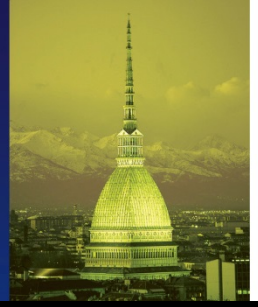
TURIN, October 25th-27th 2018 Starhotels Majestic

GIORNATE CARDIOLOGICHE TORINESI 30



UNIVERSITÁ DEGLI STUDI DI TORINO

AZIENDA OSPEDALIERO - UNIVERSITARIA Città della Salute e della Scienza di Torino

Indications and methodologies for the early treatment of acute aortic type B dissection

Dr. Michelangelo Ferri

SC Chirurgia Vascolare ed Endovascolare
A.O. Ordine Mauriziano - Torino
(Direttore: Dr. Andrea Gaggiano)

A. O. ORDINE MAURIZIANO TORINO

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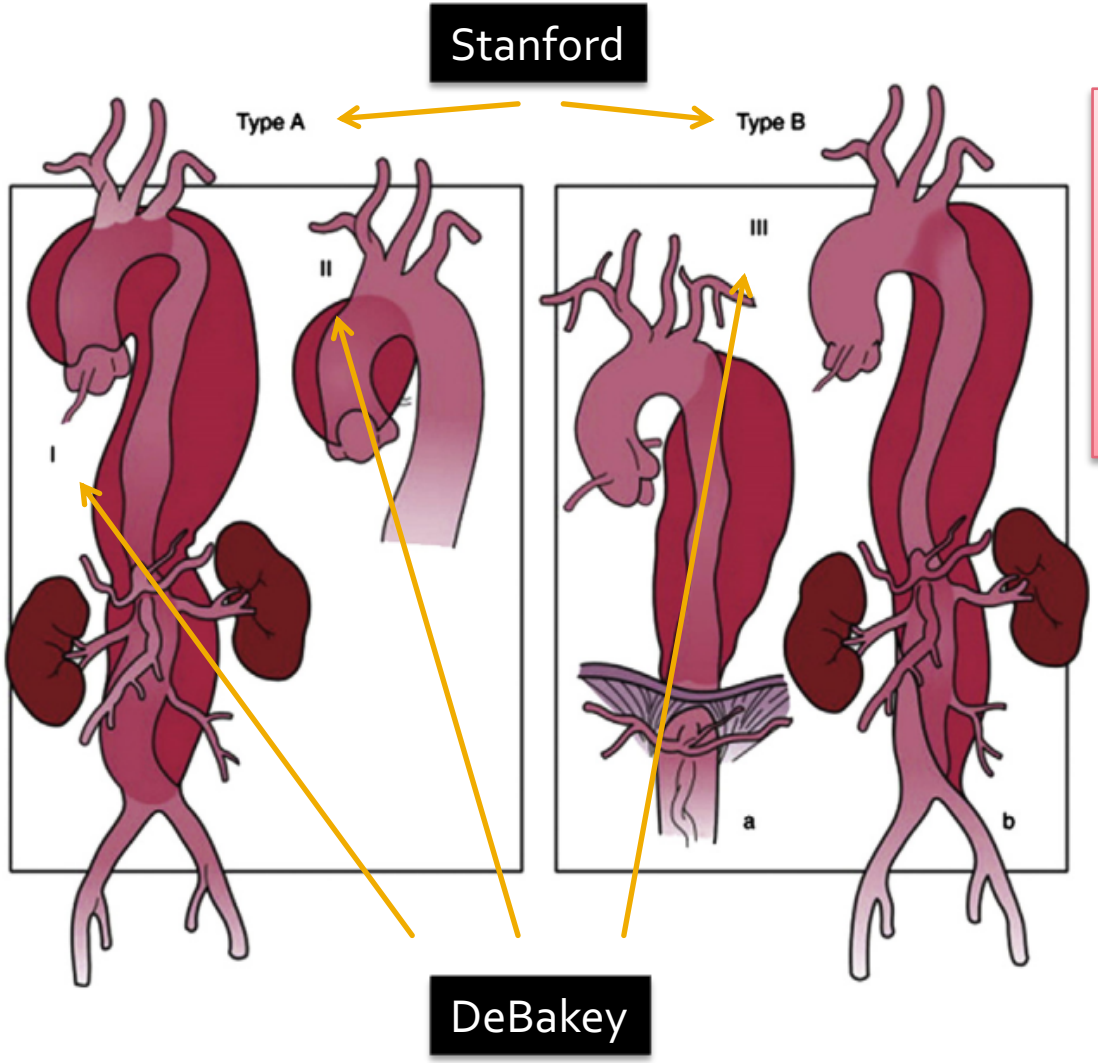
Classification (anatomic)



Stanford's type A aortic dissections involve the ascending aorta or the aortic arch,
whereas type B aortic dissections (TBADs) involve only the descending aorta

Anatomic distribution of aortic dissections has significant prognostic implications…

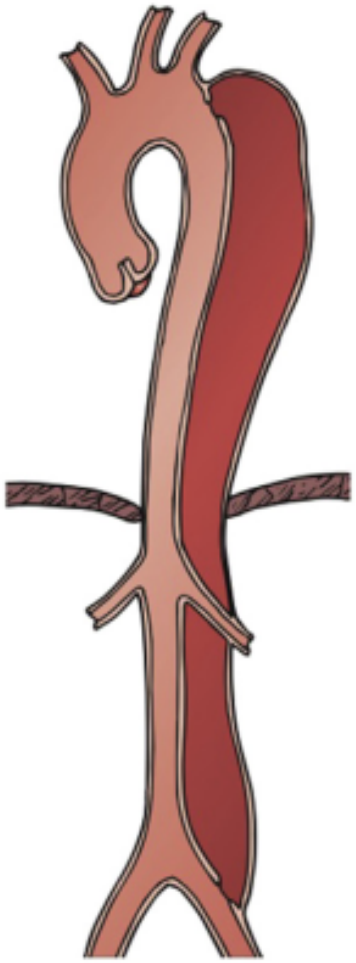
Classification (anatomic)

Patients with type A dissections who underwent surgical repair **had lower mortality (26%) than those treated medically (58%)**…

Vs

… whereas the mortality of those with type B dissections **was lower when treated medically (11%) than with surgery (31%)**

Classification

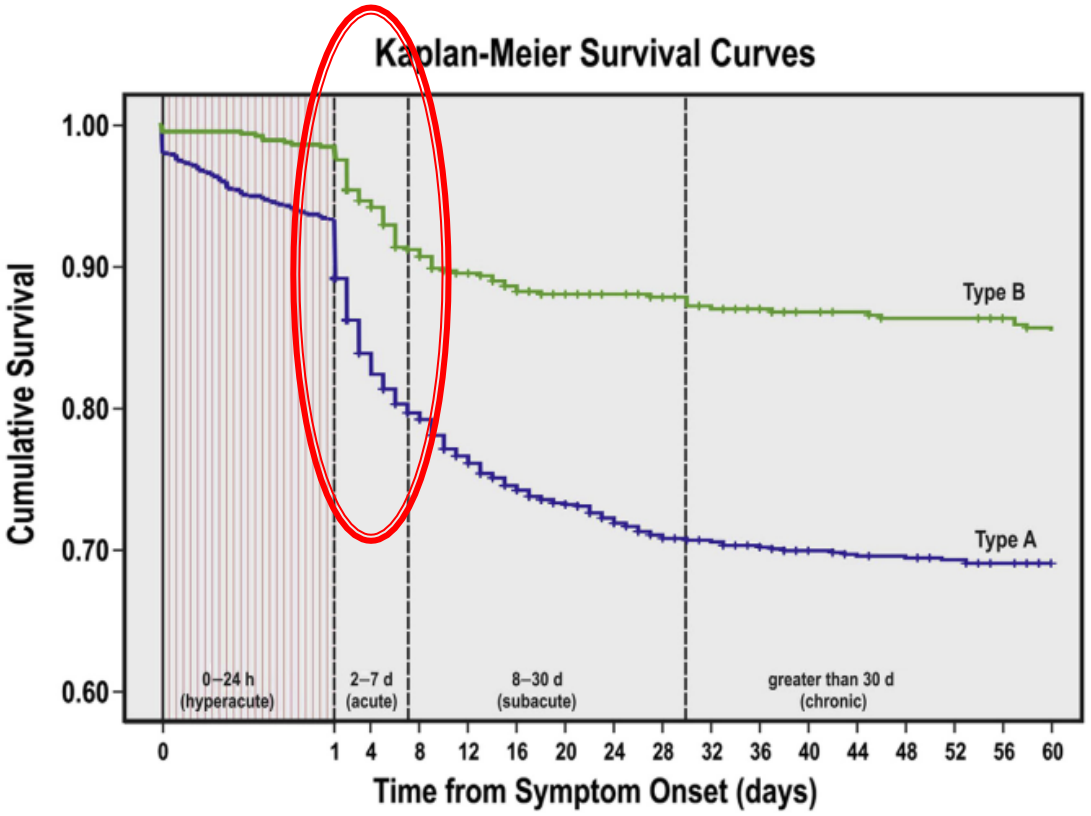


Time of onset

Presence of complications

Classification (Time of onset)

- Hyperacute: 0-24 h
- Acute: 2-7 d
- Subacute: 8-30 d
- Chronic > 30 d



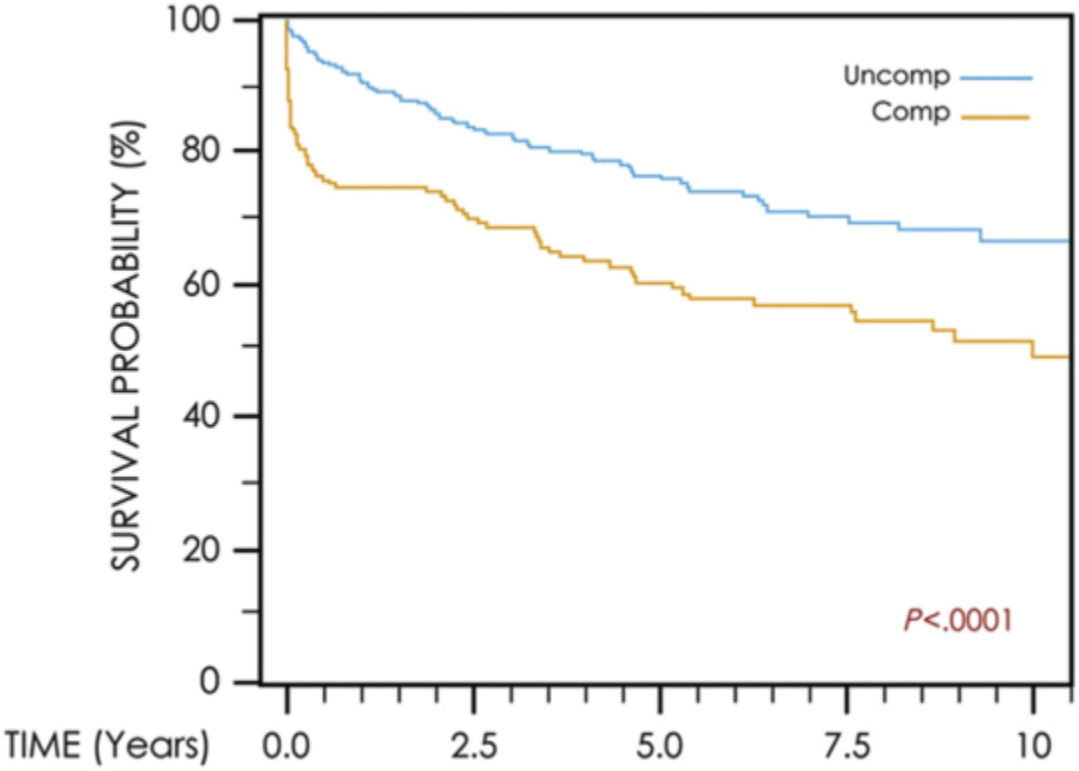
Classification (complicated)

TBADs are described as **complicated** or **uncomplicated** depending on the presence or absence, respectively, of 1 or more direct clinical consequences of the dissection

- malperfusion syndrome (visceral or lower extremity)
- aortic rupture
- hypotension or shock
- neurologic sequelae
- recurrent or refractory pain
- hypertension refractory to medical therapy
- early aortic dilation or propagation of the dissection

Classification (complicated)

Patients with <u>complicated</u> TBAD have worse inhospital survival **(50%)** compared with those with <u>uncomplicated</u> **(90%)**



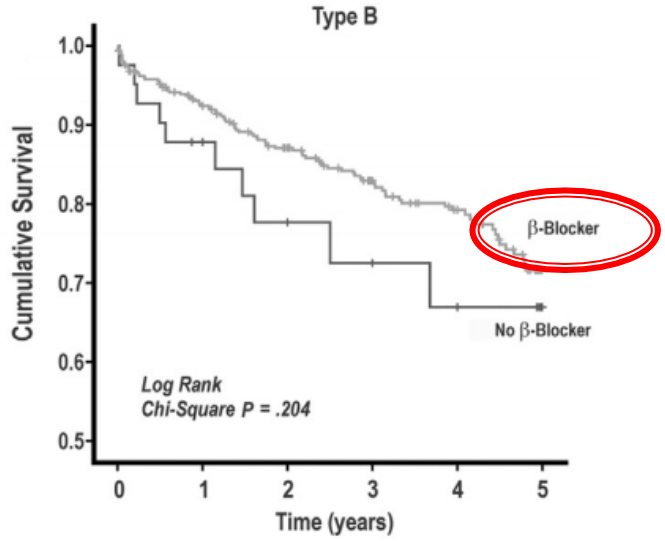
Treatment (medical)

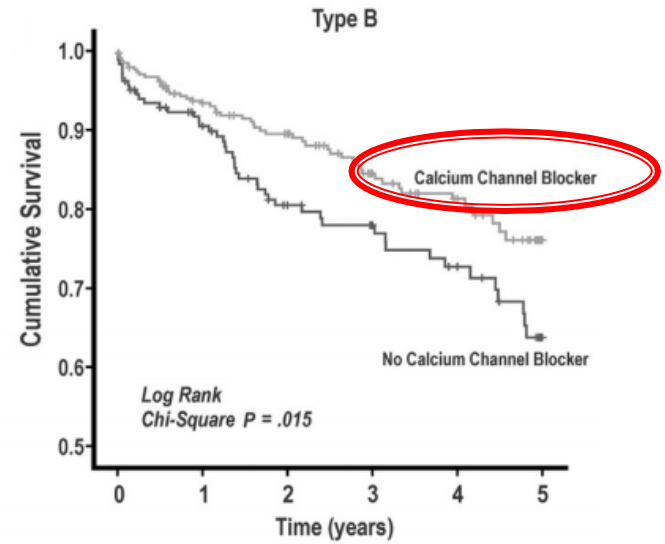
The first-line treatment of acute TBAD is medical therapy

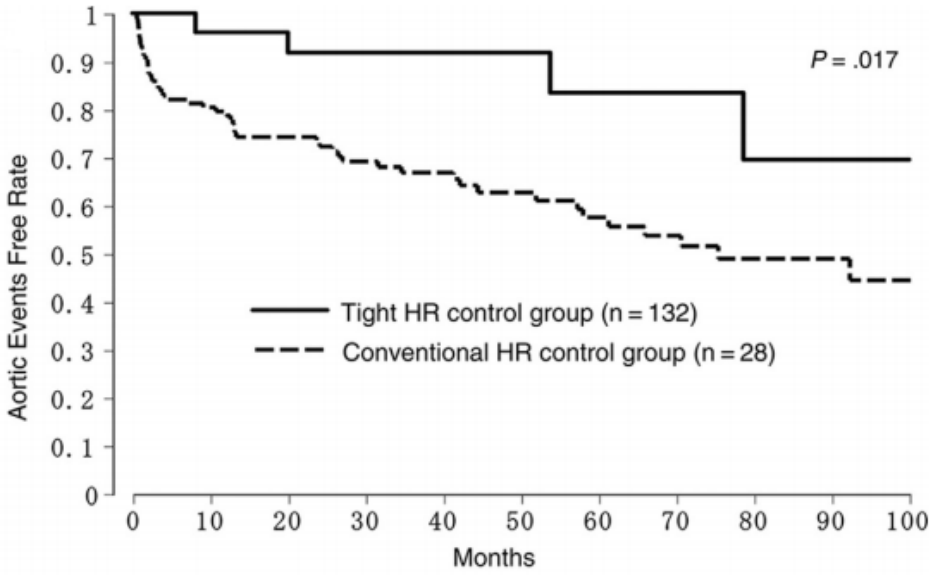
Controlling blood pressure
systolic pressure < 100 mm Hg to 120 mm Hg

Controlling heart rate
less than 60 bpm

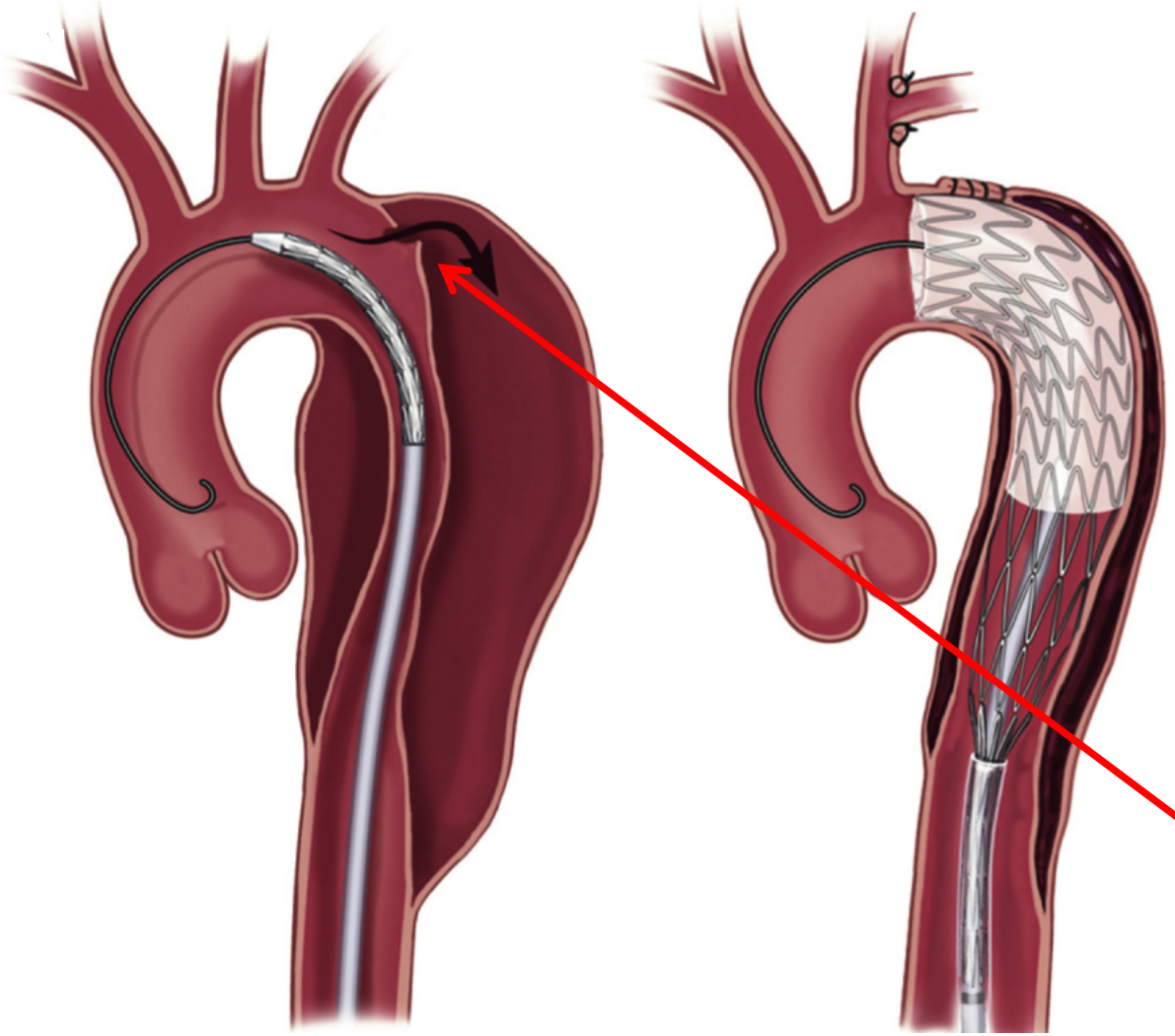
Treatment (medical)







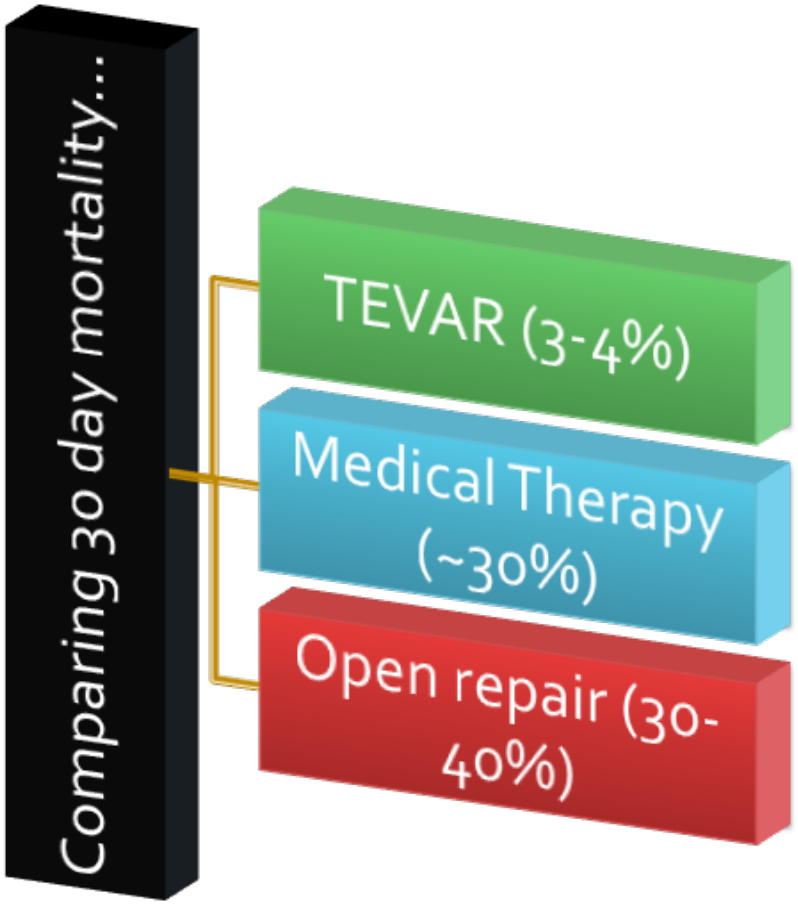
Treatment (TEVAR)



Patients diagnosed with **complicated acute TBAD** should receive **emergent TEVAR** after the initiation of anti-impulse medical therapy

the primary goal of TEVAR is to **cover the primary entry tear** with an endograft, thereby expanding the TL and restoring normal blood flow

Treatment (TEVAR)



Technical considerations

meticulous preprocedure planning is critical to **maximize its therapeutic efficacy** while minimizing the risk of procedure-related complications

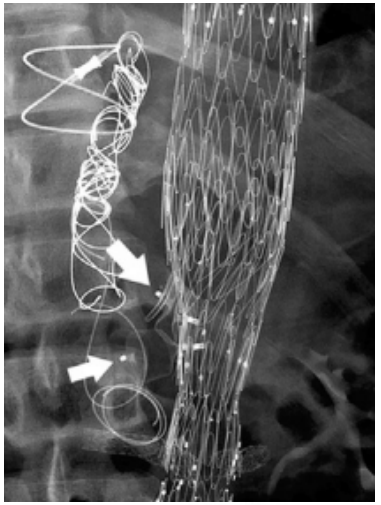
- Spinal cord protection (preoperative or postoperatorive insertion of CSF drainage) is mandatory
- Routine use of **intravascular ultrasound** facilitates wire access and confirmation in the TL, as well as aiding in proper stent sizing and identifying potential immediate intraoperative complications
- Oversize the endograft up to 10% of the aortic diameter proximal to the dissected segment in normal aorta (no post-balloon dilation!)
- Proximal landing zone of at least 2cm (LSCA coverage and revascularization if needed)

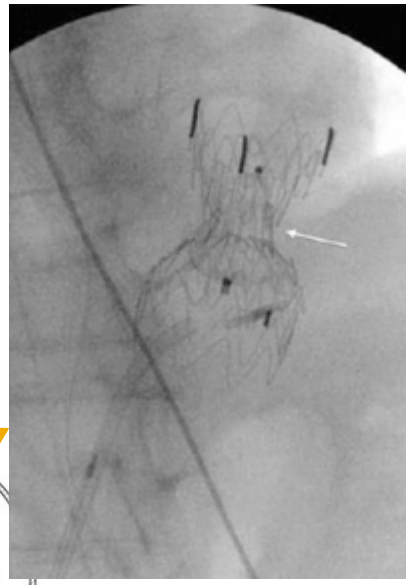
Aortic rupture

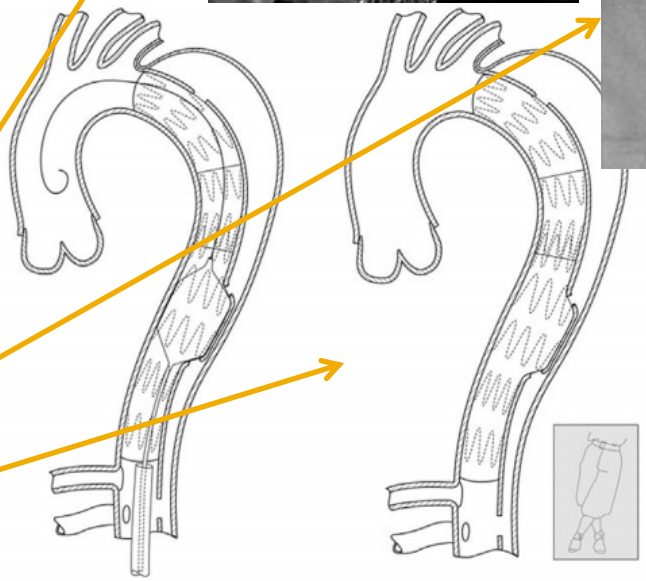
In case of **aortic rupture**
complete false lumen thrombosis
is essential to save patient's life

This may necessitate
extension
of the TEVAR down to the celiac
artery together with
one of several adjunctive
procedures aimed at
occluding the FL

Amplatzer vascular plug
Candy plug technique
Knickerbocker technique



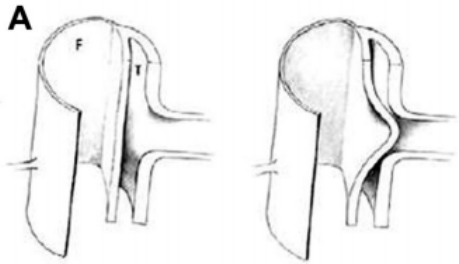


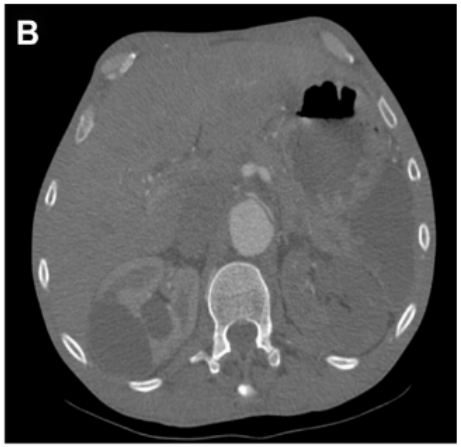


Malperfusion

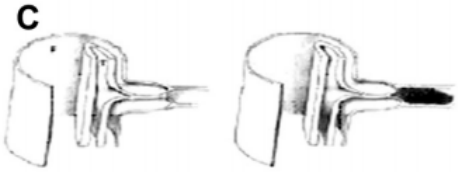
In case of malperfusion unresolved by TEVAR alone selective branch vessel stenting may be necessary

Dynamic
Usually resolve with TL expansion





Static
Usually require stenting

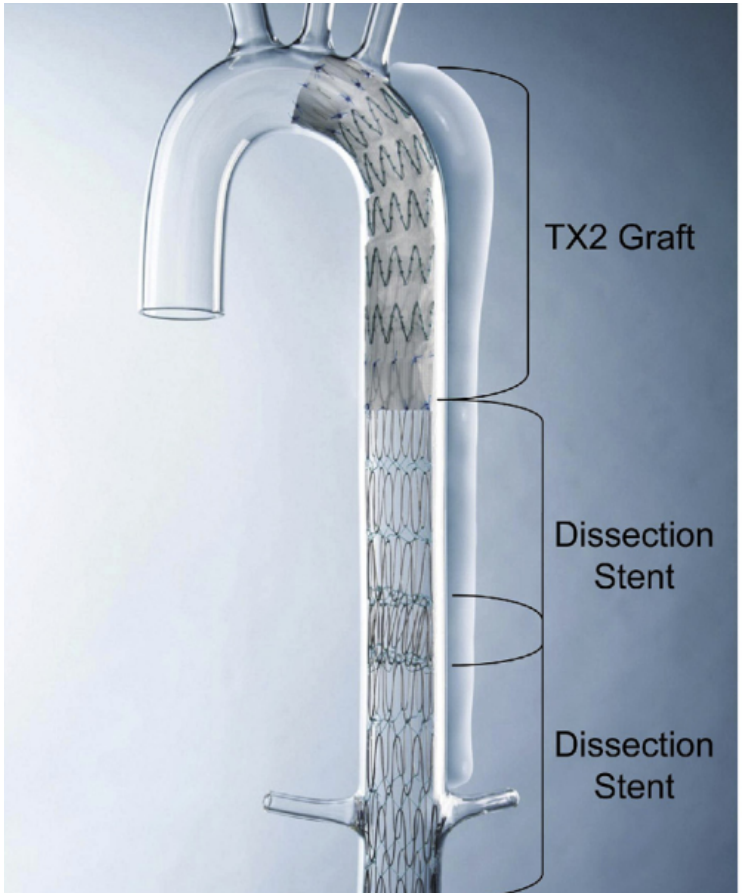


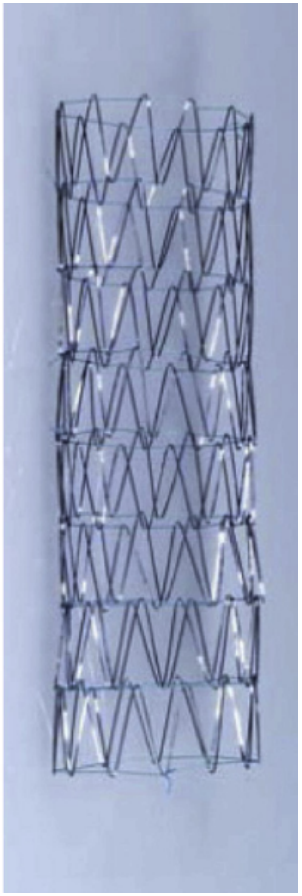
PETTICOAT Technique

(Provisional ExTension To Induce COmplete ATtachment)

Covered stent graft proximally and uncovered stent distally

Results at 2 years **demonstrated expansion of the thoracic TL and regression of the FL with freedom from aorta-related events of ~90%**

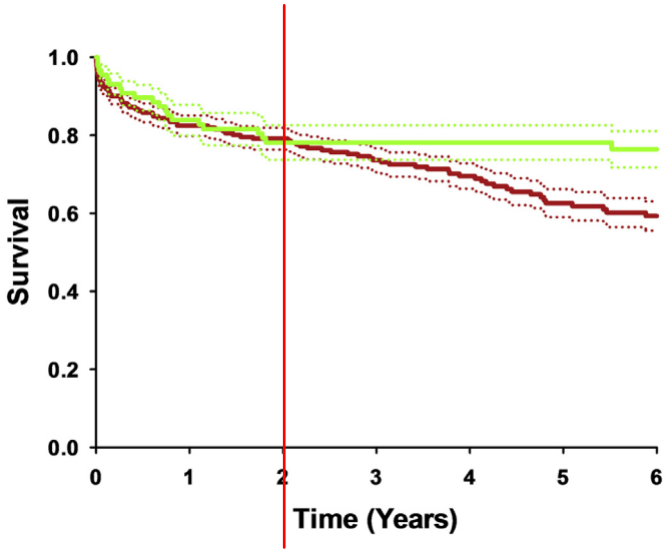


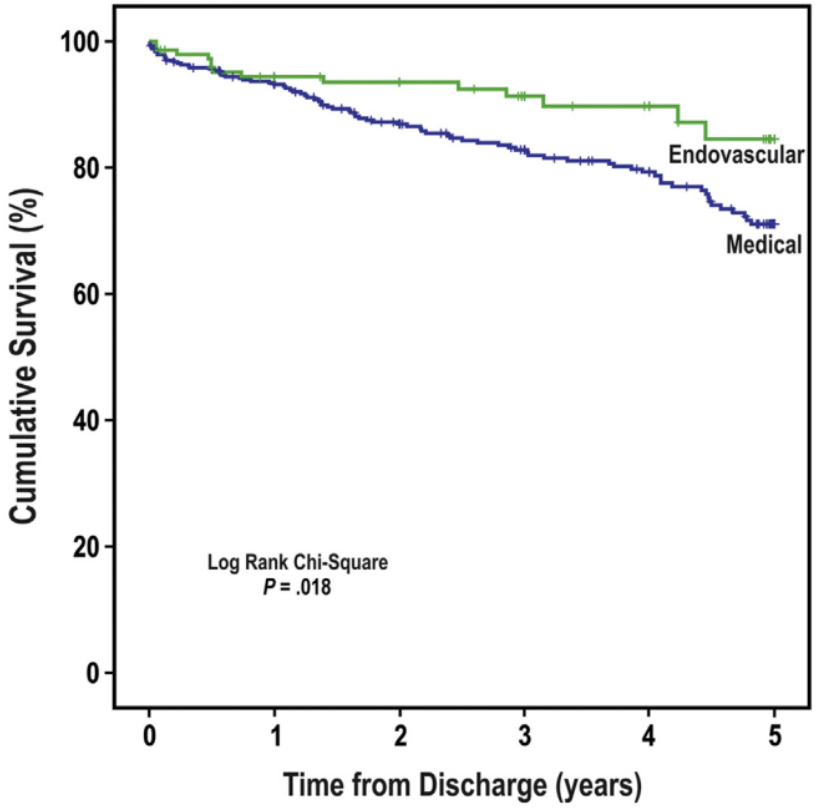


TEVAR for uncomplicated TBAD

Some authors suggest elective TEVAR even for **uncomplicated TBAD**

Several studies reported better outcomes in term of **overall survival** and **aortic related death** especially after the 2 years mark

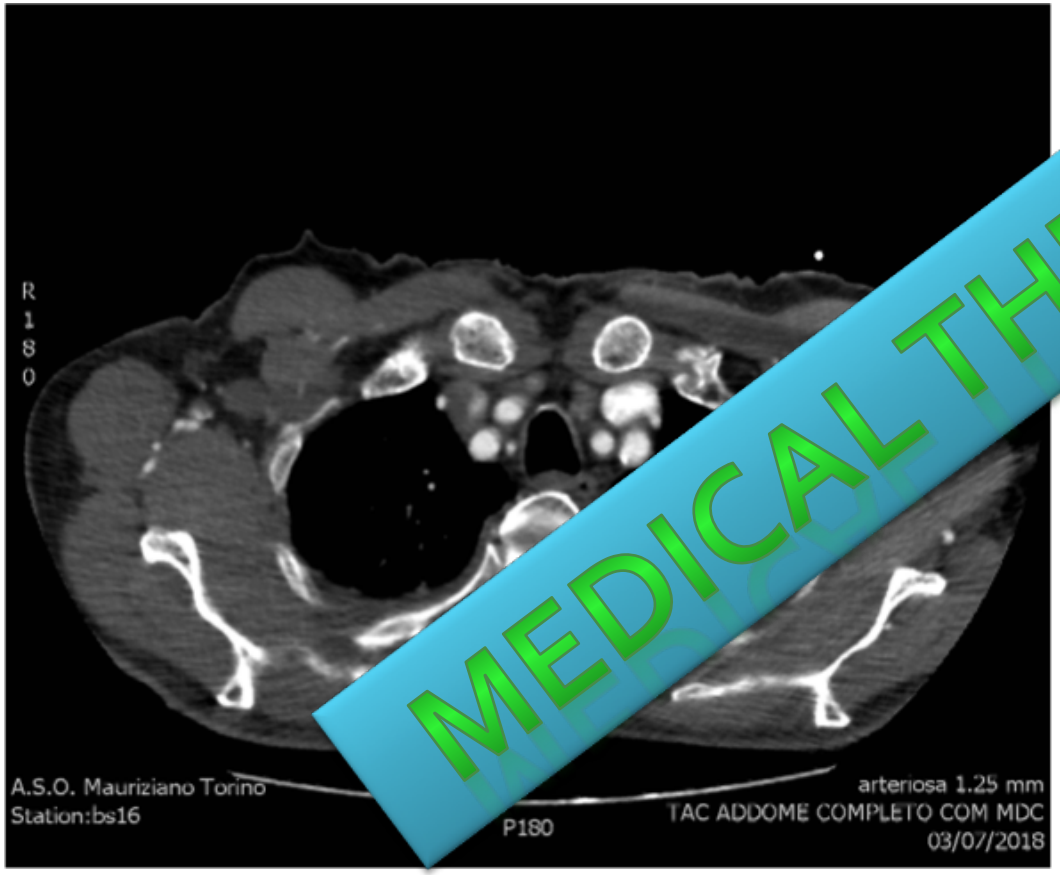




High risk features

- Aortic diameter greater than 40mm
- Patent false lumen with partial thrombosis
- False lumen diameter greater than or equal to 22mm
- Single proximal entry tear, greater than or equal to 10mm
- Elliptical true lumen with saccular false lumen
- Rapid aortic enlargement greater than 4mm per year
- Aneurysm diameter greater than 55mm
- Recurrent or refractory pain and refractory hypertension

Clinical case



MEDICAL THERAPY

M years old

ER with acute
hest pain

CT Angiography

TBAD originating from LSA and extended to right common iliac artery with no clinical nor radiological signs of complications

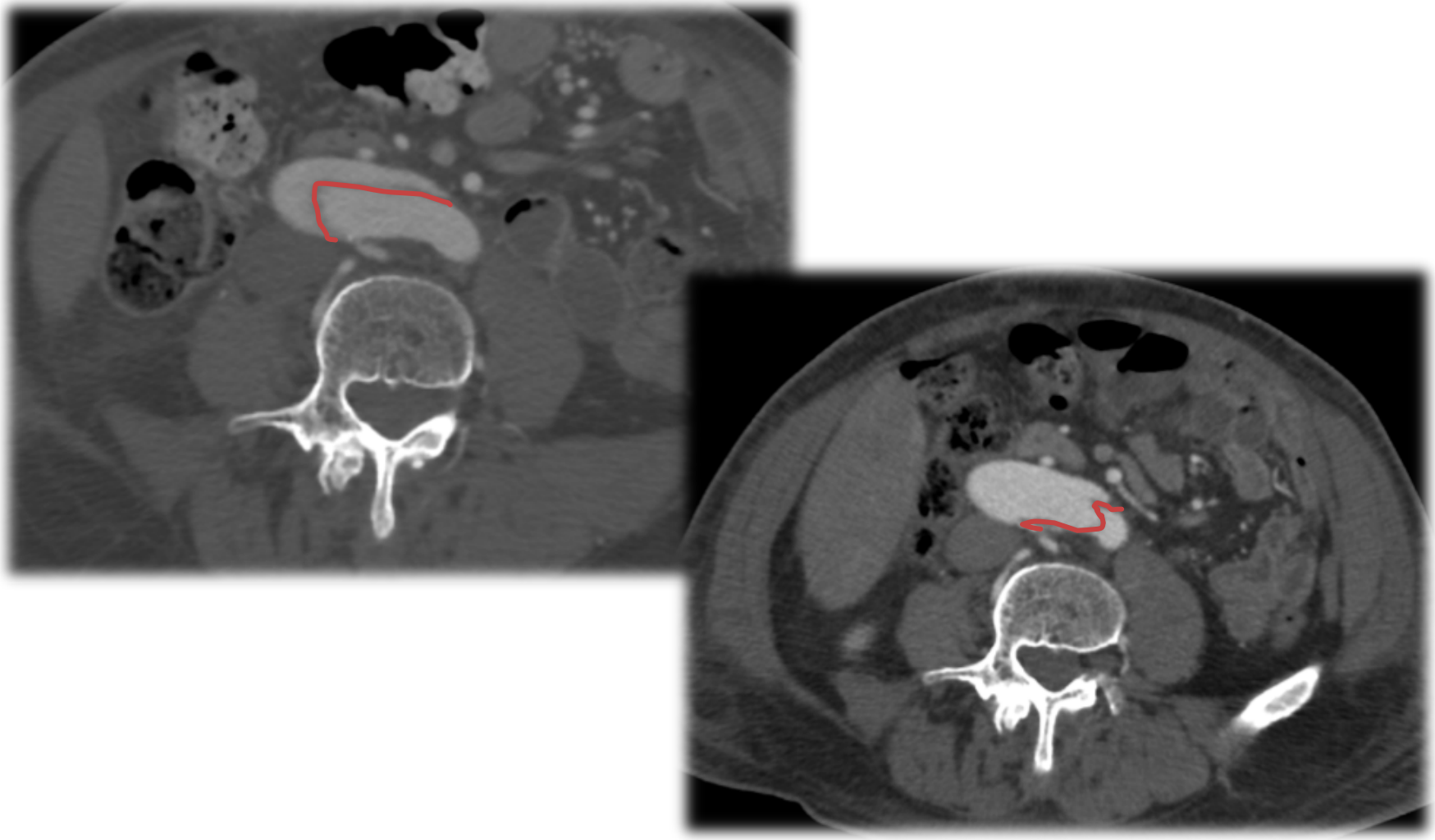
Clinical case

After 4 days clinical symptoms of acute limb ischemia occurred

CT Angiography

Left common iliac artery almost occluded

Clinical case



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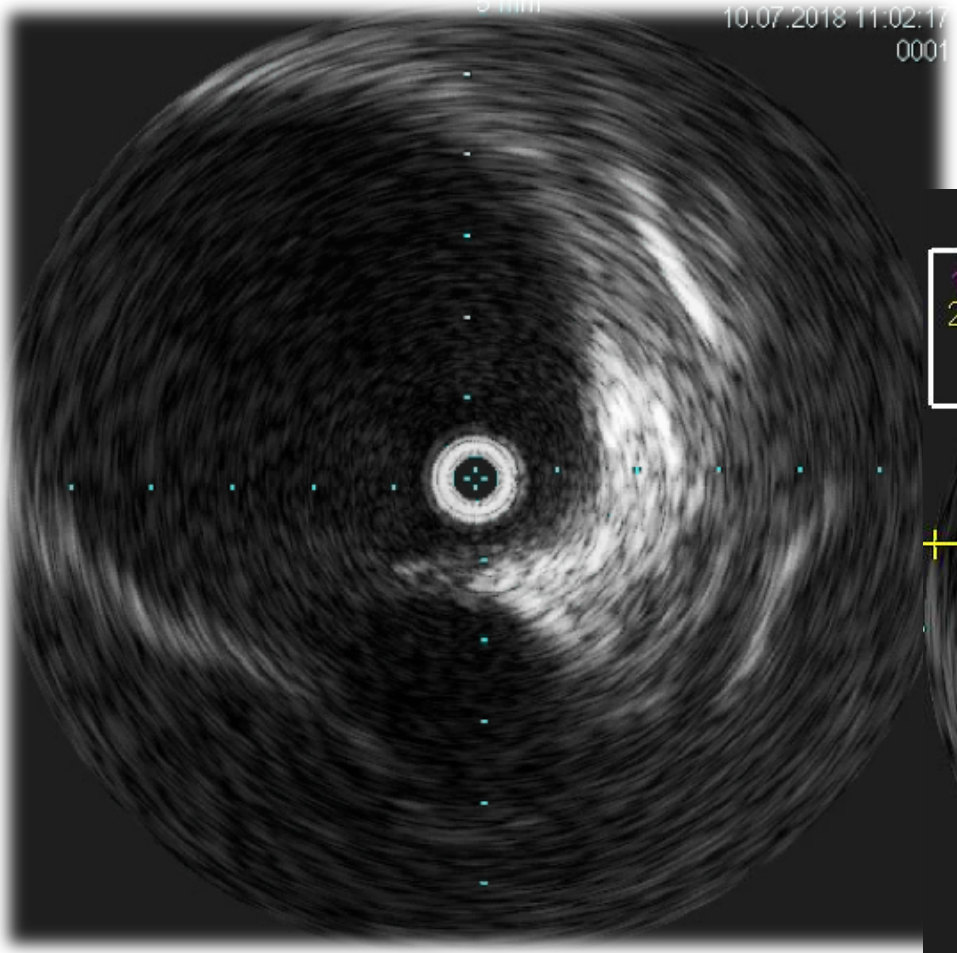
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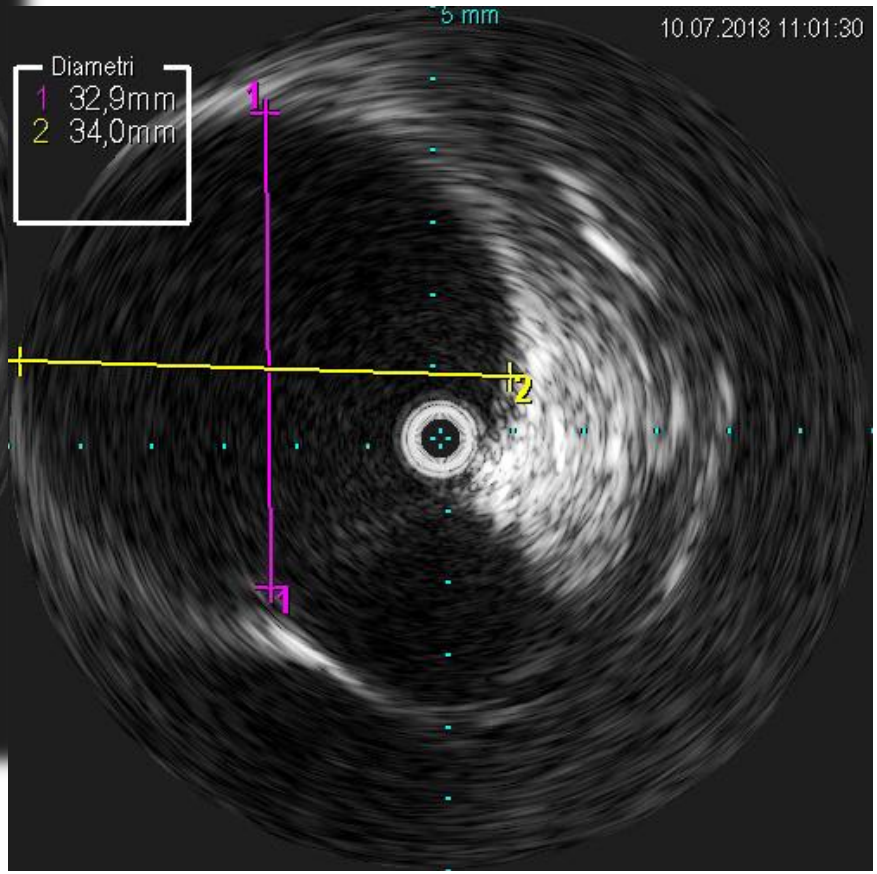
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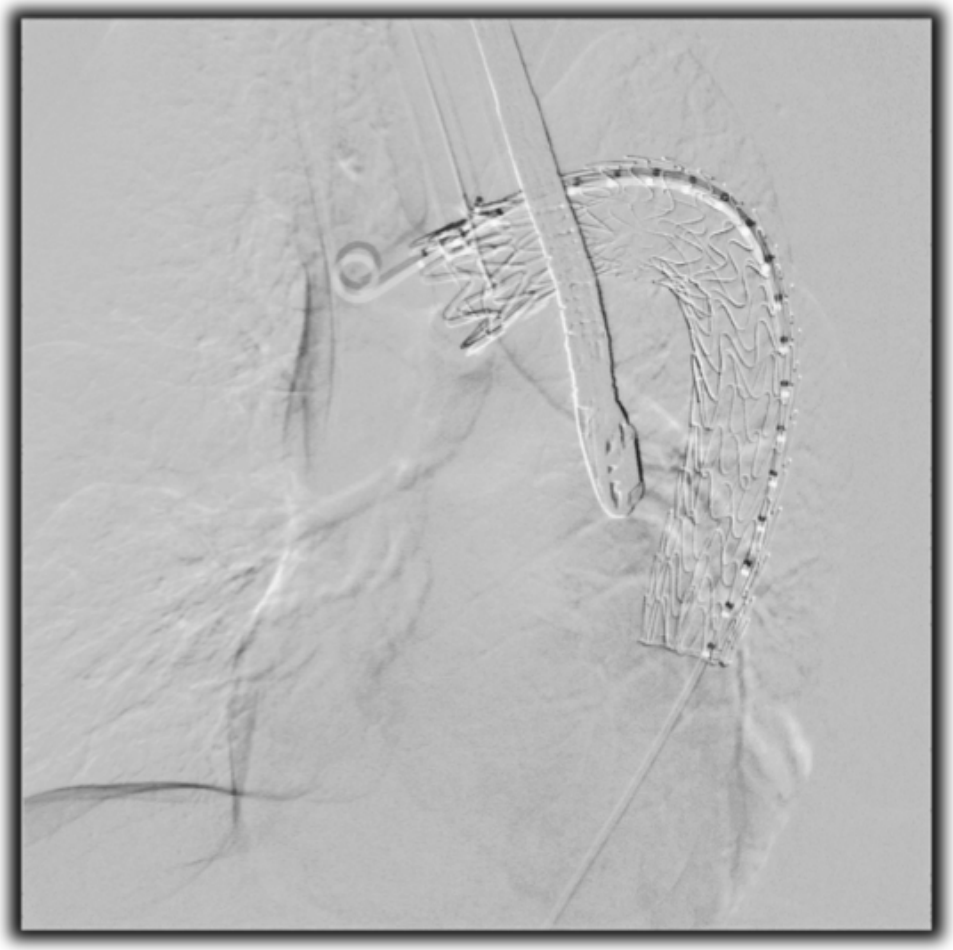
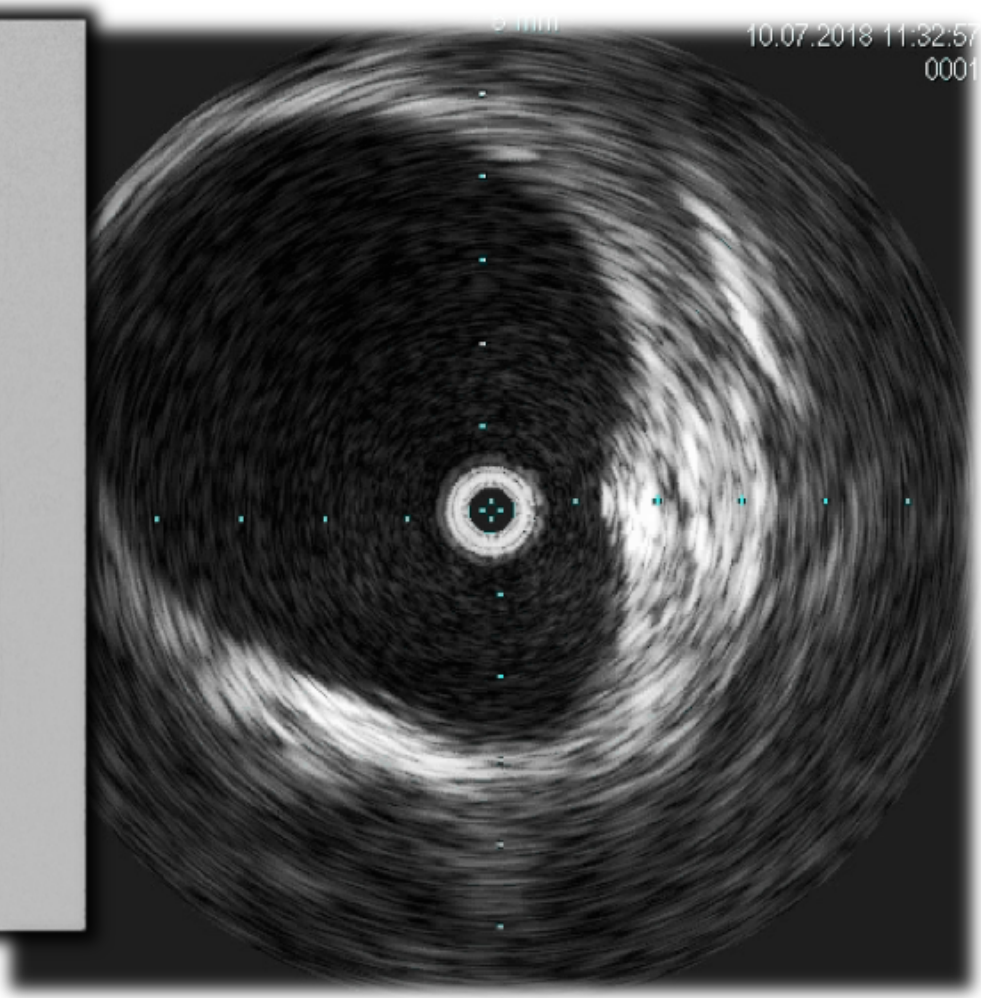
Diametri
1 32,9mm
2 34,0mm
1
2

TEVAR



TEVAR (Gore C-Tag 34x34mm)
+
LCC to LSA bypass

TEVAR



Take home messages

- Early identification and classification based on time of onset and presence of complication is mandatory in TBAD
- The survival rate drops dramatically during the first 7 days in patients affected by TBAD
- Mortality is significantly influenced by the concomitant presence of complication
- First line treatment of TBAD is anti-impulse therapy

Take home messages

- TEVAR is the gold standard treatment for complicated TBAD
- In case of aortic rupture inducing complete FL thrombosis is mandatory and several peculiar techniques may be used in addition to TEVAR
- In case of malperfusion visceral branch stenting must be performed
- TEVAR can improve long term outcome even in patients with uncomplicated TBAD

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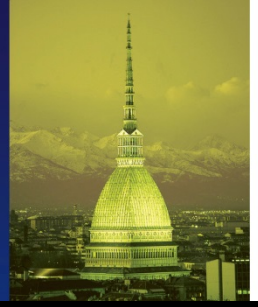

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