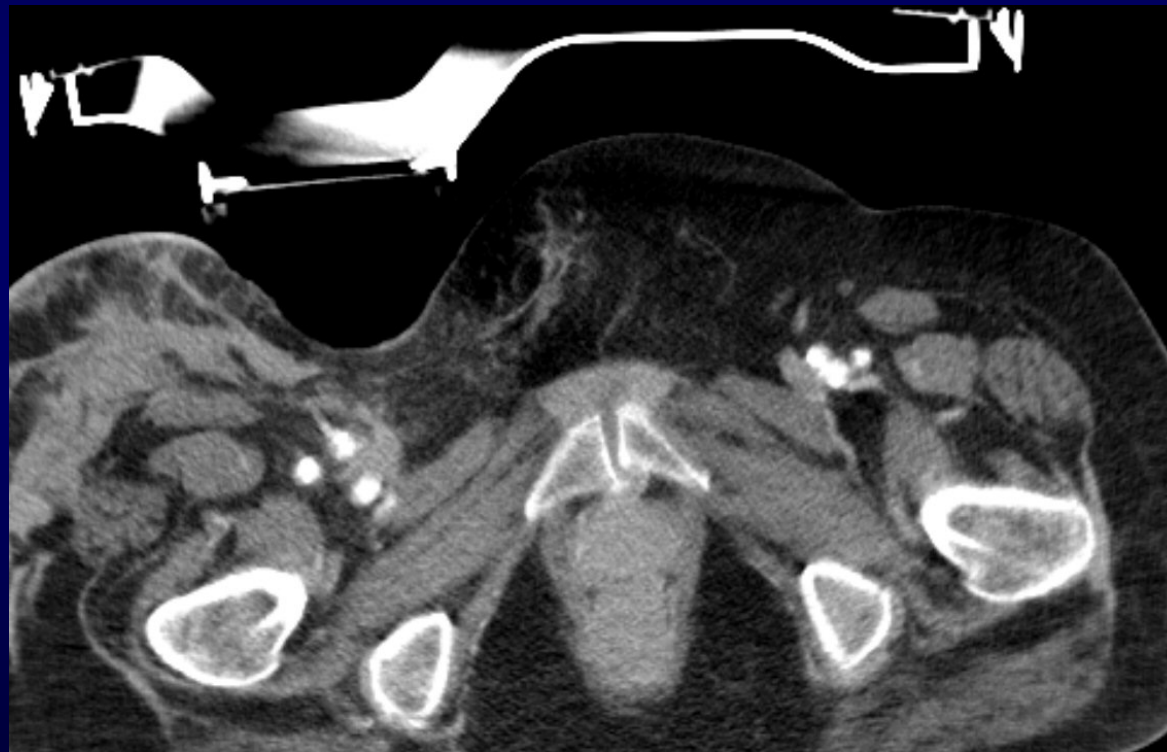


Starclose

Arterial occlusion



Arterial laceration



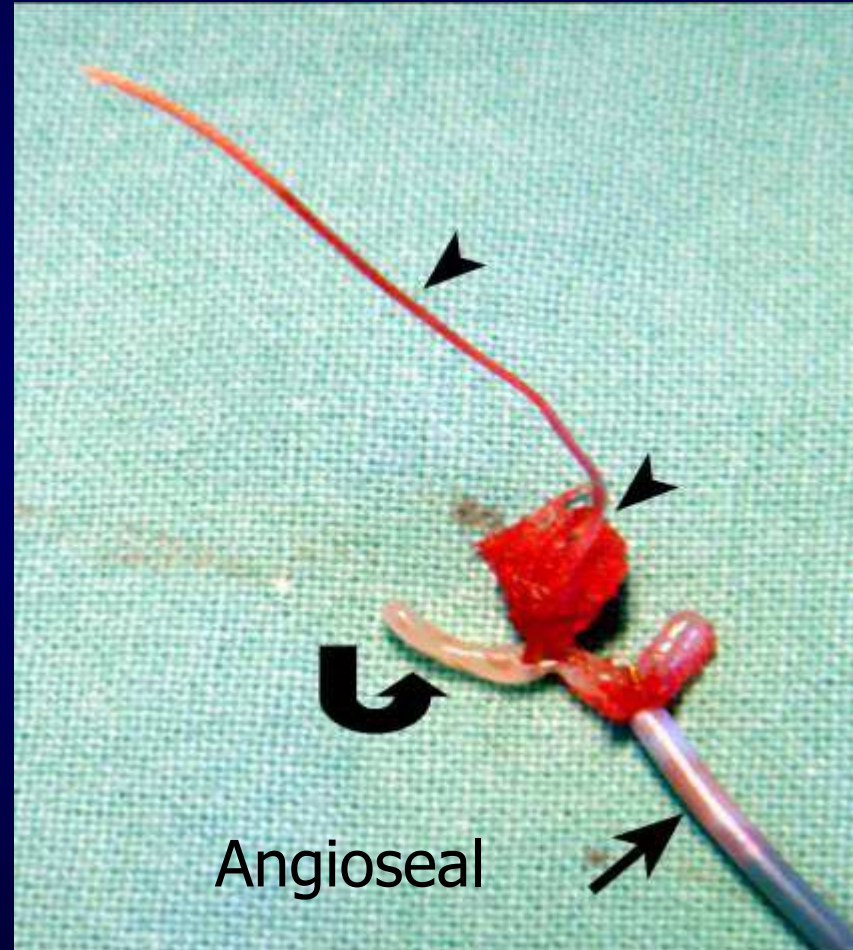
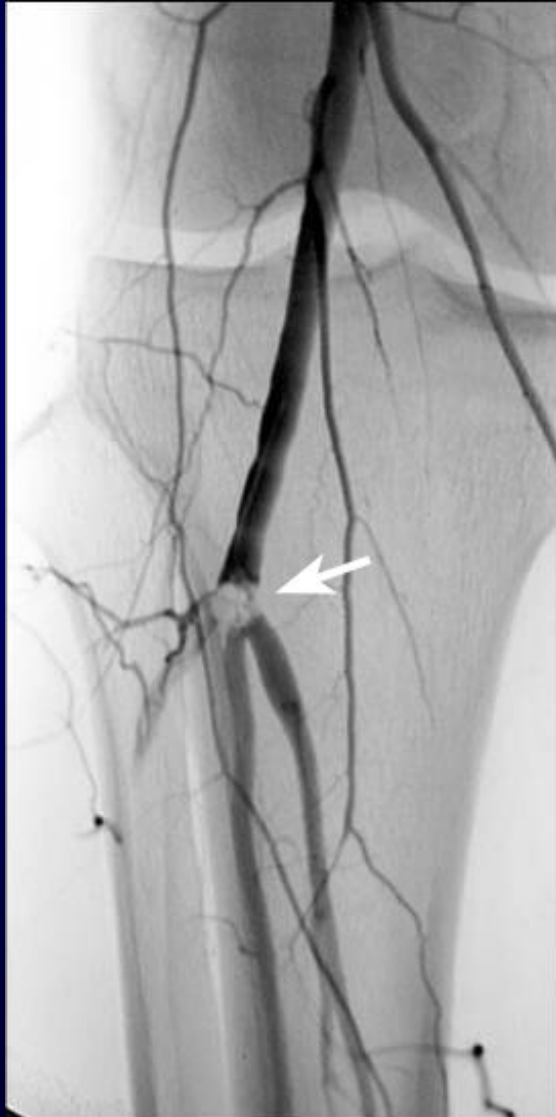
Angioseal

Arterial laceration



Angioseal

Distal embolization

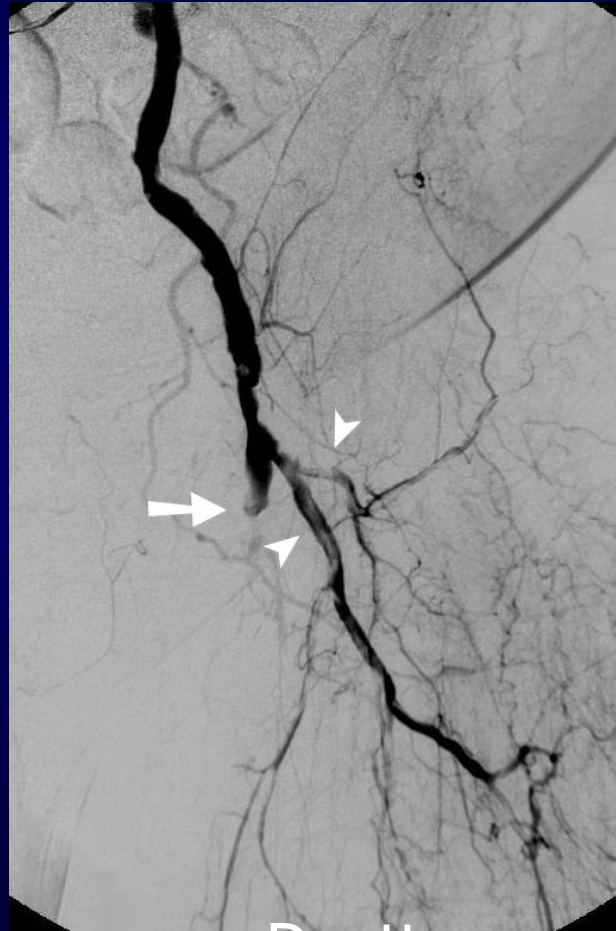


Courtesy John Grønvall, MD

Infection

- Prevention
 - New drapes, new gloves etc.
- Treatment
 - Systemic antibiotics
 - Surgical repair in case of
 - Persistent bacteriemia
 - Symptomatic relapse
 - Abscess formation
 - Hemorrhage and/or pseudoaneurysm formation

Thrombosis



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Thrombosis-treatment

- Surgical thrombectomy
- Catheter-based thrombolysis