



# How I do PEVAR

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on behalf of Vascular Specialists @ UHZ



# PEVAR Technique @ UHZ

- **Identify potential troubles on CTA**
  - Calcifications, atherome, stenosis
- **US aided puncture**
- **High access site**
  - 2 cm above Bifurcation



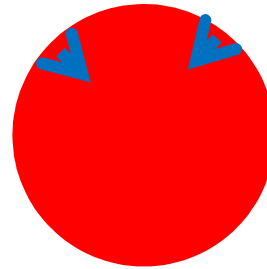
# Technique @ UHZ

- **Hospitalised patient**
  - $\leq 14$  Fr: 1x Proglide
  - $\geq 14$ Fr – 24 Fr: 2x Proglide
  - Kompressing dressing, no bed rest
  
- **Out-patient**
  - $\leq 14$  Fr: 2x Proglide
  - $\geq 14$ Fr – 24 Fr: 3x Proglide (2+1)
  - Kompressing dressing, no bed rest

# Technique @ UHZ

- **Three Proglide Technique**

- **Preclosing 10h-14h**



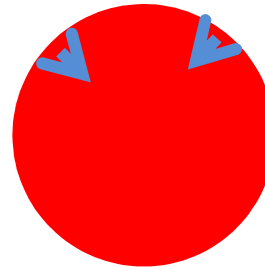
# Sheath removal



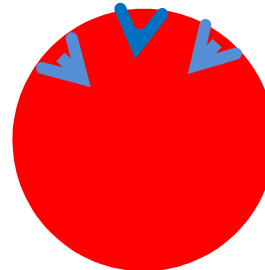
# Technique @ UHZ

- **Three Proglide Technique**

- **Preclosing 10h-14h**



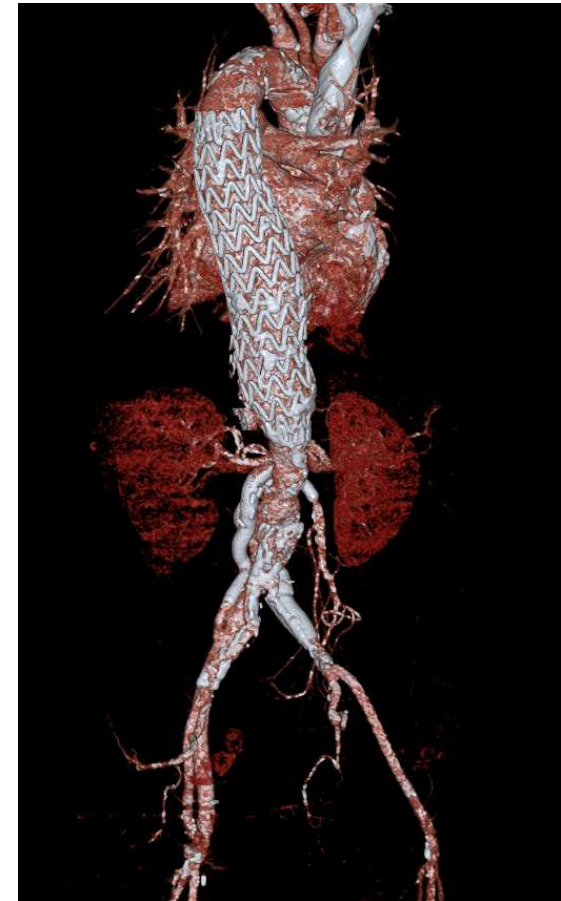
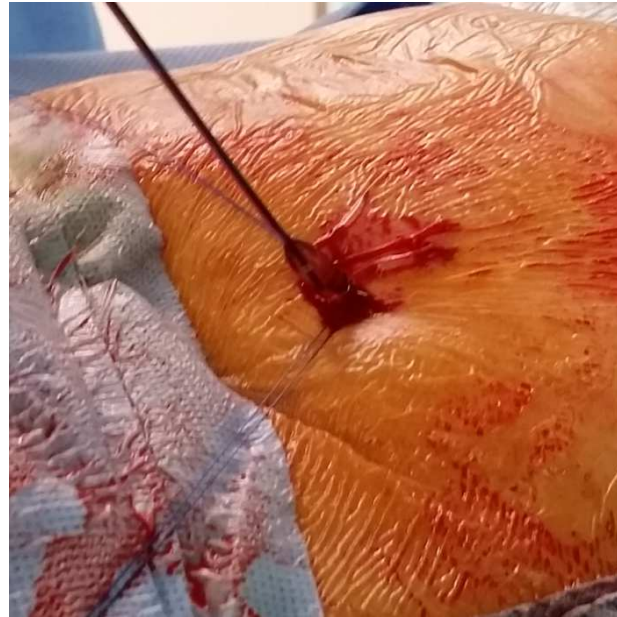
- **Additional ProGlide 12h**



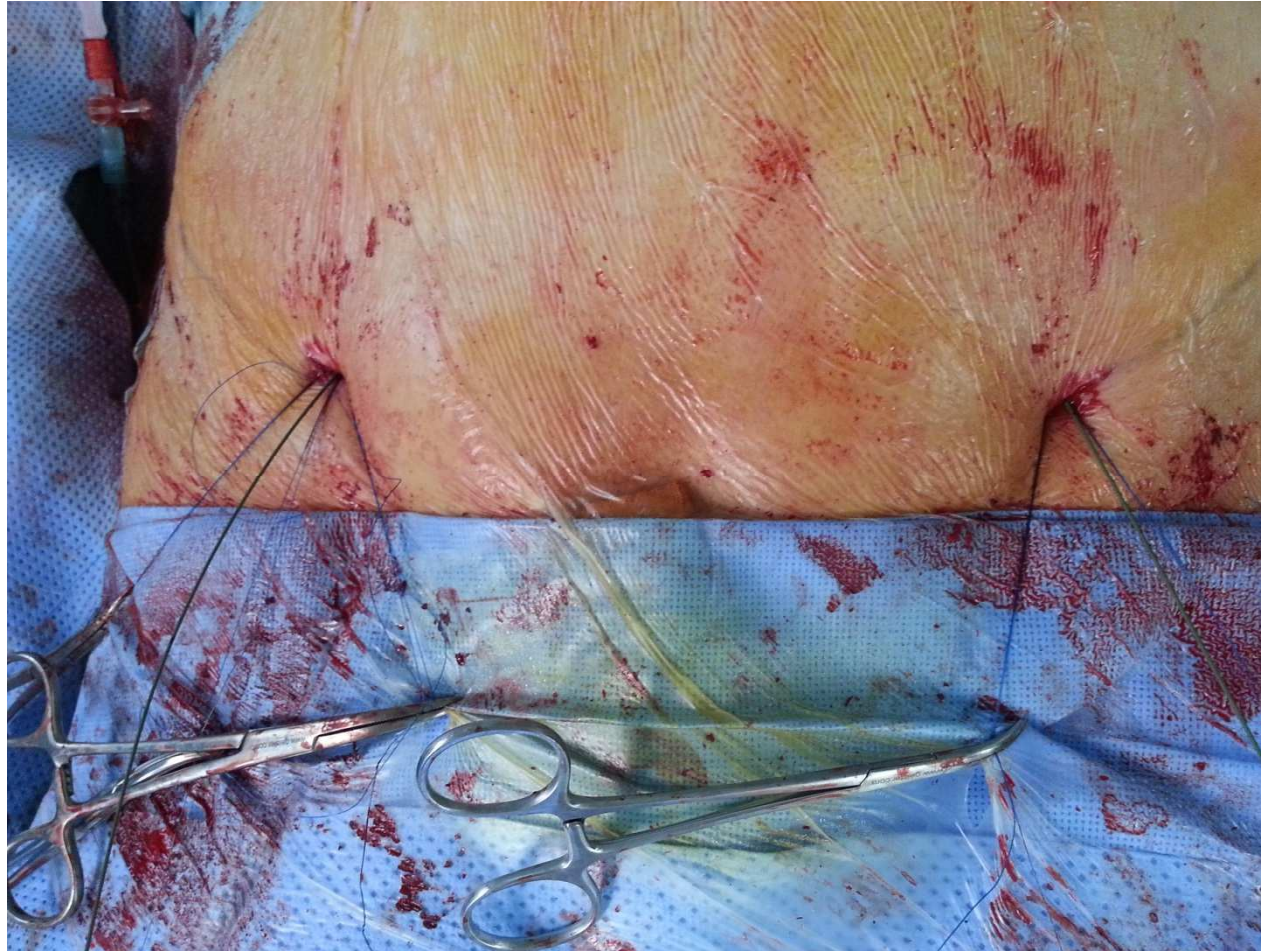
# Accessing a surgical graft



Predilatation with PTA balloon

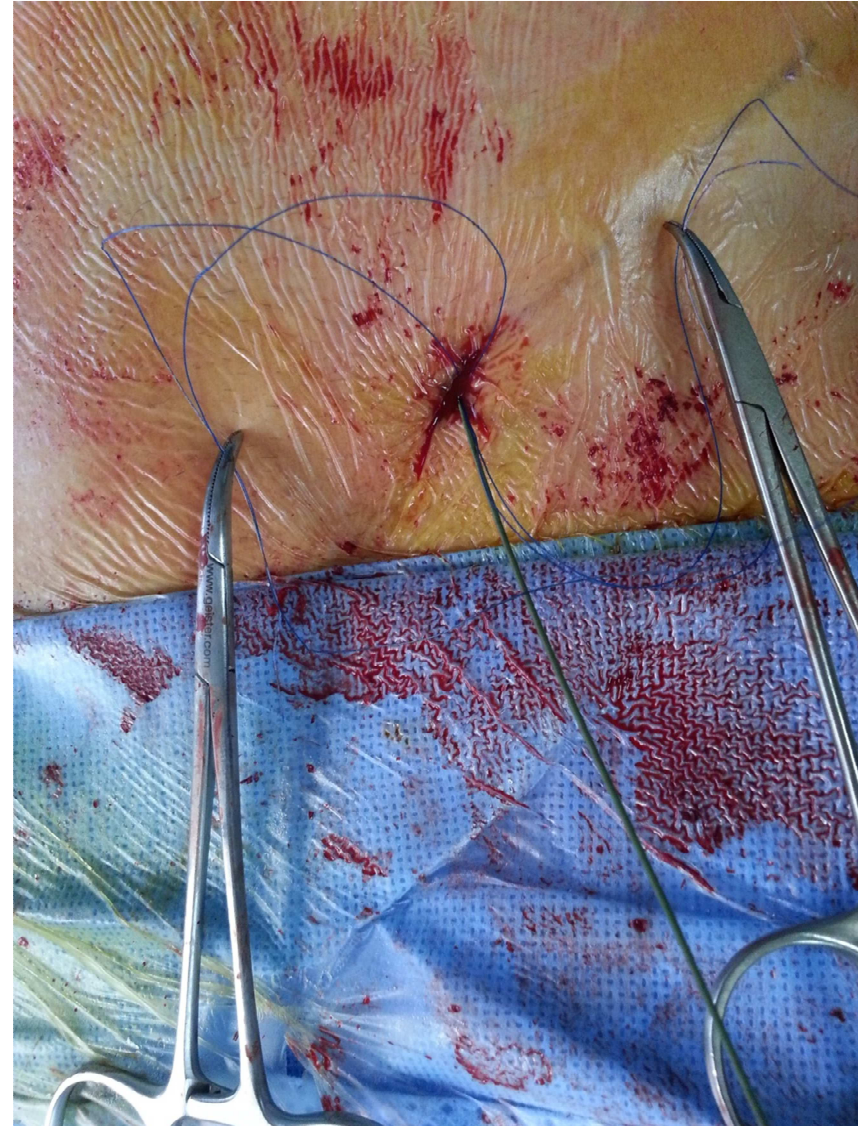


# Slight traction on sutures





# Relax traction



Right side OK



GW removed- access sealed



# Residual bleeding



# Knot tightening



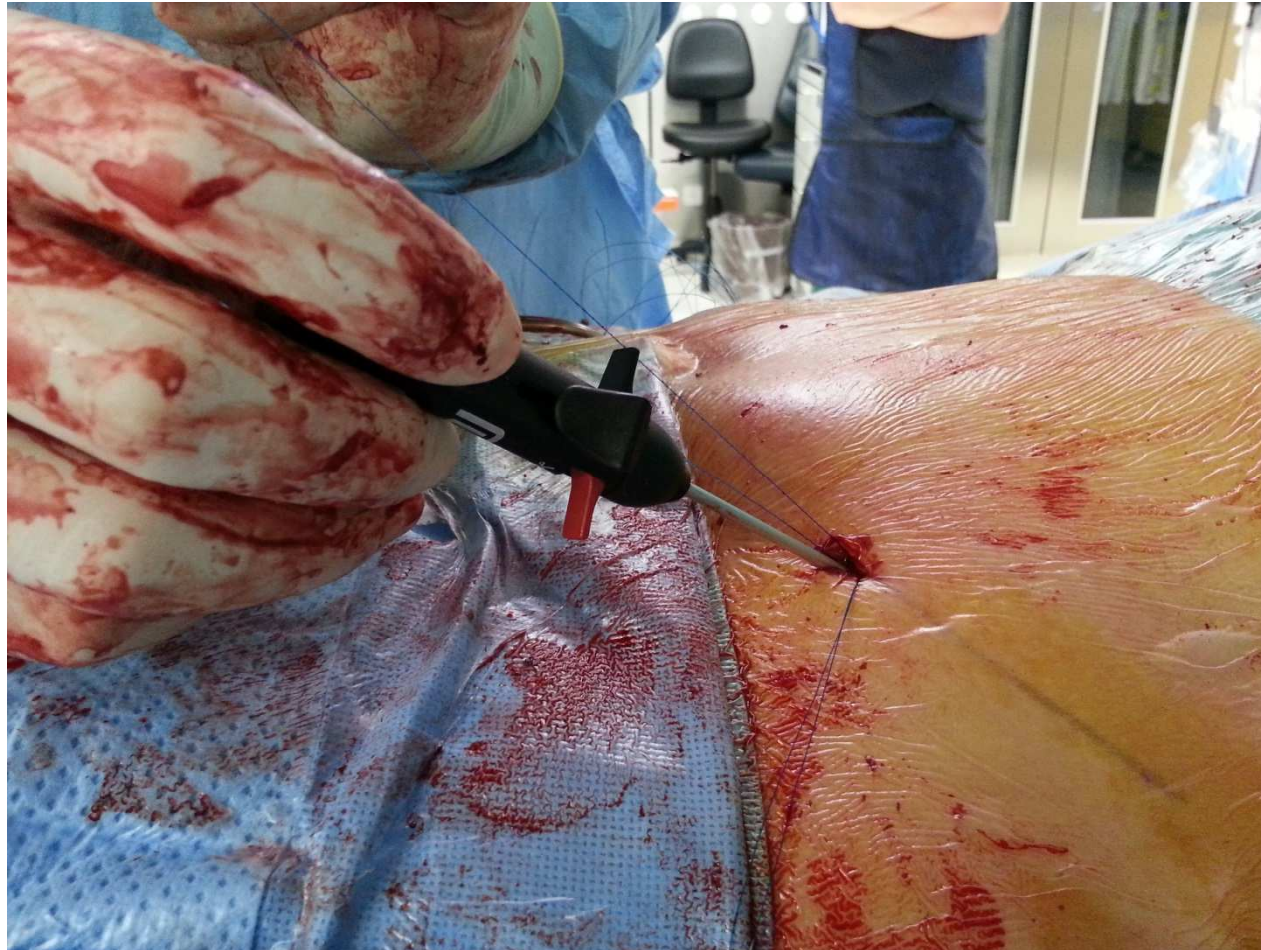
Again some traction for 2-5'



# Relax traction – access sealed



# Cutting the sutures





Looks good 😊



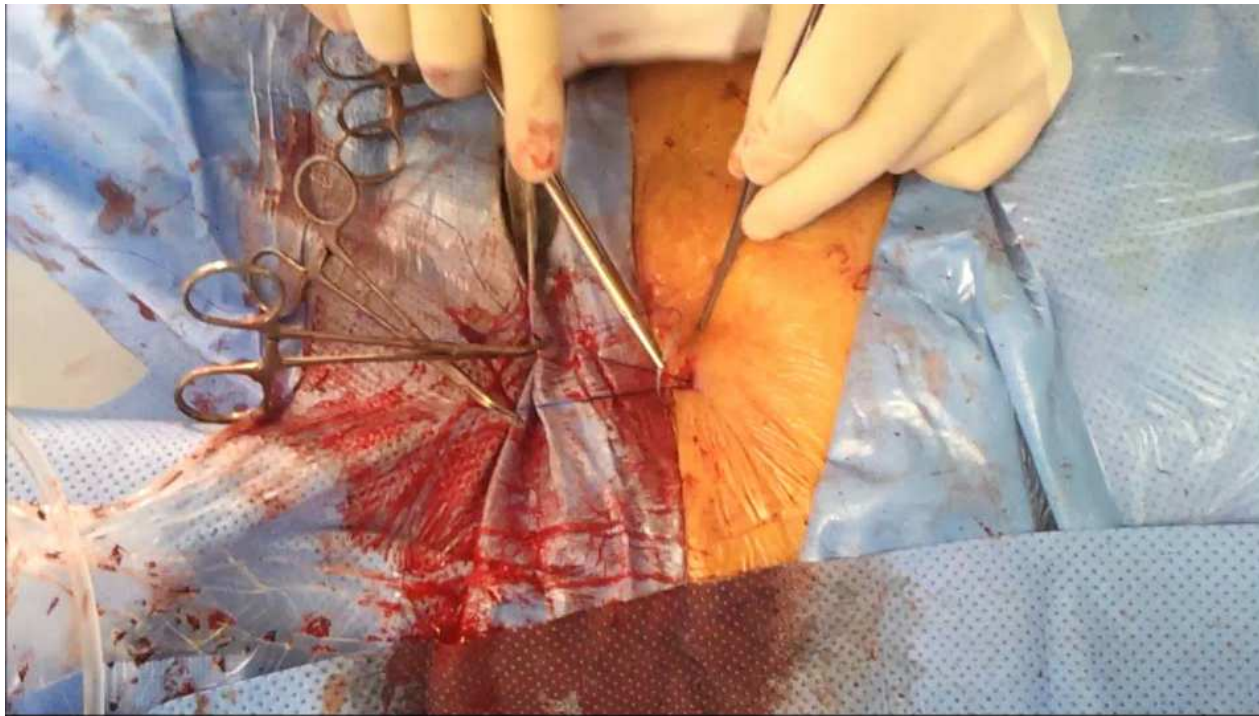
# Bail out T&T 1: Cross knotting



# Bail out T&T 2: Sealing stitch



# Sealing stitch



# Sealing stitch



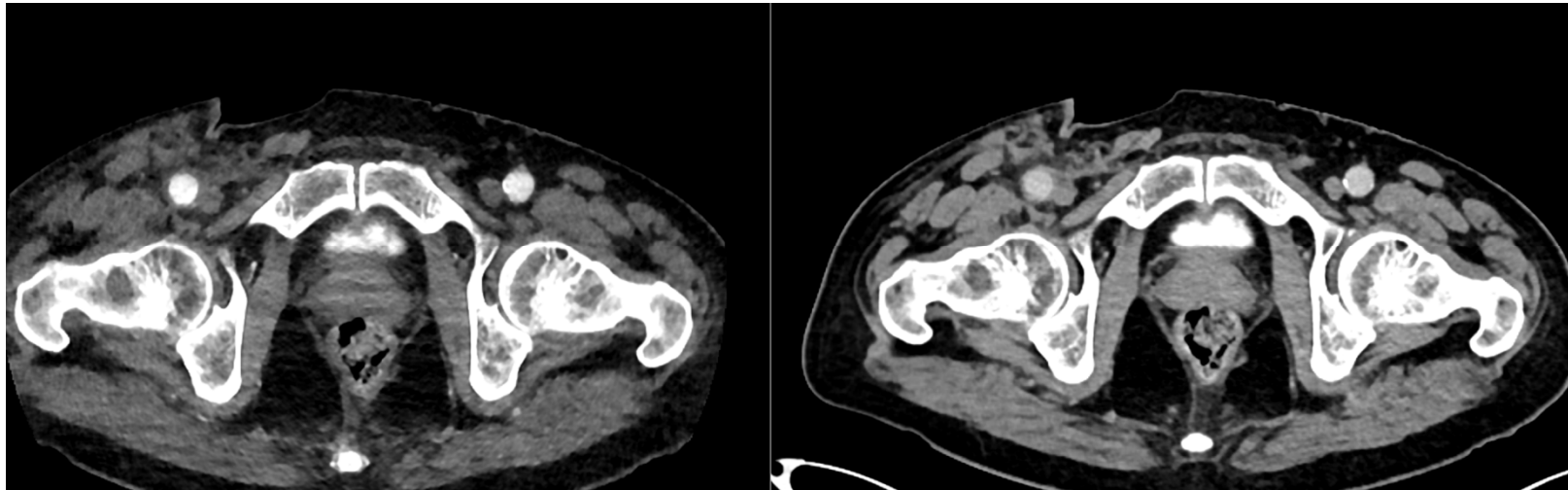
# Pulse control



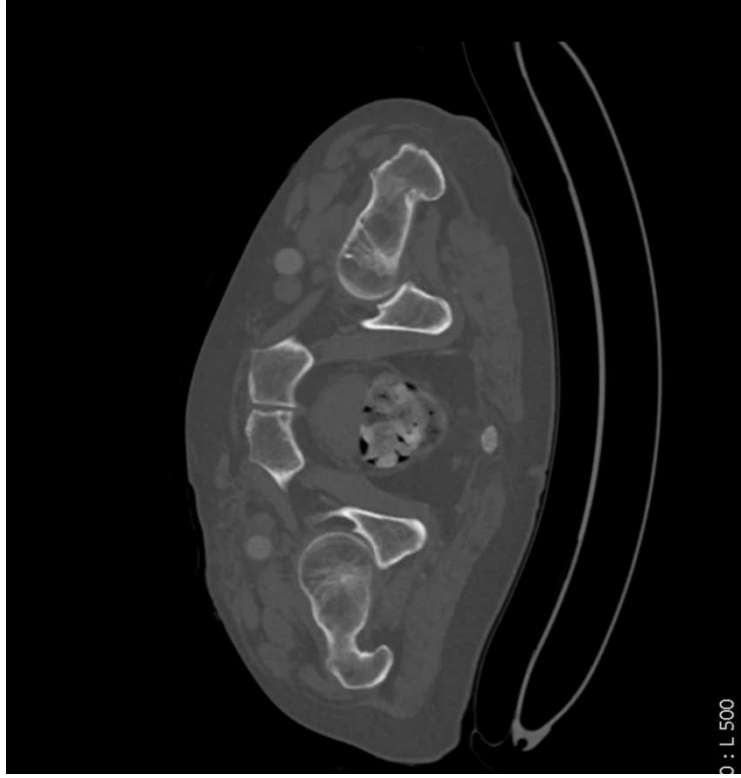
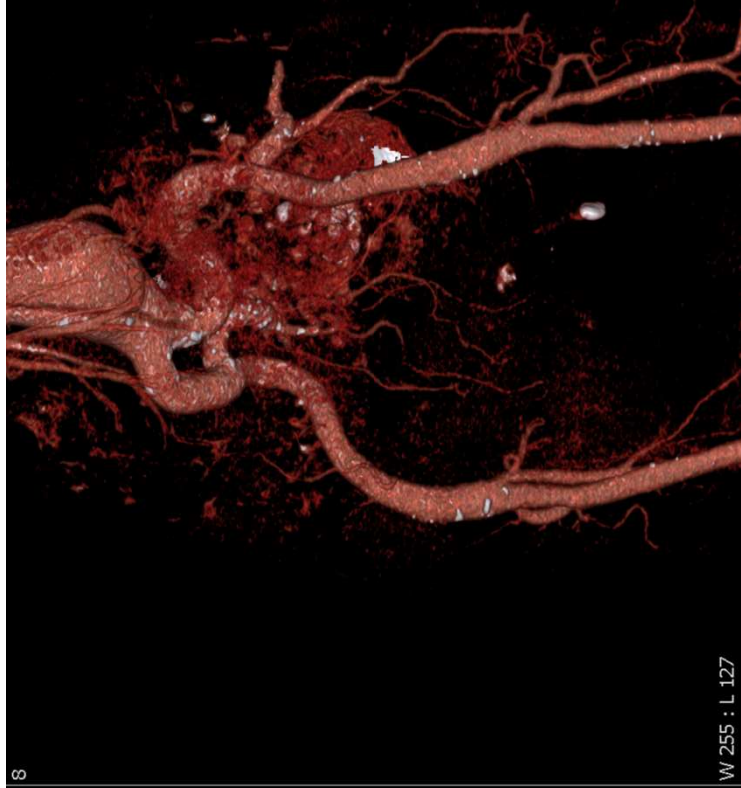
Stich removed on 1. POD



# Postoperative CTA







8



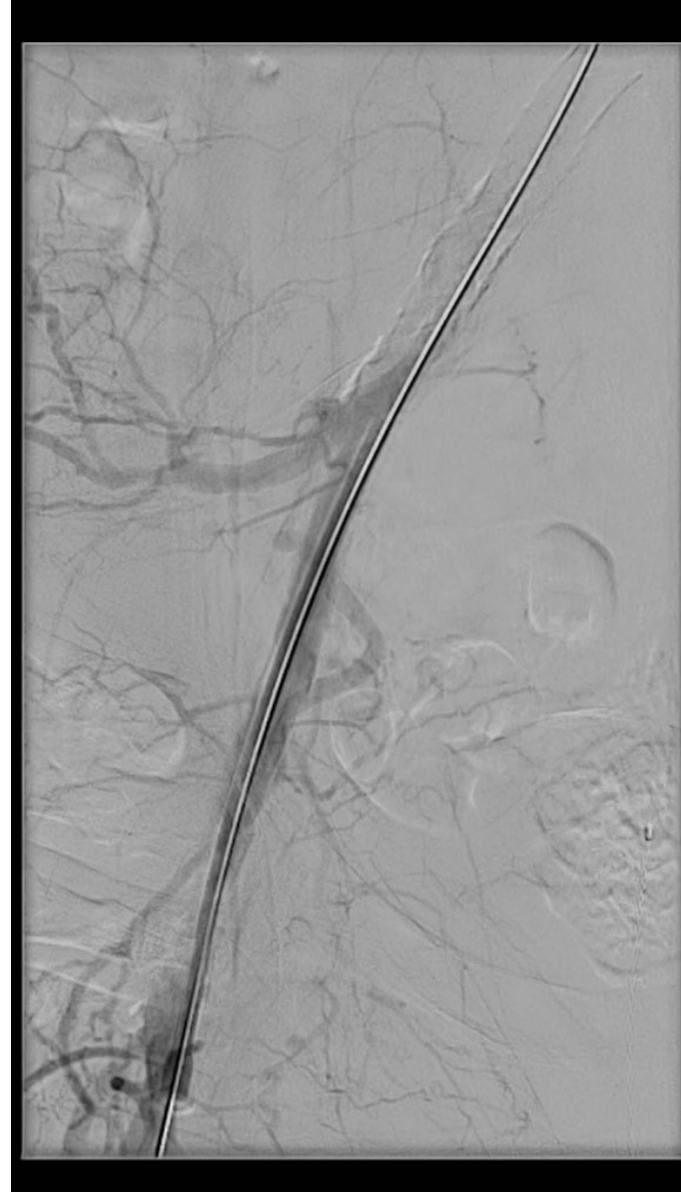
# False aneurysm

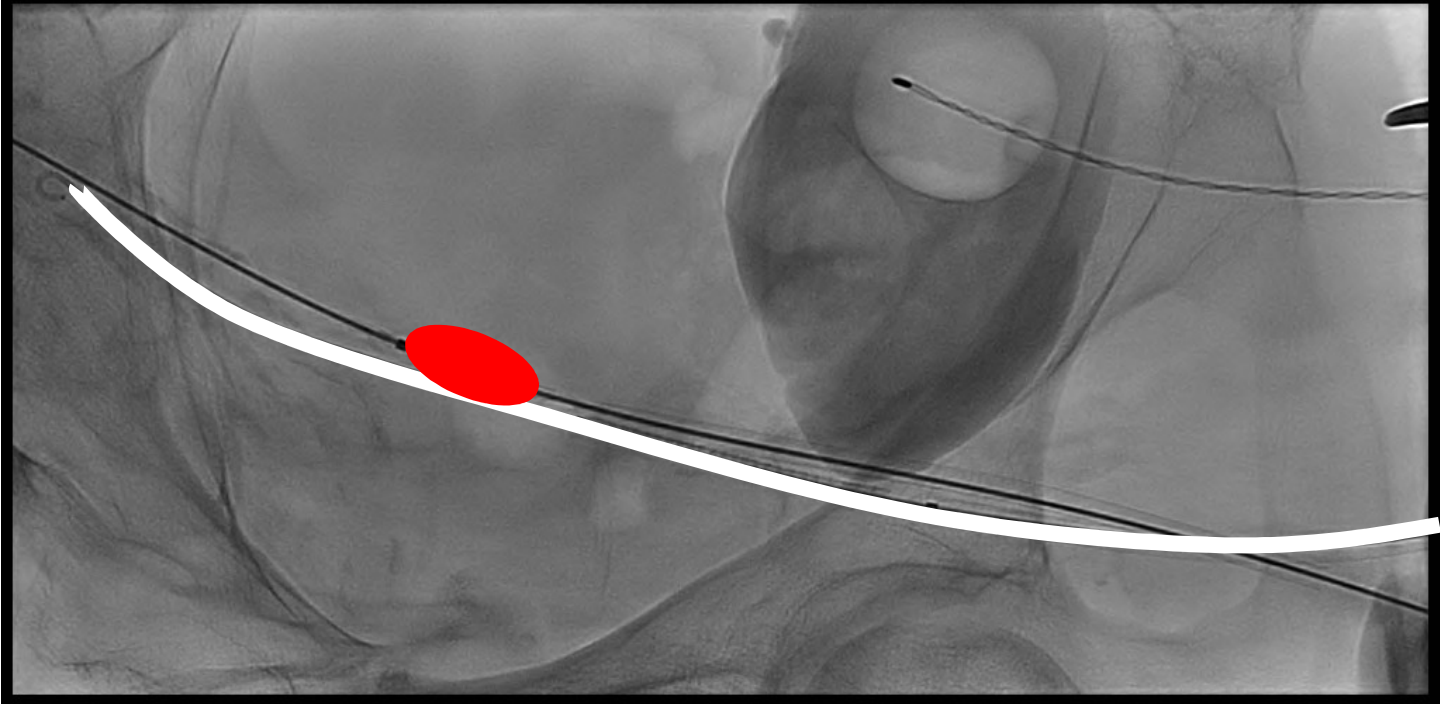


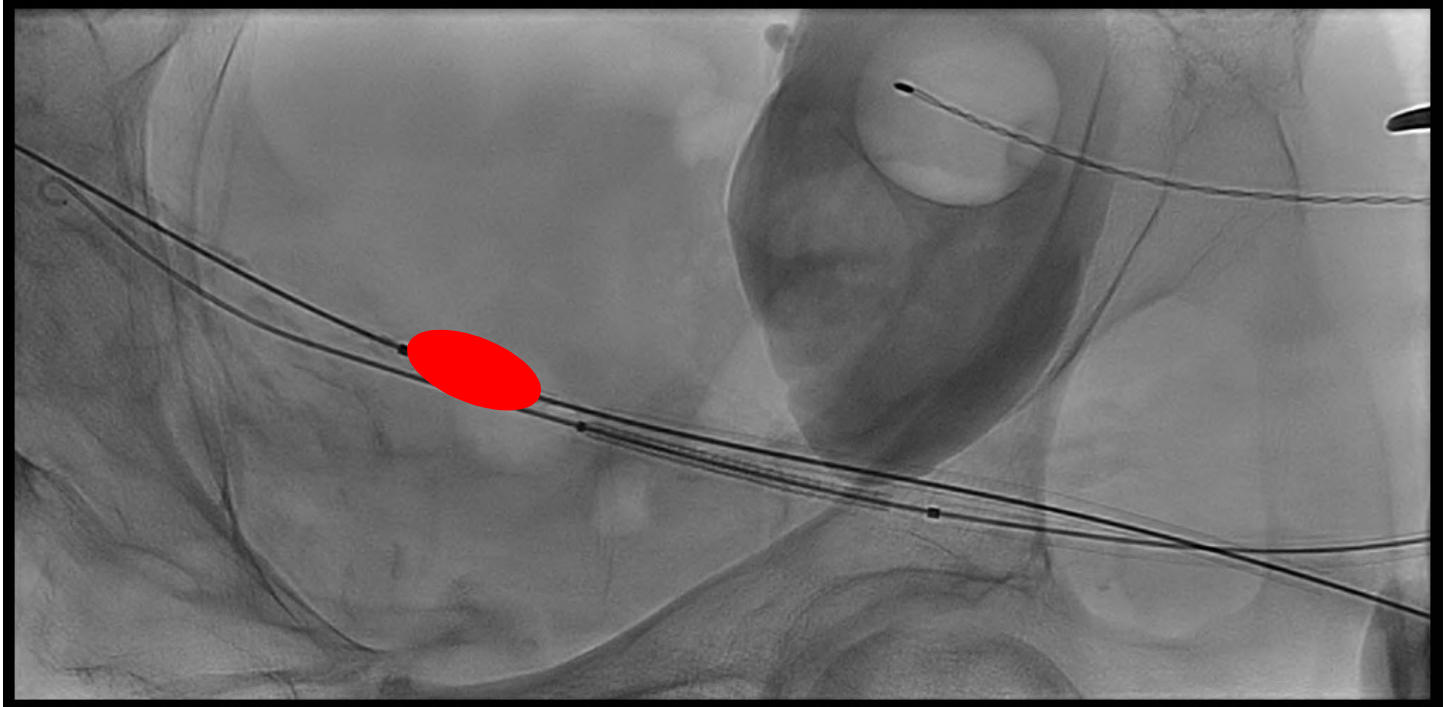
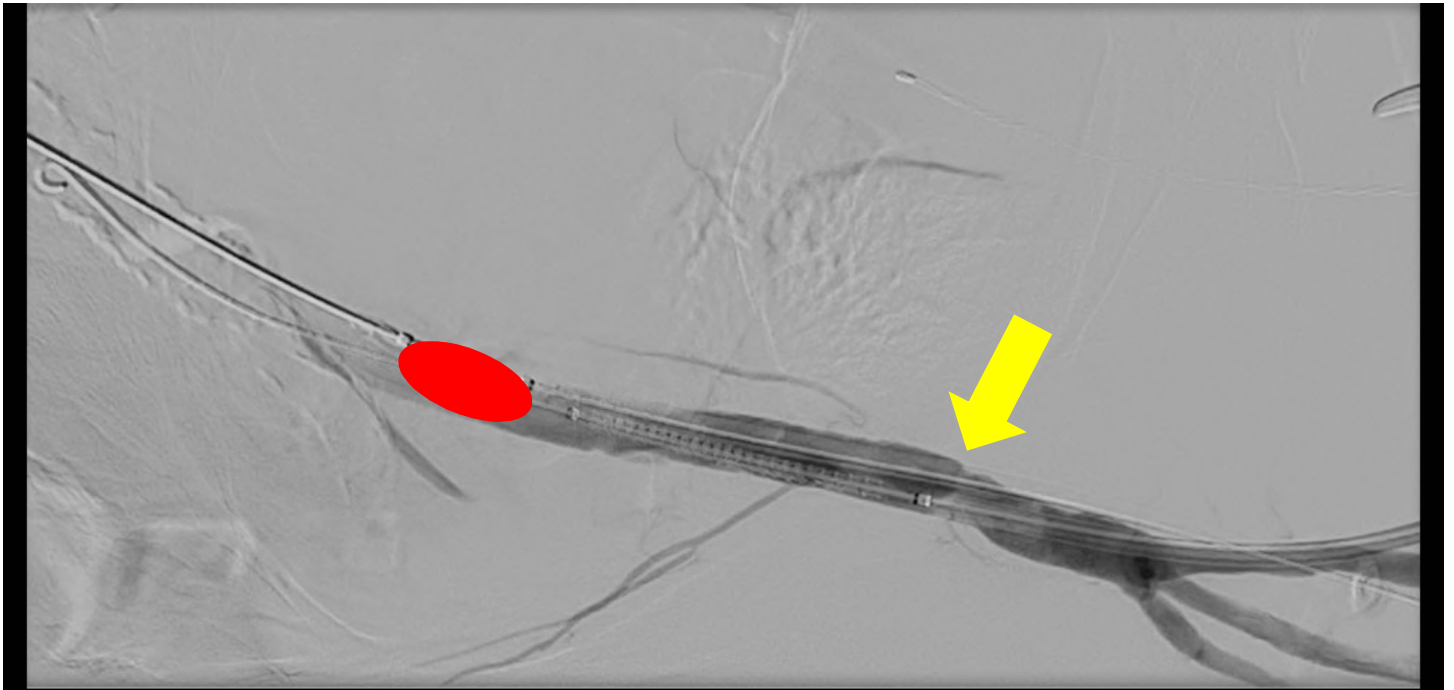
After Thrombin injection/compression

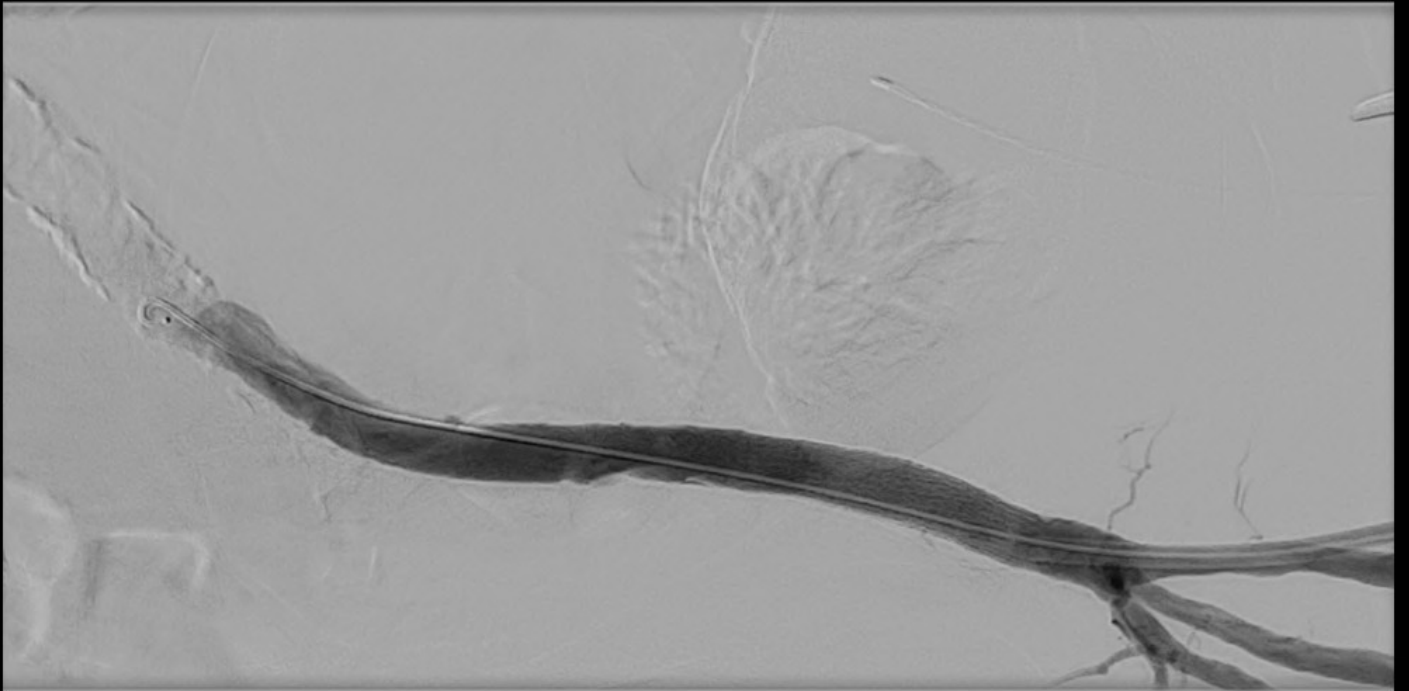


# Value of high femoral access

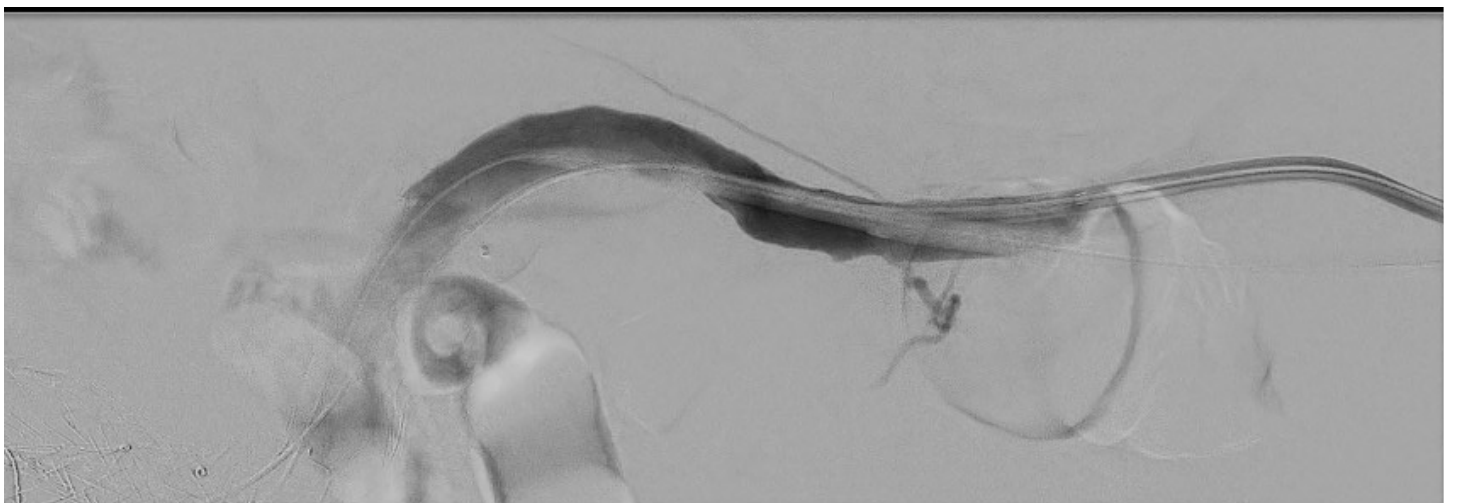
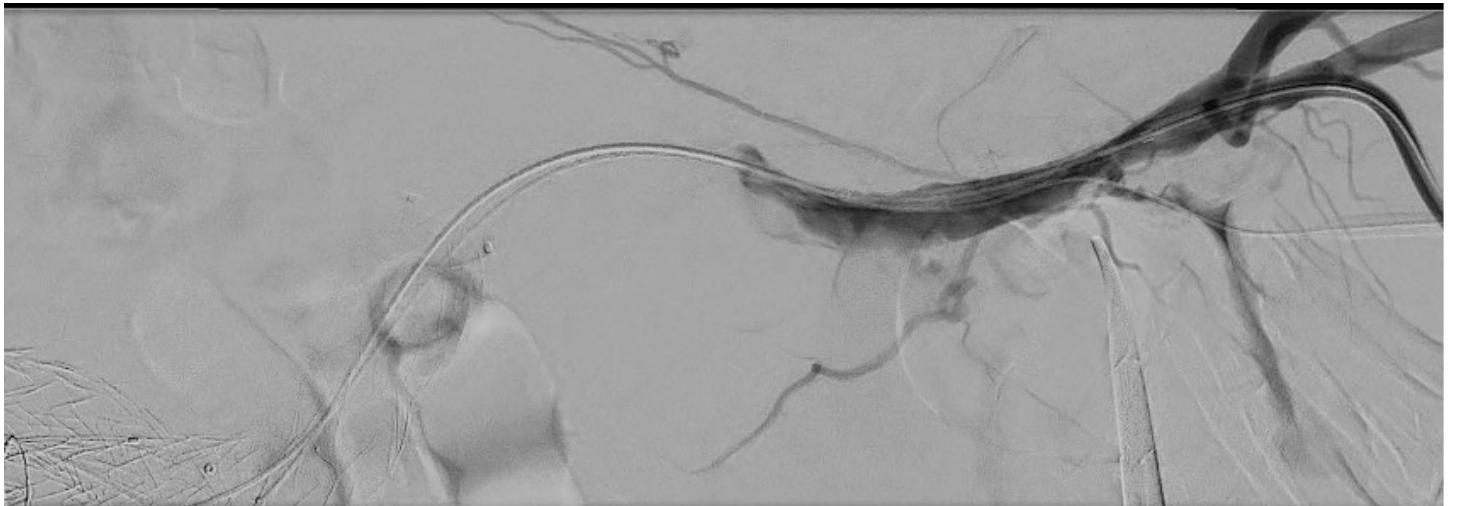


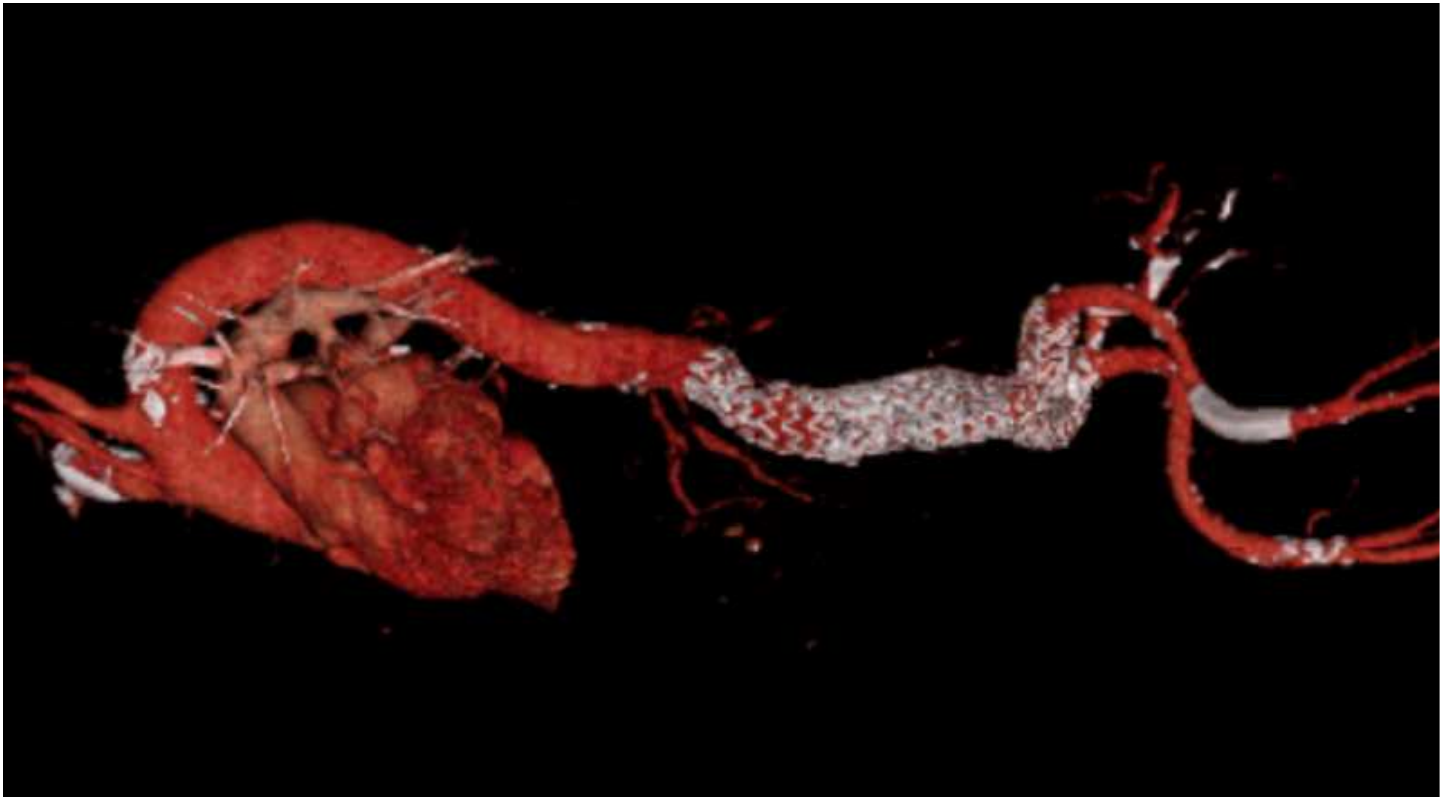












# Outpatient Endovascular Aortic Aneurysm Repair

## Experience in 100 Consecutive Patients

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 Frank Junior Veith, MD,\*¶ Jacques Bleyne, MD,|| and Dominique Bettex, MD‡

**Objectives:** To present the safety, feasibility, costs, and quality of outpatient endovascular aneurysm repair (EVAR).

**Background:** Our experience in more than 1000 patients with technically uncomplicated EVAR procedures, the only indication was for access vessel complications (bleeding or secondary procedures). These complications could always be treated during the first 3 hours after EVAR.

**Methods:** Two-center retrospective analysis of prospective data on 100 consecutive elective outpatient EVAR cases (Outpt EVAR). Inclusion criteria for Outpt EVAR were as follows: asymptomatic aortic aneurysm, age > 60 years, consent, travel time to the hospital if readmission was < 60 minutes, adult observer assistance for the first 24 hours after EVAR, and no complicated EVAR procedure. EVAR was mostly performed under general anesthesia and with percutaneous access. Patients were discharged after 6 hours of observation and checked the next morning in the outpatient clinic.

**Results:** Of 100 patients, 93 (93%) were men and 7 (7%) were women. Mean age was 72 years (range, 60–88 years). Four patients had access vessel complications and were excluded from further analysis. Four patients had minor complications that required additional procedures and hospitalization. The 30-day readmission rate was 4% (4), aortic rupture (2) or false aneurysm (2). There was no 30-day mortality. All 96 patients who completed Outpt EVAR, 93 (97%) completed EVAR again and would recommend it to others. Costs were significantly lower in 21 Outpt EVAR patients than in 21 inpatient EVAR.

**Conclusions:** Elective Outpt EVAR can be performed safely, provided certain criteria are fulfilled and specific precautions are taken. In this series, Outpt EVAR morbidity was minimal, especially delirium common in elderly patients recovering from inpatient vascular surgery and nosocomial infections did not occur. Finally, patient satisfaction was high and costs were less than with standard inpatient EVAR.

**Keywords:** ambulant, day, endovascular aneurysm repair, EVAR, fast-track, outpatient, surgery

(*Ann Surg* 2013;258:754–759)

93% LA  
 88% PEVAR  
 (ProGlide)



96%

duction, endovascular aneurysm repair (EVAR) has been shown to be less invasive and offering significant perioperative mortality advantages over traditional open repair.<sup>1</sup> In our series, 30-day mortality of elective EVAR in low-risk patients was less than 1%.<sup>2</sup> Our 16-year experience with more than 1000 cases indicated that in technically uncomplicated EVAR, the only need for postoperative hospitalization was for access vessel complications (bleeding or occlusion) requiring additional procedures. These latter complications could always be treated during the first 3 hours after EVAR. We also noted that the majority of patients complained after their EVAR procedure of staying in the hospital and expressed the wish to be discharged as soon as possible. In light of these facts a retrospective analysis of our experience with 100 consecutive Outpt EVAR cases was performed. Bleyne<sup>3</sup> about the quality of EVAR performance. “The EVAR procedure,” we decided to report our experience with 100 consecutive Outpt EVAR cases.

### METHODS

In our experience with 100 consecutive Outpt EVAR cases from September 1999 to April 2002, 23 patients were treated at the Ghent University Hospital, Antwerp (Deurne), Belgium and 77 patients were treated at the University Hospital Zurich, Switzerland. All clinical and cost data have been collected prospectively and reviewed and analyzed retrospectively in December 2012. Clinical data, laboratory test, and costs were analyzed exclusively in the more recent experience in Zurich. The study has been approved by the respective ethical committees.

### Patient's Selection

The decision to perform open repair, EVAR, or hybrid repair was based on aortic and iliac anatomy, the patient's fitness and/or preference and agreement between an interventional vascular surgeon, anesthesiologist, and radiologist. All EVAR candidates were then screened for the feasibility of their being done solely as an Outpt EVAR.

7 AM



7 PM



# Conclusions

- **PEVAR (ProGlide) possible and safe in most patients (>90%), but selection (CTA) and successful access (US) are key points**
  - Secondary bleeding has not been observed in our experience
    - >200 transfemoral accesses
- **Most sealing issues in PEVAR (ProGlide) can be managed without surgical cut-down**
  - **Proximal femoral access allows relining** to cover femoral tear (loose ProGlide)
  - **Cross-knotting and/or sealing stitch can generally achieve bleeding control**



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