



70TH ESCVS CONGRESS & 7TH IMAD MEETING

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Liège | Théâtre de Liège | Belgium

Endovascular management of splanchnic and renal aneurysms

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Introduction

- **Rare**
- **Pathophysiology**
 - Degenerative
 - Connective tissue disease (concomitant aneurysms to other locations)
 - Post-dissection
 - Pseudoaneurysms
- **High mortality** when ruptured



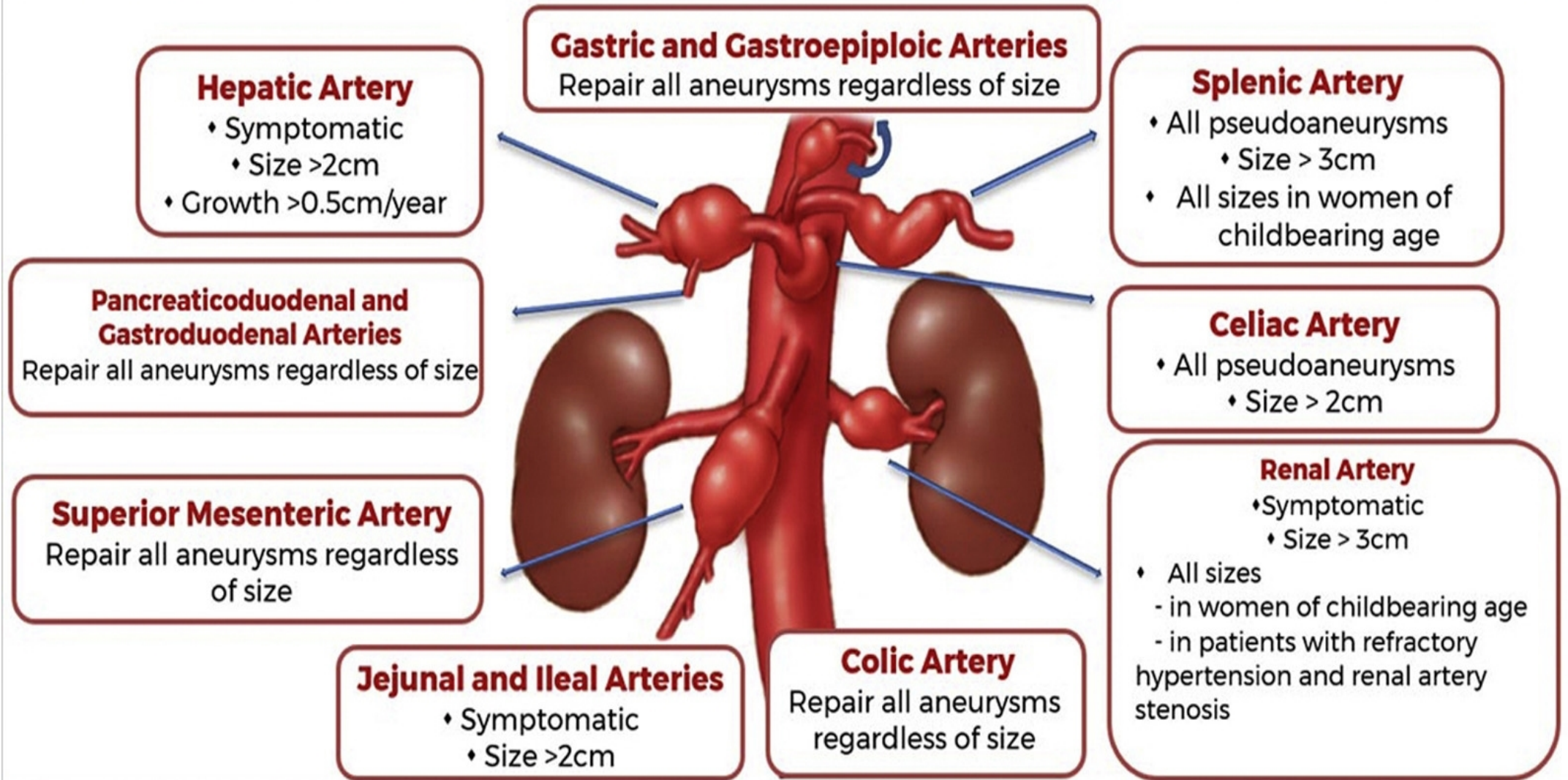
Introduction

Indications to treat:

- **Diameter**
 - SMA aneurysms regardless of diameter
- **All symptomatic or ruptured**
- **All pseudoaneurysms**
- **Special populations:**
 - Pregnant
 - Childbearing women
 - Refractory HTN, non-responding to medical treatment (renal aneurysms)



SVS Clinical Practice Guidelines on the Management of Visceral Aneurysms

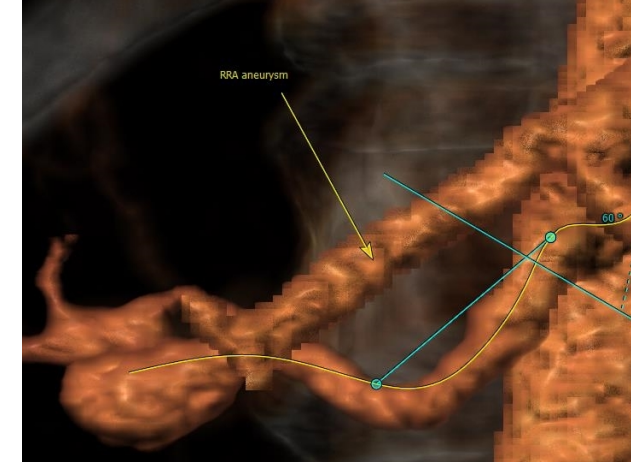




Introduction

Pre-operative imaging

- Computed tomography angiography (CTA) → **modality of choice**
- DUS
- MRA
- DSA → **pre-operative planning**



Treatment

- **Open** repair
 - Bypass (aorto-visceral, reno-splenic)
 - In-situ reconstruction
 - Ex-vivo-autotransplantation → distal aneurysms/ post-dissection
- **Endovascular** repair → **lower morbidity and mortality**
 - Stents } Combination
 - Coils }
 - Liquid embolic agents

Current guidelines recommend endovascular management as the first line approach for renal and visceral aneurysms of any location



Our recent experience – Larissa University Hospital

During last 5 years

6 aneurysms

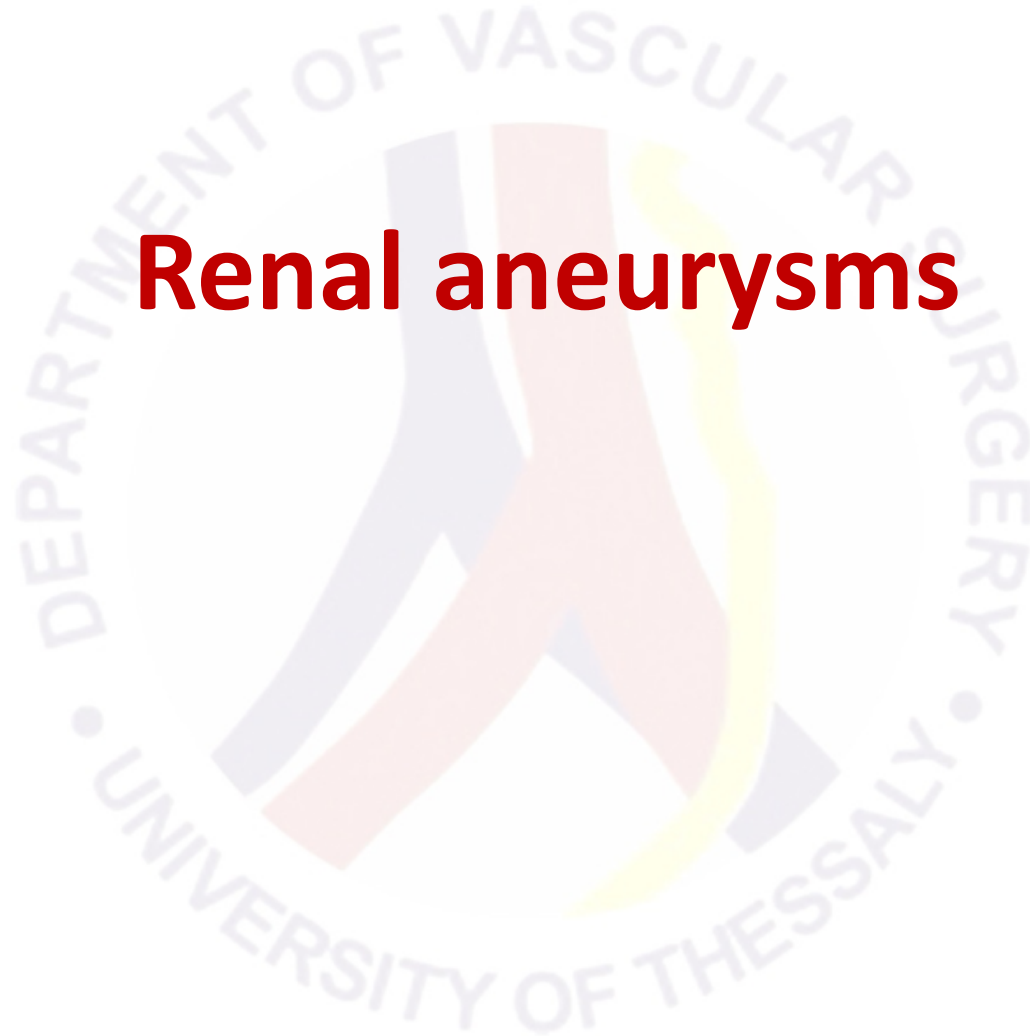
3 renals

3 splachnic (1 SMA, 2 CA)





Renal aneurysms





1st case

Medical history

- ✓ Female
- ✓ 60 years-old

Comorbidities

- Hypertension
- Dyslipidemia
- GFR 83ml/min/1.73m²
(Creat 0.63mg/dL)

Imaging

Acute lumbar pain at right side



CT using IVC

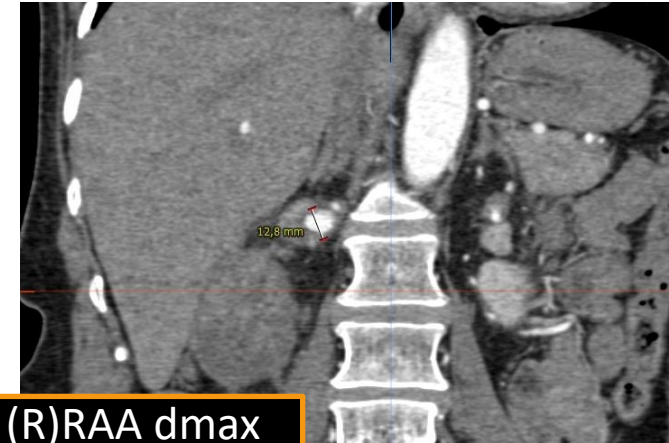
DTPA <30% function of the
right kidney-multiple infarcts



Pre-operative CTA

Findings:

- ✓ Bilateral renal artery aneurysms
- ✓ Rt renal infarcts
- ✓ Triangle-shaped infarcts at (Rt) kidney



(R)RAA dmax
12.8mm



(L)RAA dmax
10.8mm



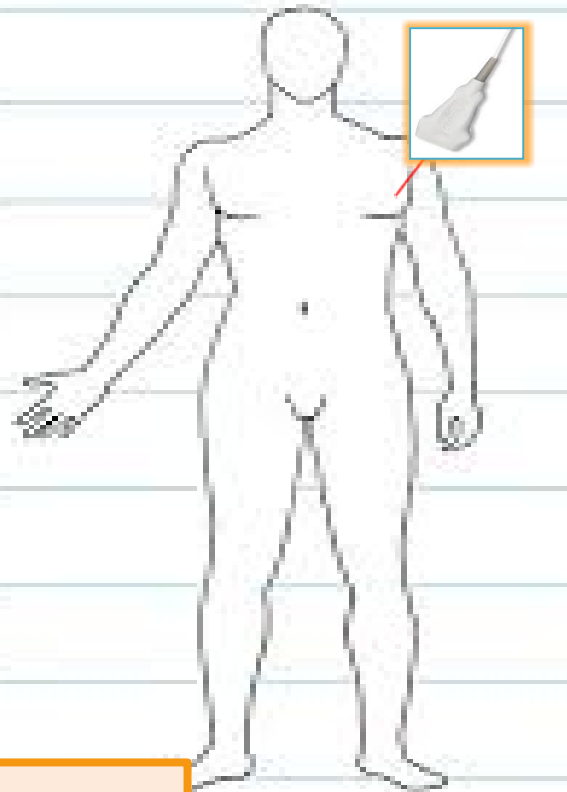
Pre-operative DSA





Pre-operative planning

Coil embolization of the RRA aneurysm & stenting of the LRA aneurysm



Percutaneous puncture of L brachial artery US assisted

Procedure accomplished using L brachial artery as access

- Local anesthesia
- 5000iu UFH

Material



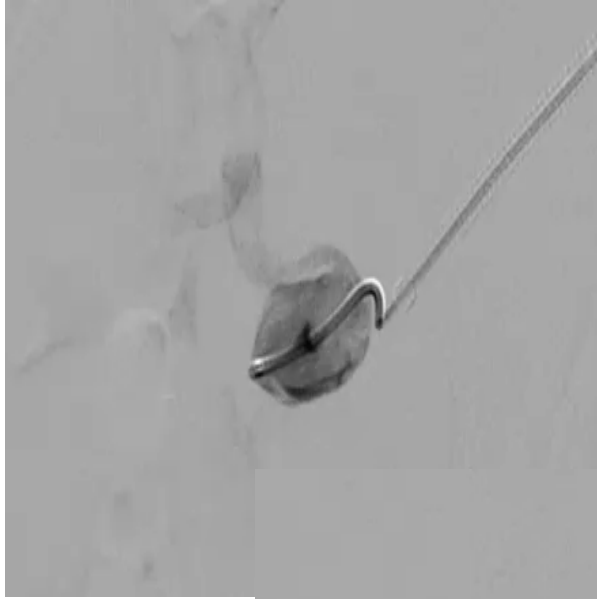
Interlock, Boston
6*20mm



Be-Graft, Bx
5*29mm



Endovascular repair

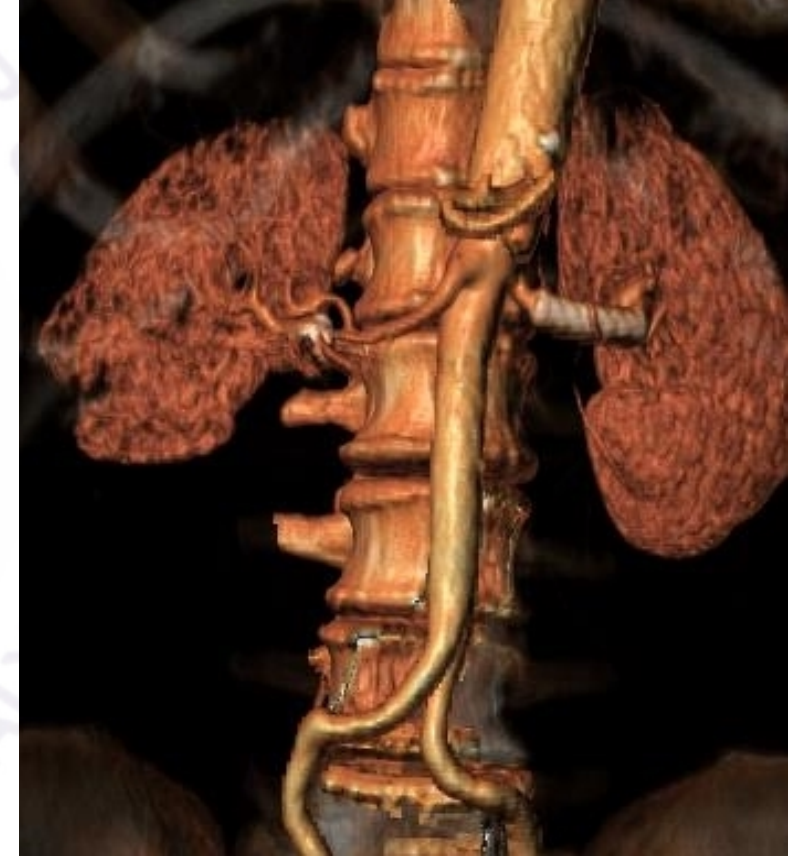




1st month CTA



18th month CTA





2nd case

Medical history

- ✓ Male
- ✓ 68 years old

Comorbidities

- Hypertension
- Dyslipidemia
- CAD (MI, CABG, 2019)
- GFR 64ml/min/1.73m²

Imaging

During standard
cardiologic evaluation with
DUS



(R) RAA 2cm



CTA

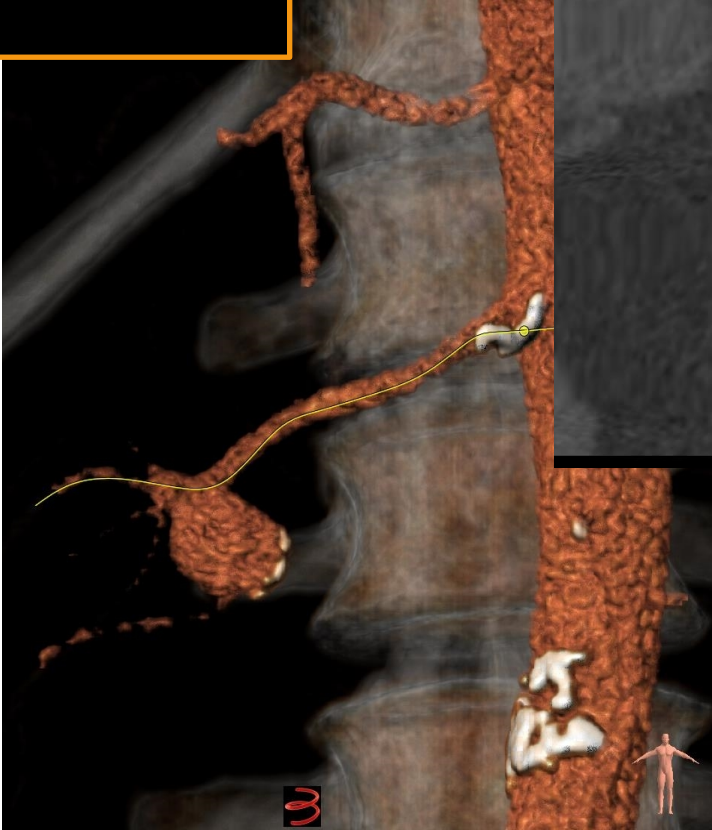


Distal (R) RAA

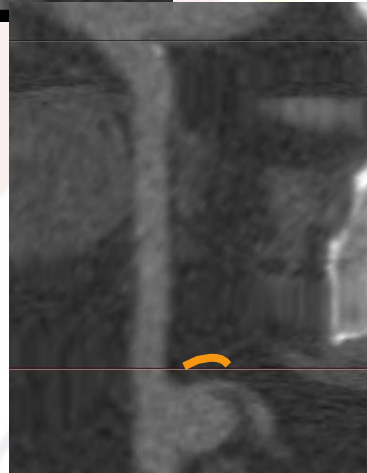
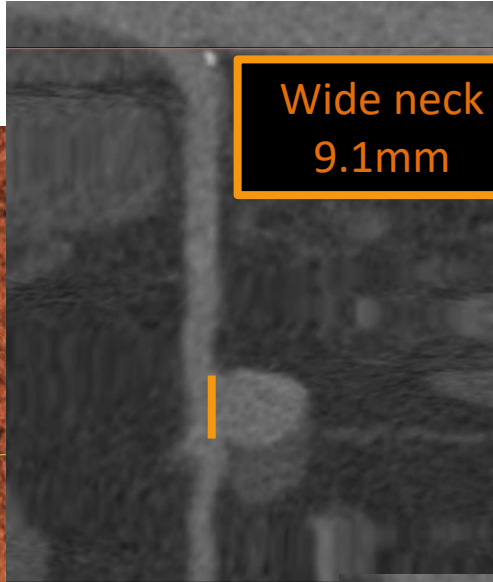


Pre-operative CTA & DSA

Dmax 19.8mm



Wide neck
9.1mm



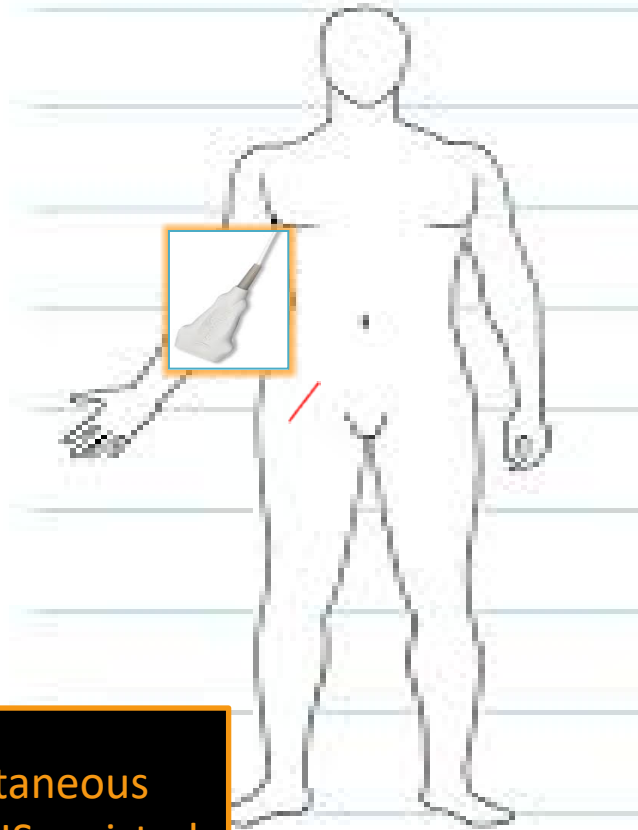
Branch 2.5mm originating from the RA





Endovascular management

Coil embolization & stenting of the R renal artery aneurysm



Percutaneous
access, US assisted
from the RCFA

Material



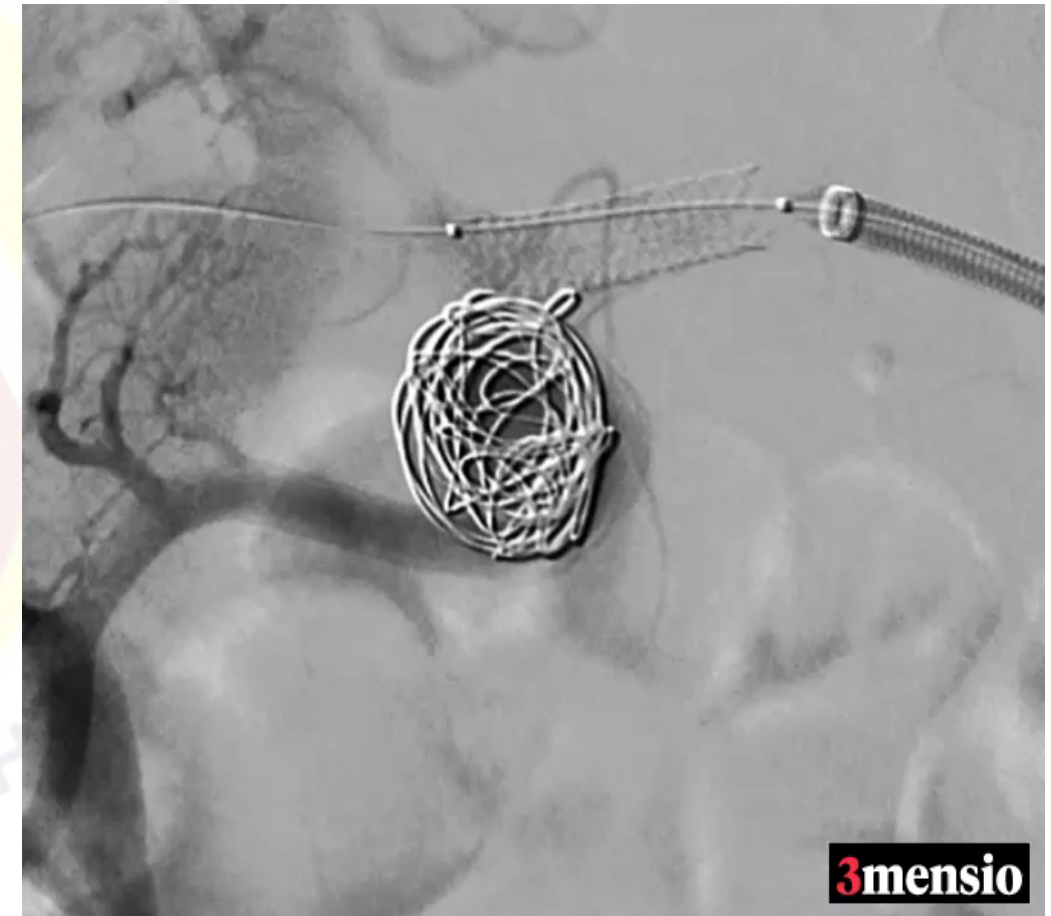
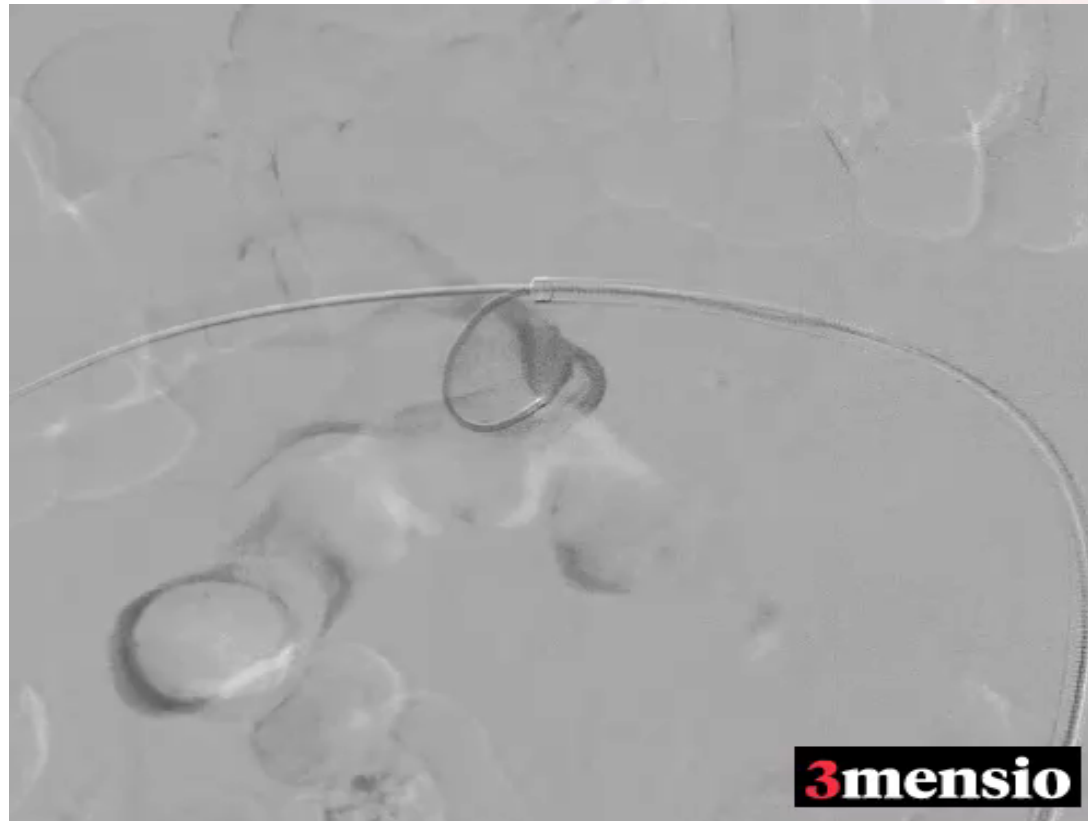
Be-Graft, Bx
4.5*22mm



Interlock, Boston Medical
10*20mm & 22*60mm



Endovascular repair





1st year CTA





Visceral aneurysms





1st case

Medical history

- ✓ Male
- ✓ 53 years-old

Comorbidities

- Hypertension
- Dyslipidemia

Imaging

30 mm SMAA, accidentally found on US



CTA



Pre-operative CTA

Findings:

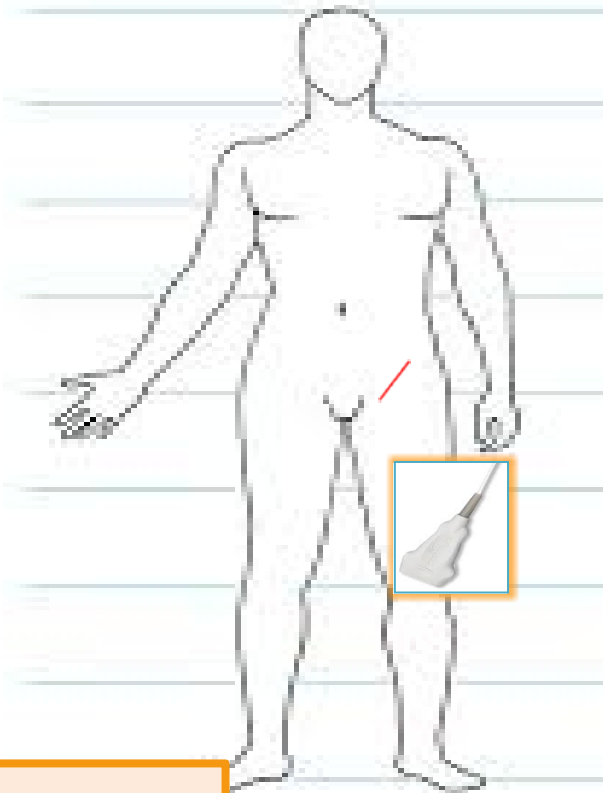
✓ SMAA 31mm





Pre-operative planning

Coil embolization of the SMA aneurysm



Percutaneous
puncture of L CFA
artery US assisted

Material

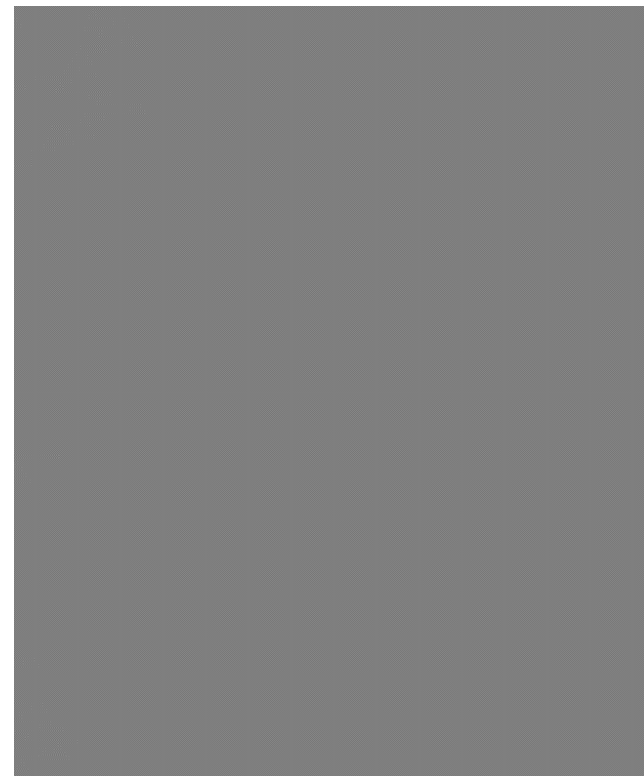
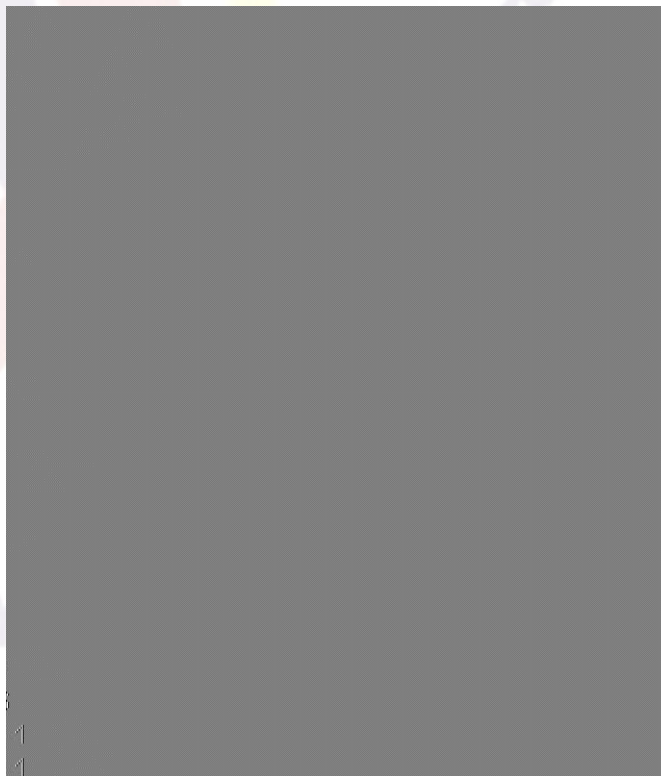
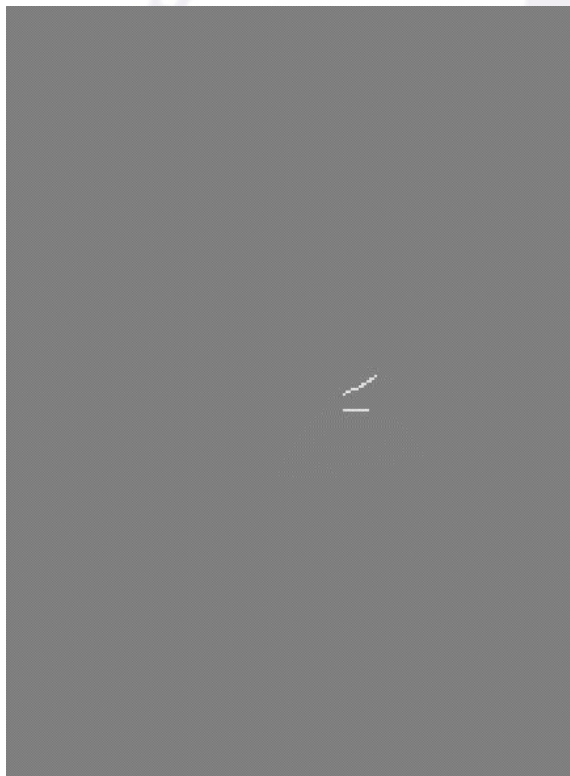
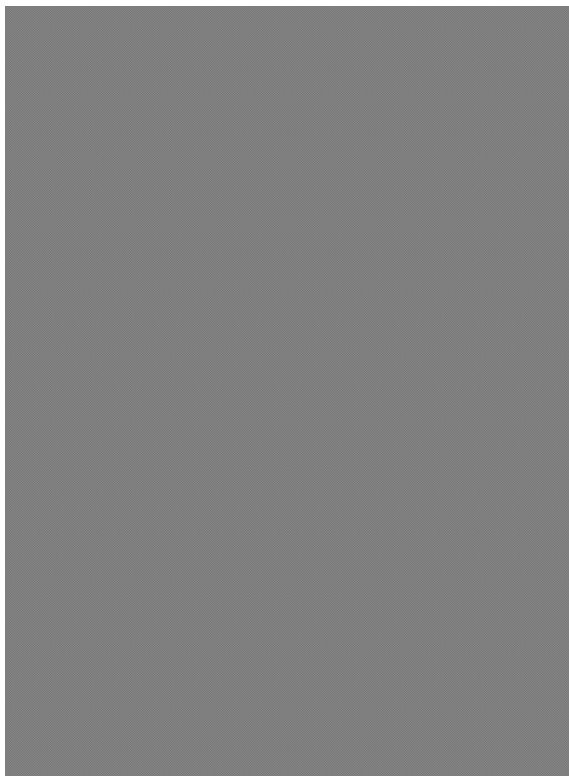
Interlock, Boston
20*40mm (x3)



- Local anesthesia
- 5000iu UFH



Endovascular repair





1st year CTA





2nd case

Medical history

- ✓ Male
- ✓ 71 years-old

Comorbidities

- Hypertension
- AF (Rivaroxaban)
- Dyslipidemia

Imaging

23 mm CAA,
accidentally found on CT



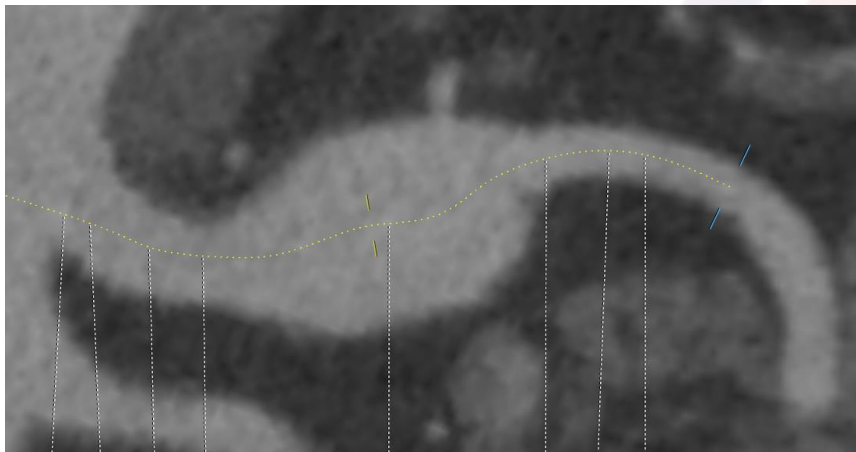
CTA



Pre-operative CTA

Findings:

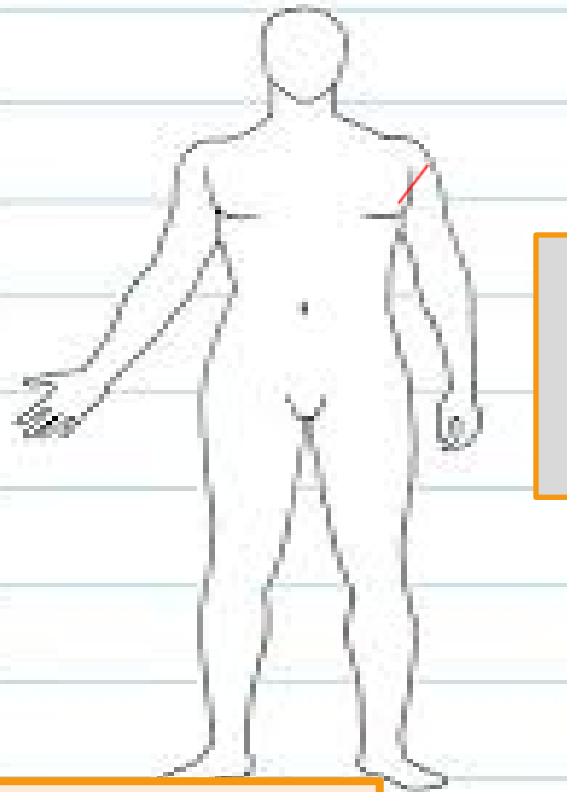
- ✓ CAA 23mm at bifurcation





Pre-operative planning

Coil embolization & stenting of the CA aneurysm



Cut down of the Lt axillary artery

Material

E-Luminex, Bard
8*60mm for the
hepatic

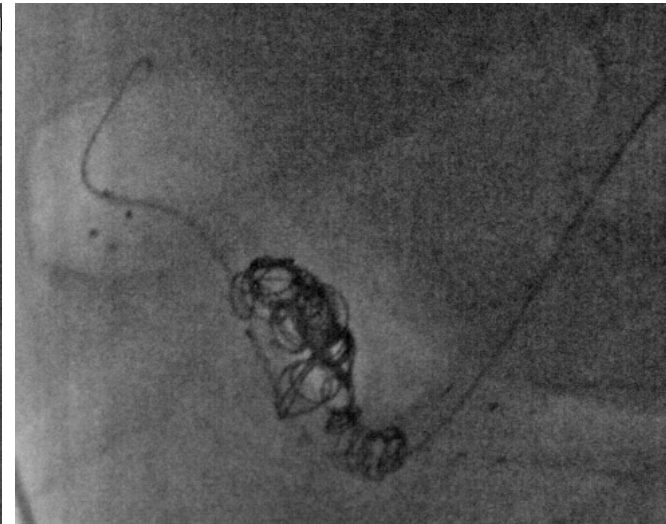
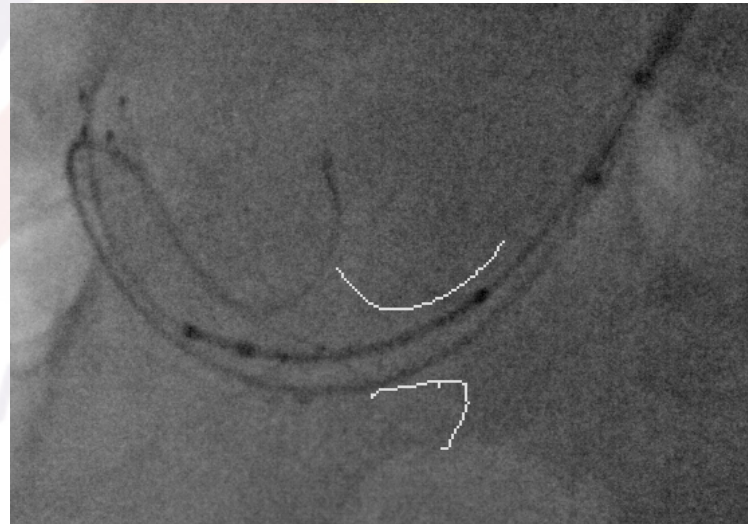
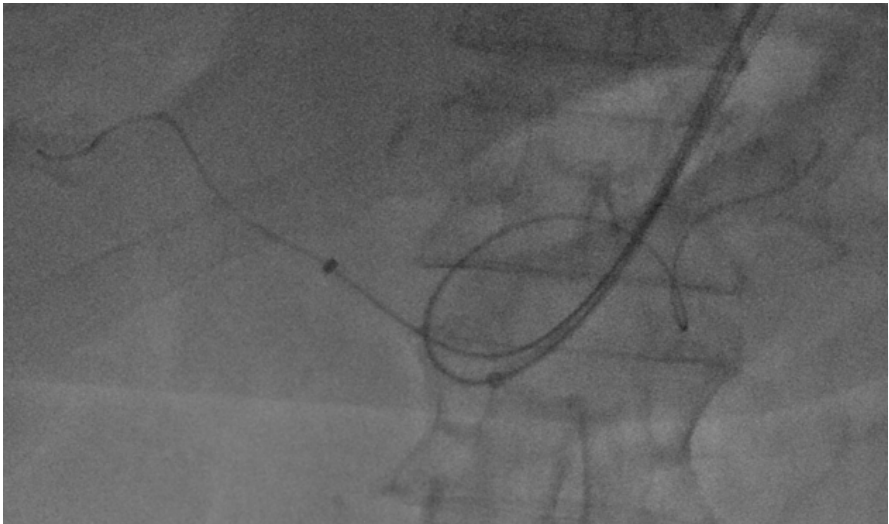
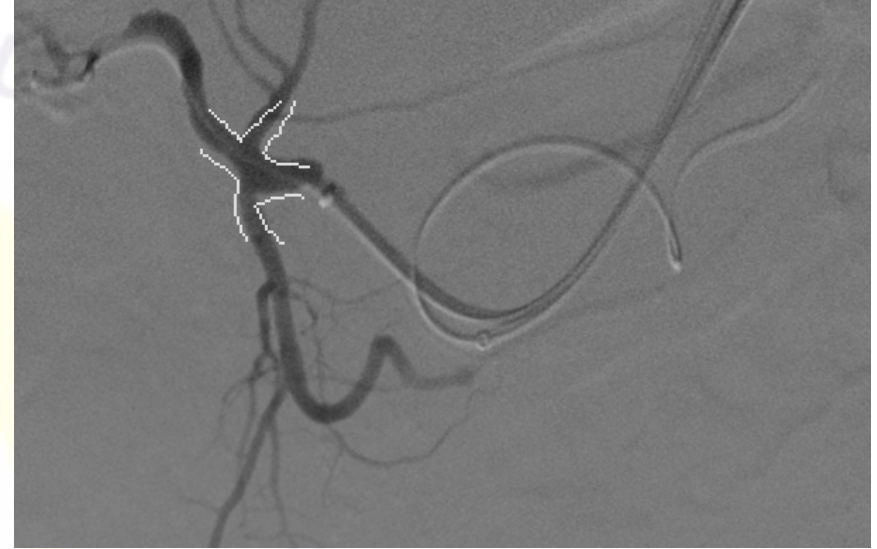
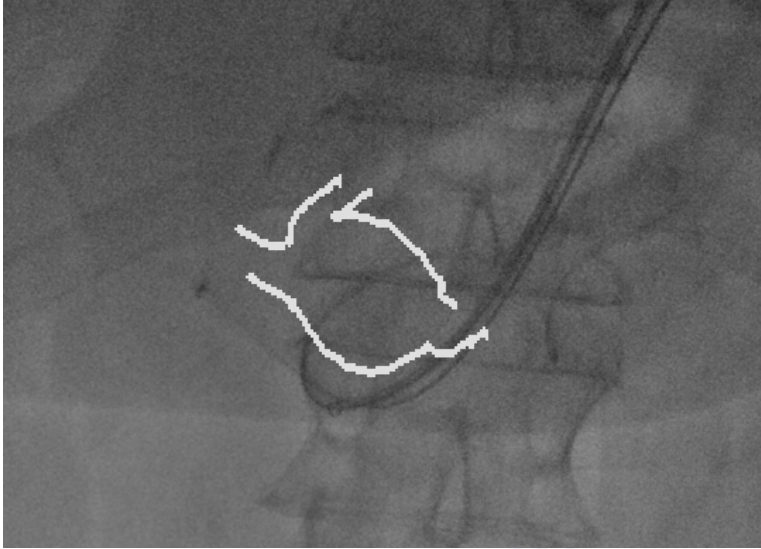
E-Luminex, Bard
14*40mm for the CA

Interlock, Boston
6*20 , 8*20, 10*20

- General anesthesia
- 5000iu UFH

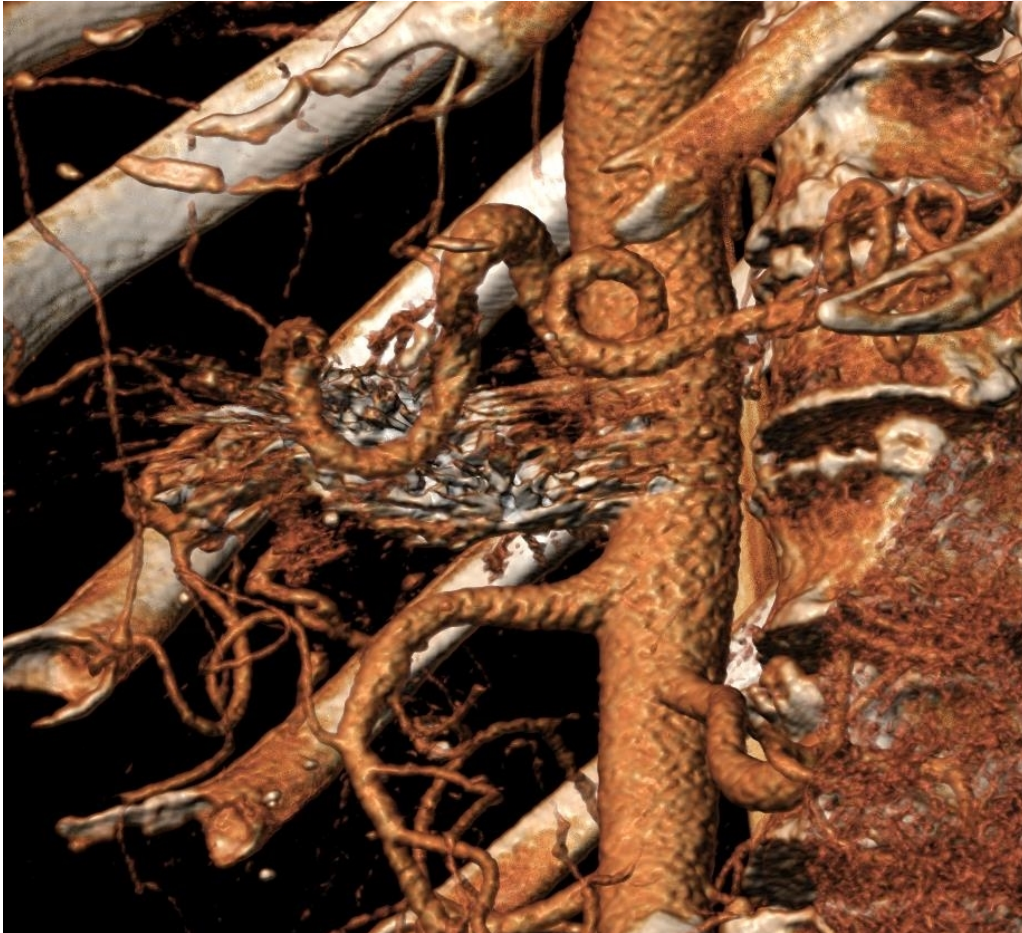


Endovascular repair





1st year CTA





Discussion

- **Endovascular management** represent the treatment of choice in most cases
 - ***Safe and effective with low morbidity and re-intervention rate***
- **Open repair** in specific conditions and experienced centers
- **CTA** mandatory for adequate follow-up
 - Artifacts
- **Follow-up** is of high importance due to risk of:
 - Recanalization
 - Sac reperfusion
 - Rupture



Conclusion

- Endovascular repair seems to be the first line treatment
- High technical success
- Very low morbidity and mortality
- DSA may be needed for pre-operative planning
- Combination of endovascular materials
- Need for follow-up



Thank you for your attention!!

