

Early and Long-term Outcomes of Urgent off-pump Aortic Wrapping for acute Type A aortic Dissections

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HÔPITAUX Paris

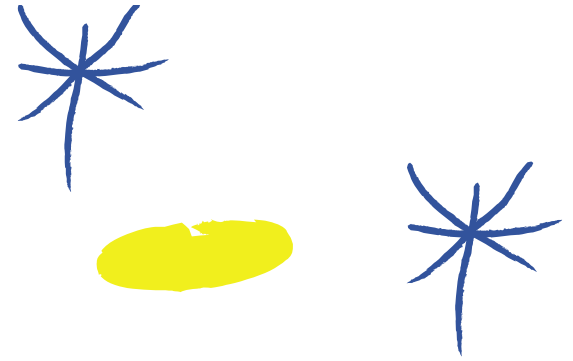
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Disclosures



- Research support, Consulting, IP
 - Cook Med, GE Healthcare, Bentley

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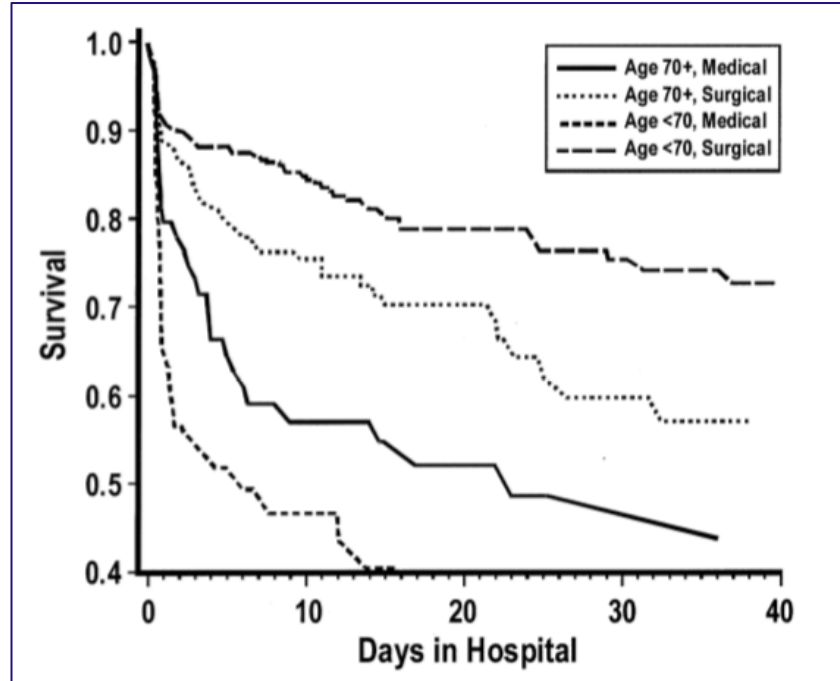
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Introduction

Acute Type A Aortic Dissection in the Elderly: Clinical Characteristics, Management, and Outcomes in the Current Era



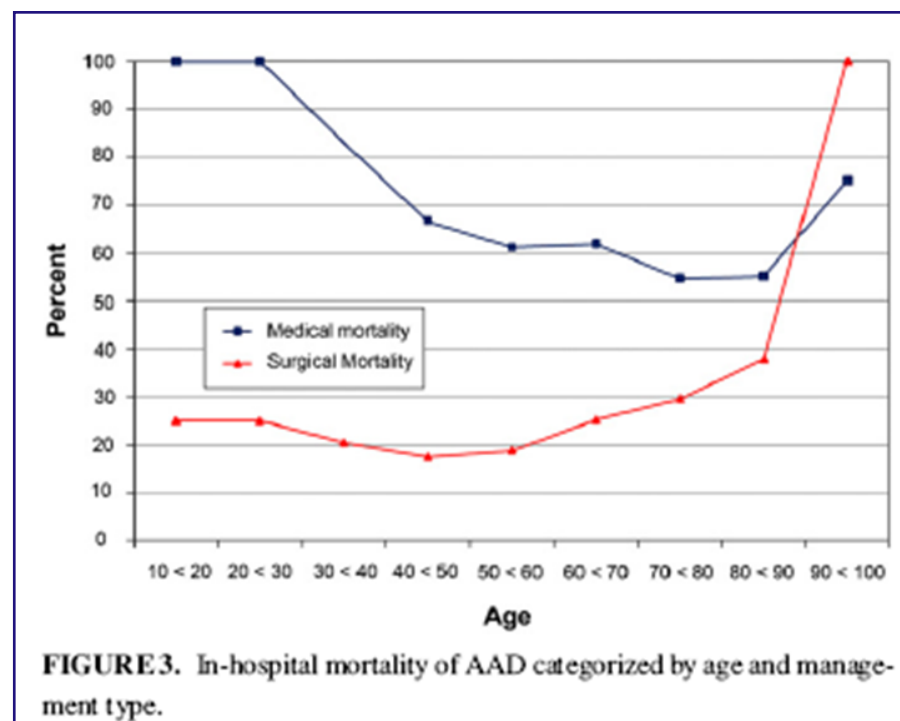
Mehta et al. JACC 2002

- In-hospital mortality was higher among older patients (43% vs. 28%, $p = 0.0006$).
- age >70 years as an independent predictor of hospital death for acute type A aortic dissection



Introduction

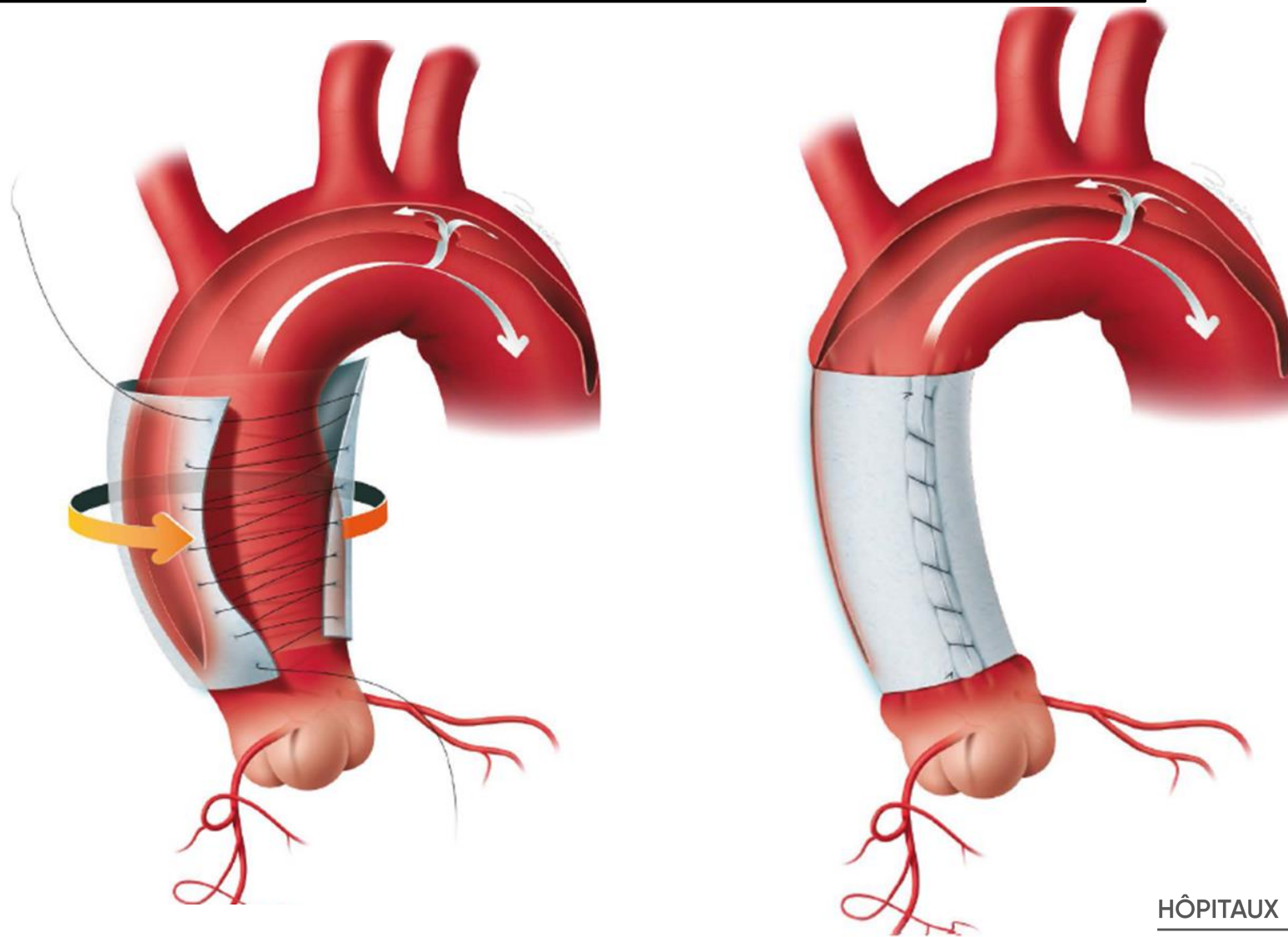
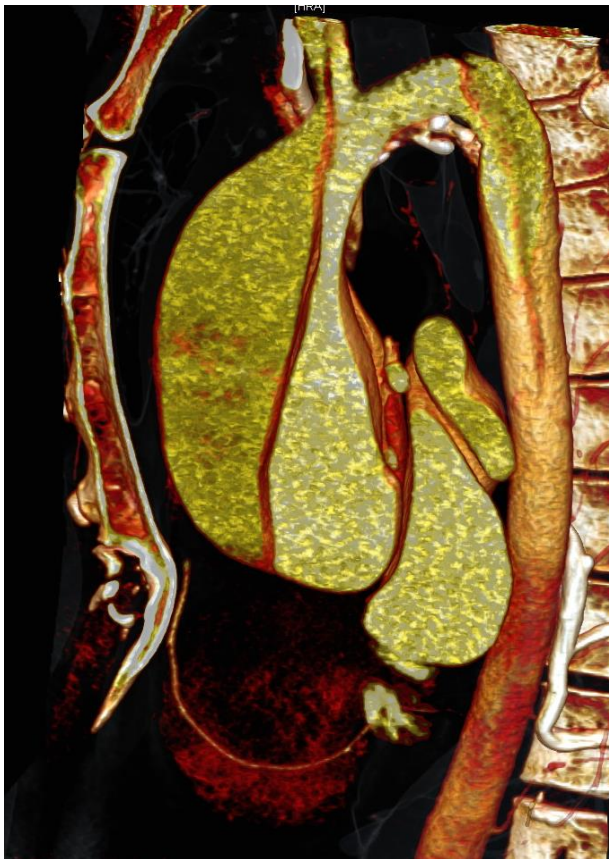
Role of Age in Acute Type A Aortic Dissection Outcome: Report From the International Registry of Acute Aortic Dissection (IRAD)



Trimarchi et al. J Thor Cardiovasc Surg
2010



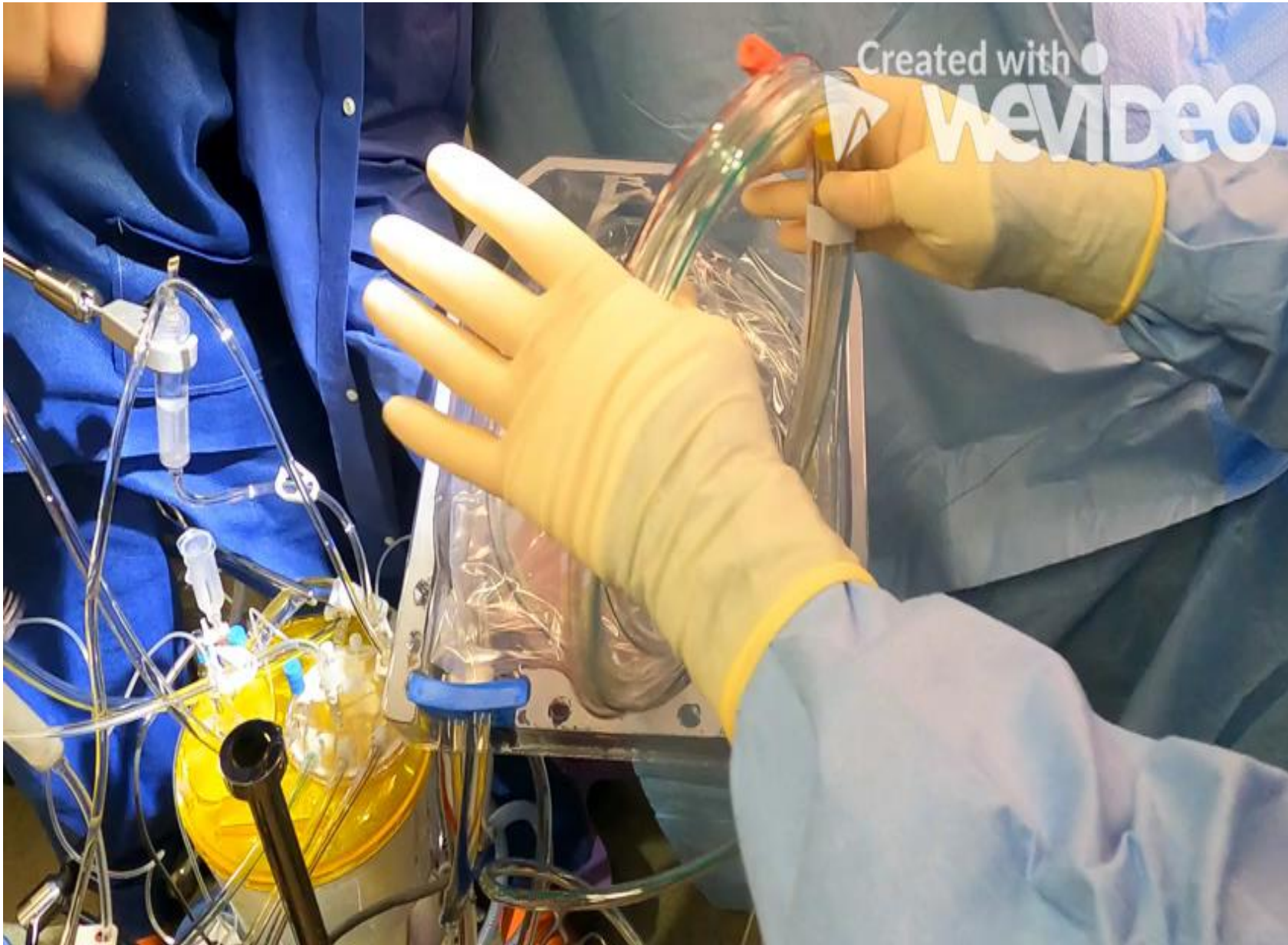
Alternative approach: off pump wrapping



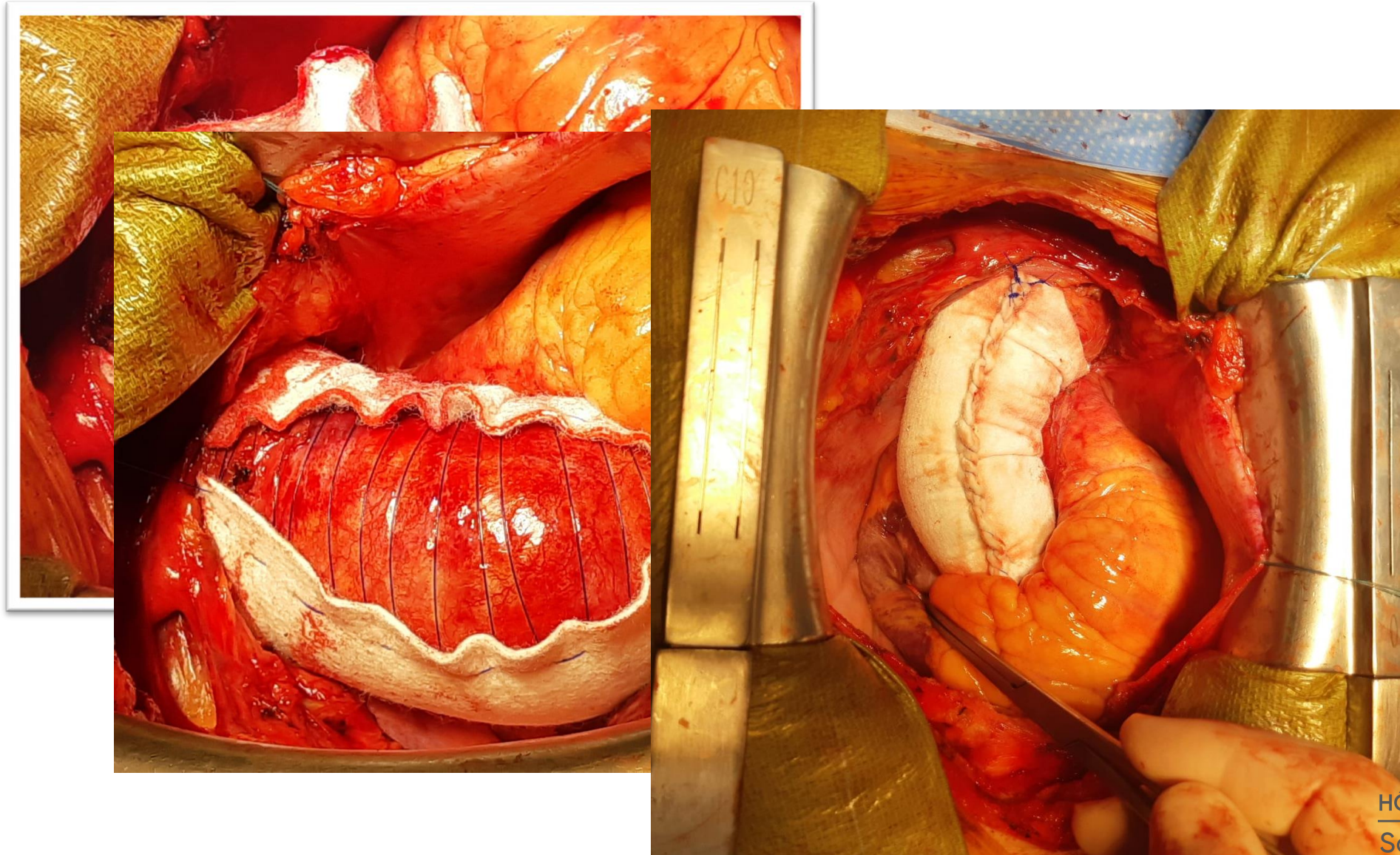
Ramadan R, *Ann Thorac Surg.* 2011; *Ann Thorac Surg.* 2014

Ascending aorta wrapping for high risk acute aortic dissection

- Pre-requisites :
 - No significant aortic valve insufficiency
 - No threatening peripheral malperfusion
- **Without cardiopulmonary bypass**
- Ascending aorta is divided from pulmonary artery trunk and right pulmonary artery
- **Teflon plaque** tailored to tightly wrap the aorta from the coronary ostia to the innominate artery



Off Pump Wrapping Ascending Aorta





Results

35 patients treated by AW

Baseline patient characteristics		
Demographic characteristics and comorbidities		
Age, median (range)		77 (46-96)
Sex, male		20 (57.1%)
Body mass index, median (range)		25.6 (18.9-33.1)
Current smoking		10 (28.6%)
Hypertension		23 (65.7%)
Dyslipidemia		13 (37.1%)
Chronic kidney disease		3 (8.6%)
Diabetes		2 (5.7%)
Atrial fibrillation		8 (22.9%)
Cancer		9 (25.7%)
Coronaropathy		1 (2.9%)
Previous aortic valvulopathy		3 (8.6%)
Preprocedural medication		
Antiplatelet		12 (34.3%)
Anticoagulant		4 (11.4%)
Betablockers		8 (22.9%)

During the study period, 142 other patients had standard open repairs of ATAADs

Results

Surgical Procedures	N
AW limited to the ascending aorta	14 (40%)
AW extended to the left subclavian artery	21 (60%)
operative time	135 min. (range 66-420; IQR 100-154)
Cardiopulmonary bypass	1 (3%)
Intraoperative blood transfusion	15 (43%)
ICU length	4 days (range 0-24; [IQR 7.25])
hospital length	15 days (range 5-35; [IQR 12])

Results

Peri-operative and early in-hospital outcomes

The 30-day mortality rate was **9%** (3/35)

Cause	Timing (day)
Iatrogenic descending thoracic aortic rupture (during renal stenting for AKI)*	1
aortic rupture *	5
multi organ failure	5

* Dissection related

Results

Peri-operative and early in-hospital outcomes

7 patients (20%)

Major complications	N
hemodynamic shock	2
septic shock	3
AKI	2

Neurological event (TIA):
2 (5.7%)

11 patients (31%)

Reinterventions	N
axillo-bifemoral bypass (ALI)	1
hemothorax drainage	1
renal artery stenting	1
TAVR	1
TEVAR	1
EVAR	1
Embolectomy (ALI)	1
aortic fenestration procedures	1
Ascending aorta stenting	4



PRE OP

POST OP

6-MONTH

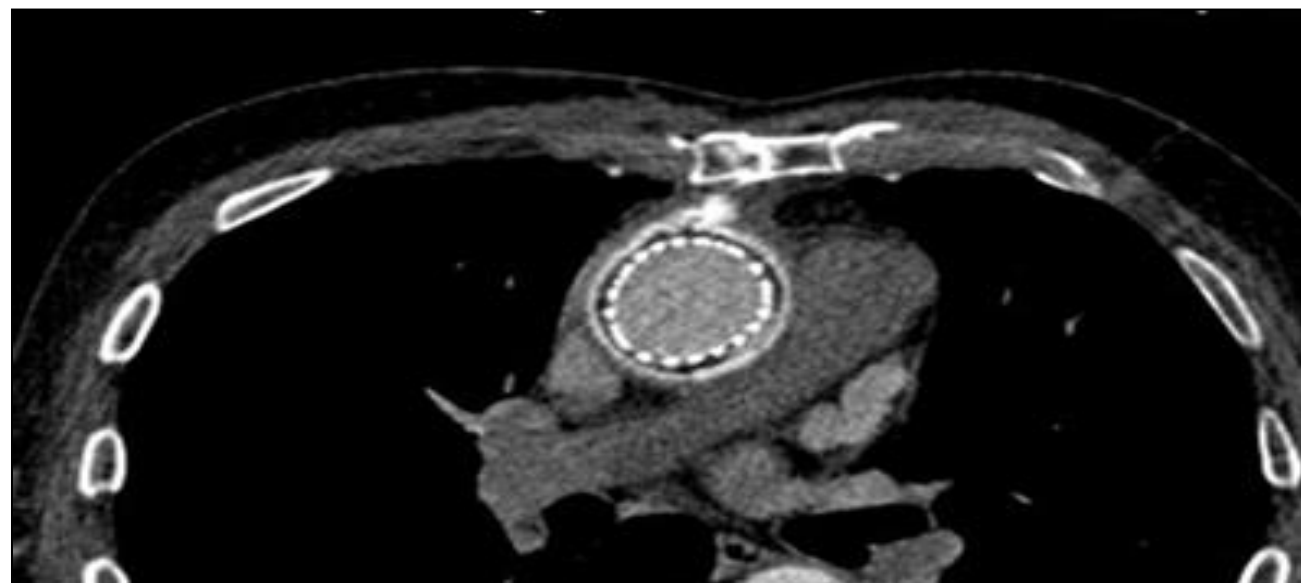
Case 1



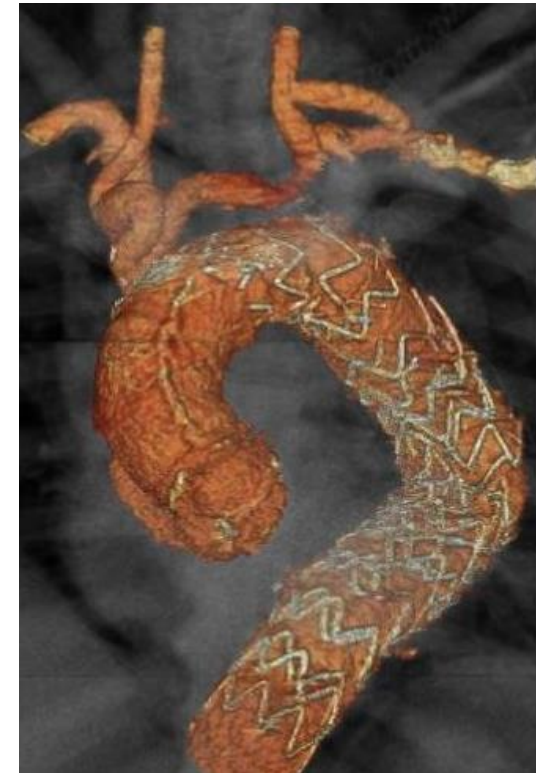
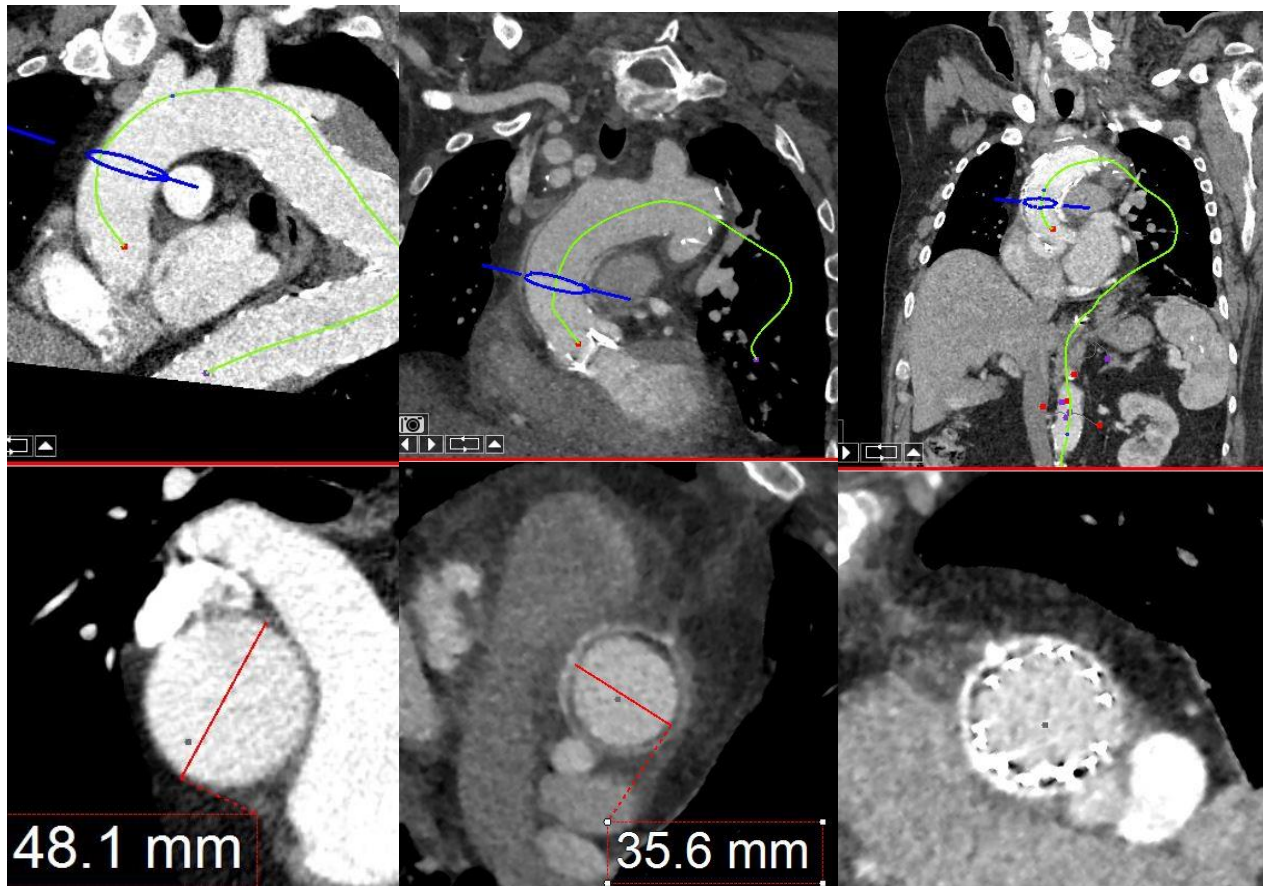
Case 2

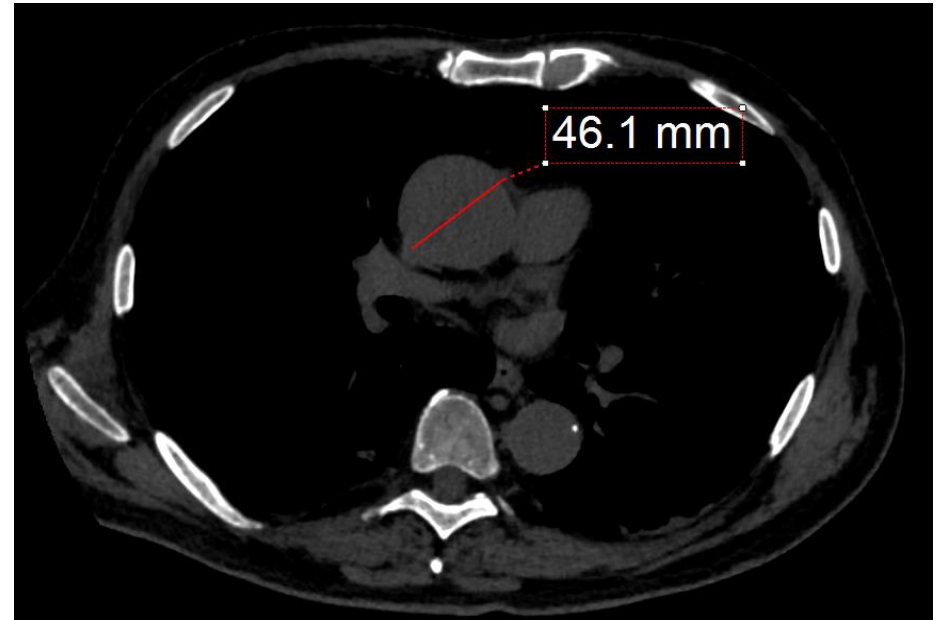
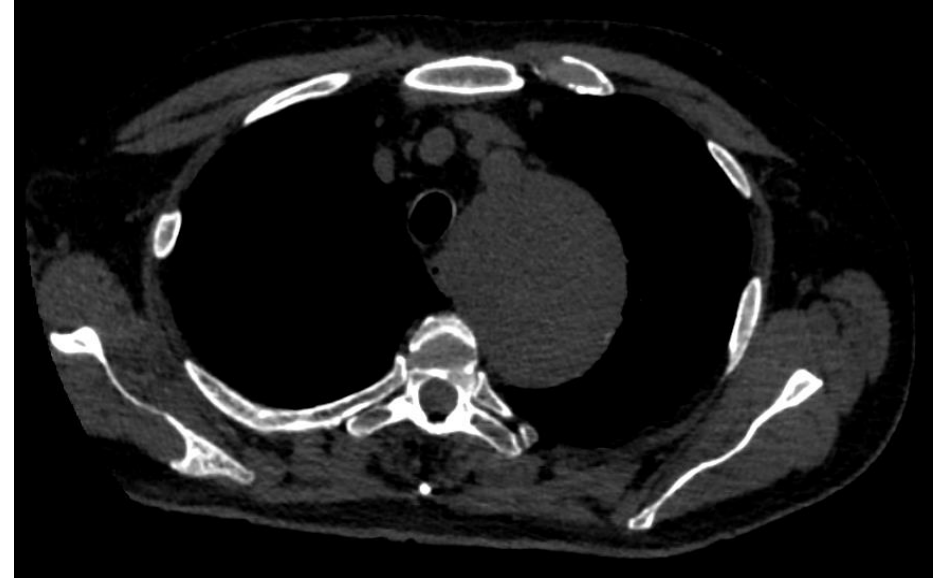
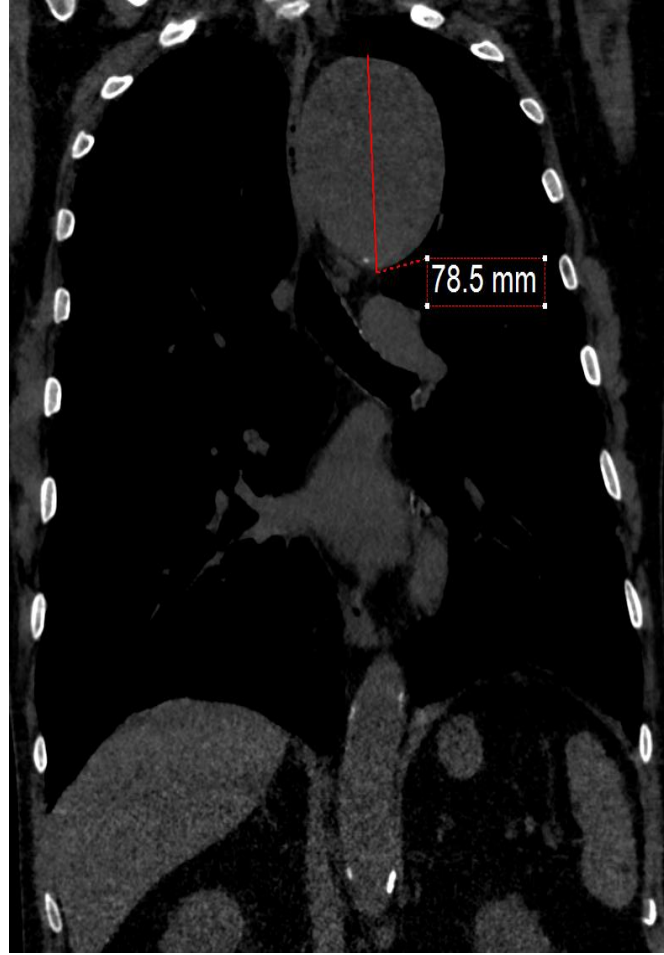
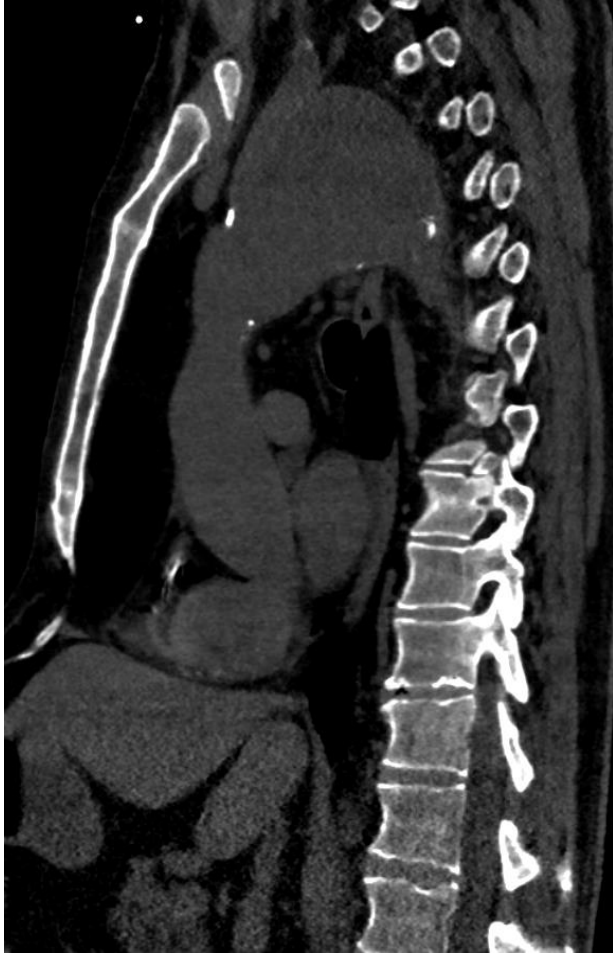


Stenting

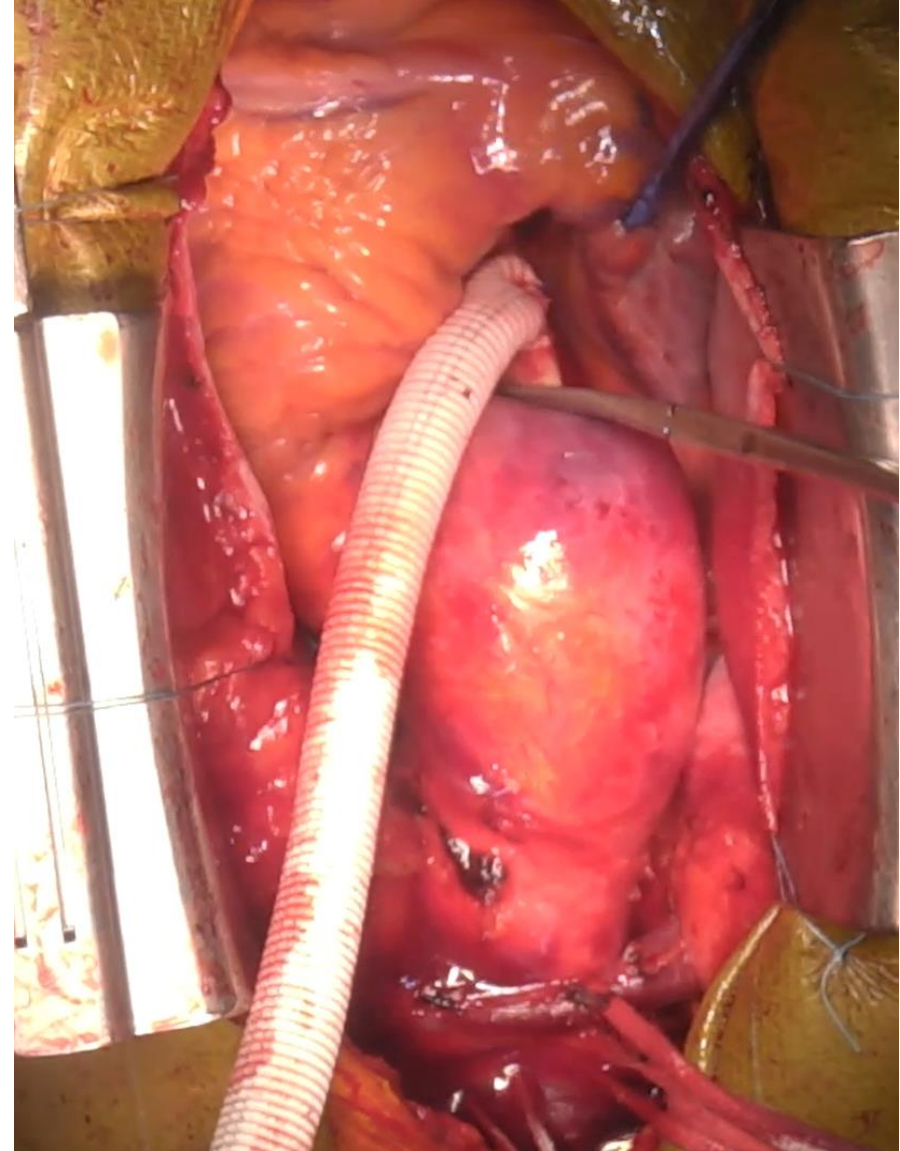
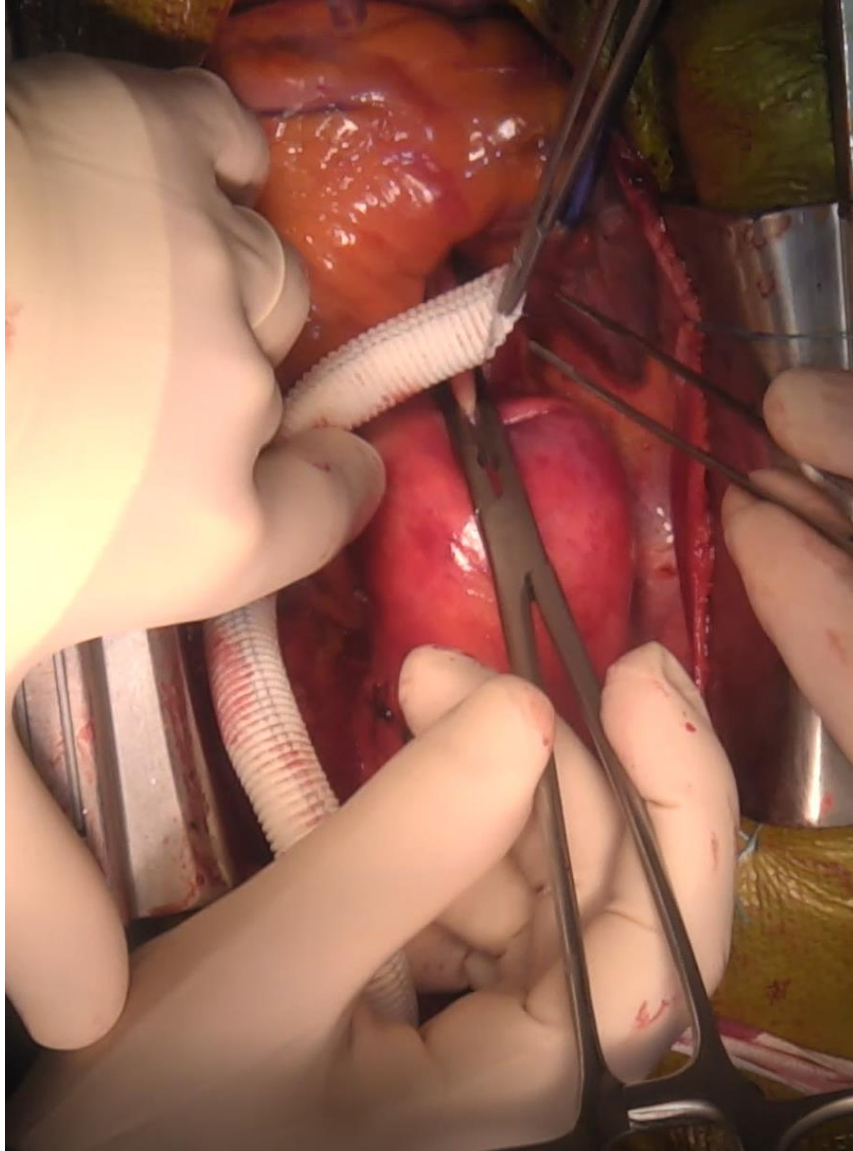


Teflon Wrapping of the Aorta

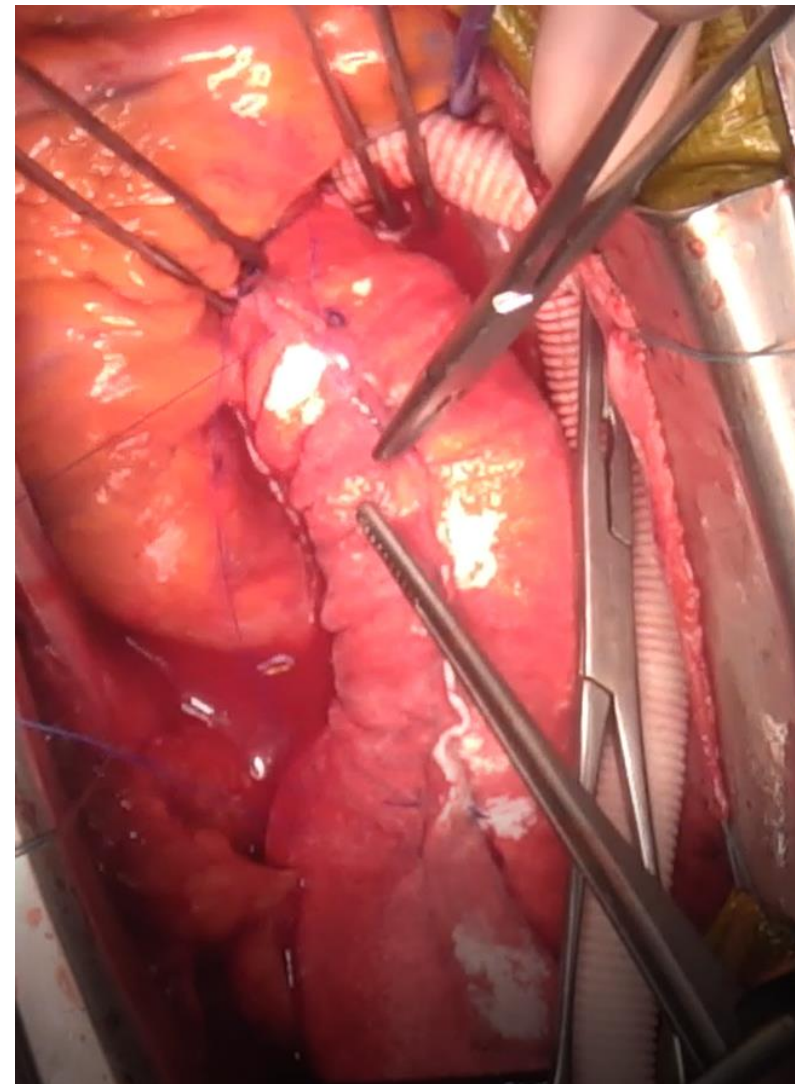
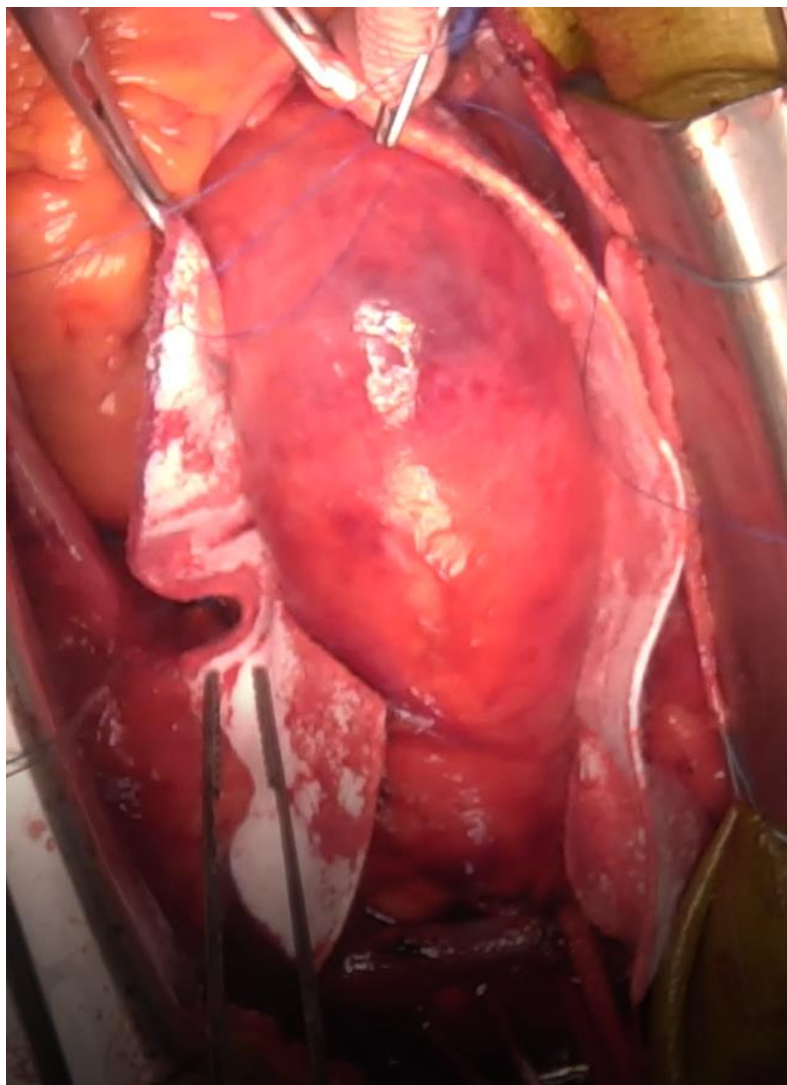
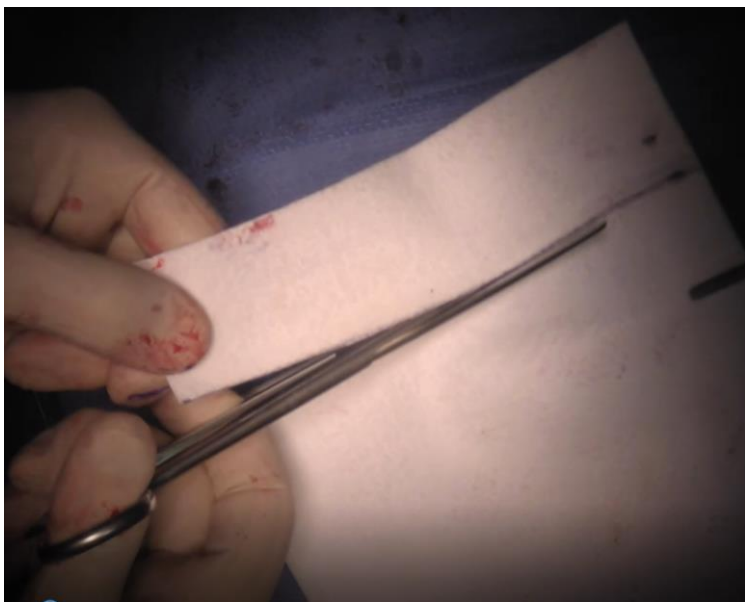




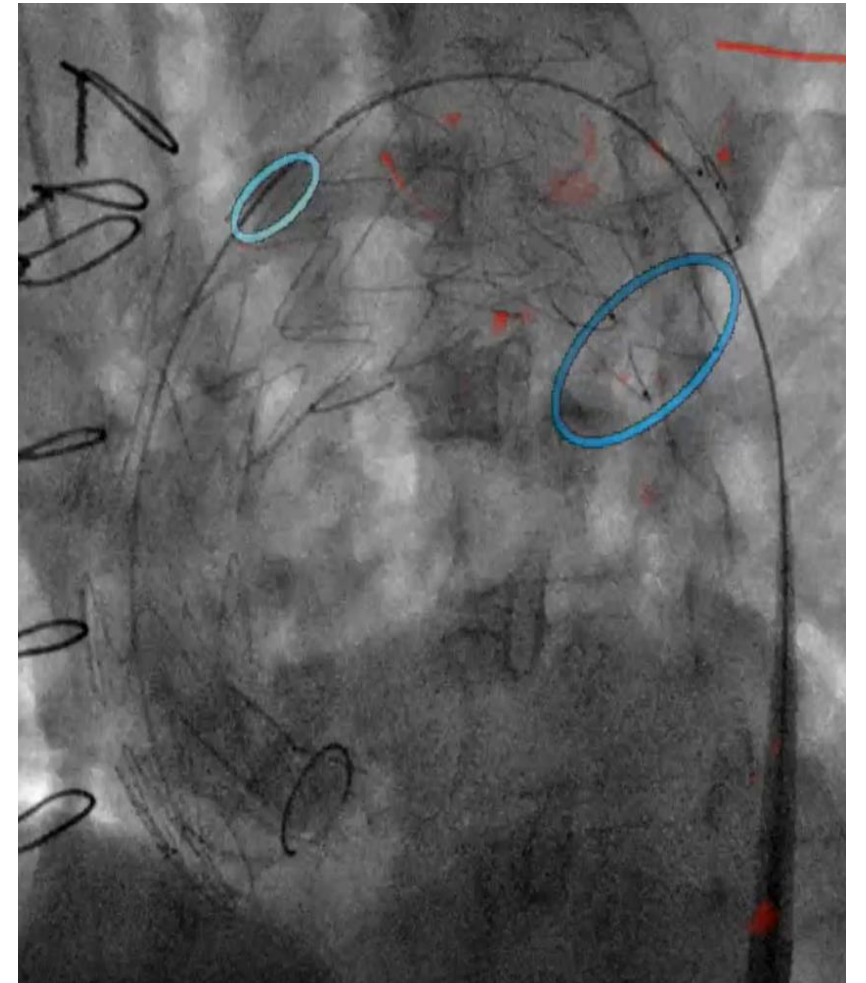
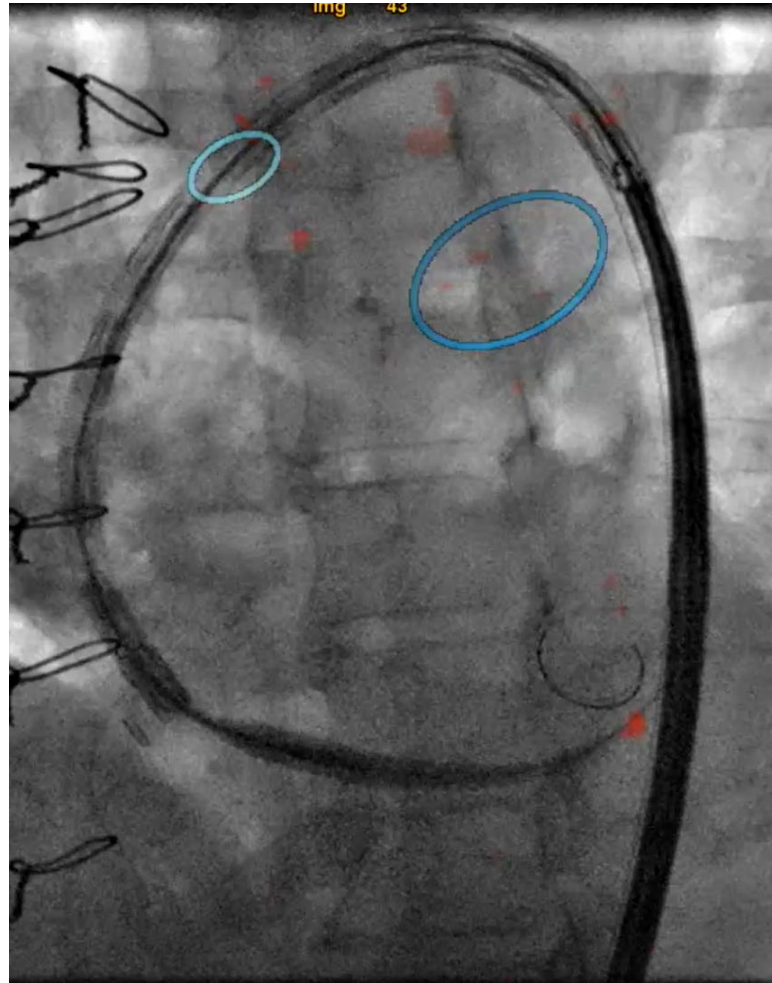
Debranching (Innominate-LCCA-LSCA)



Wrapping (46 → 36mm)

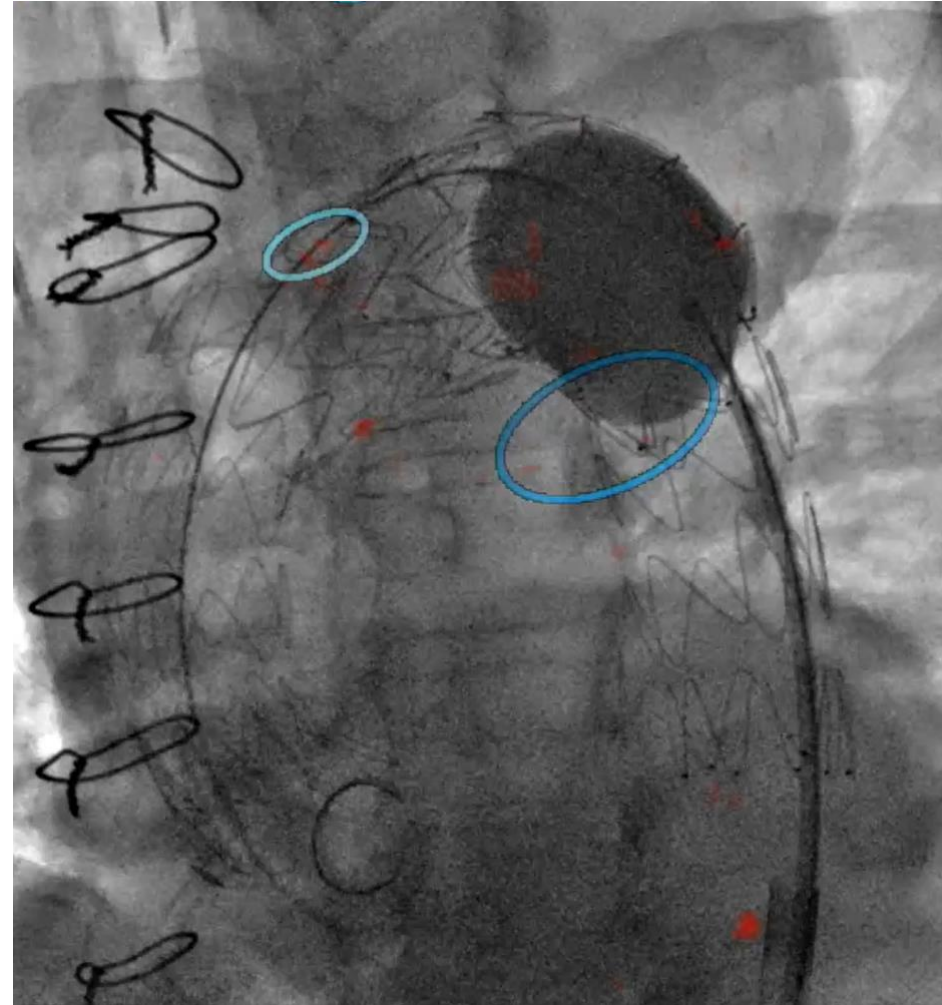


TEVAR

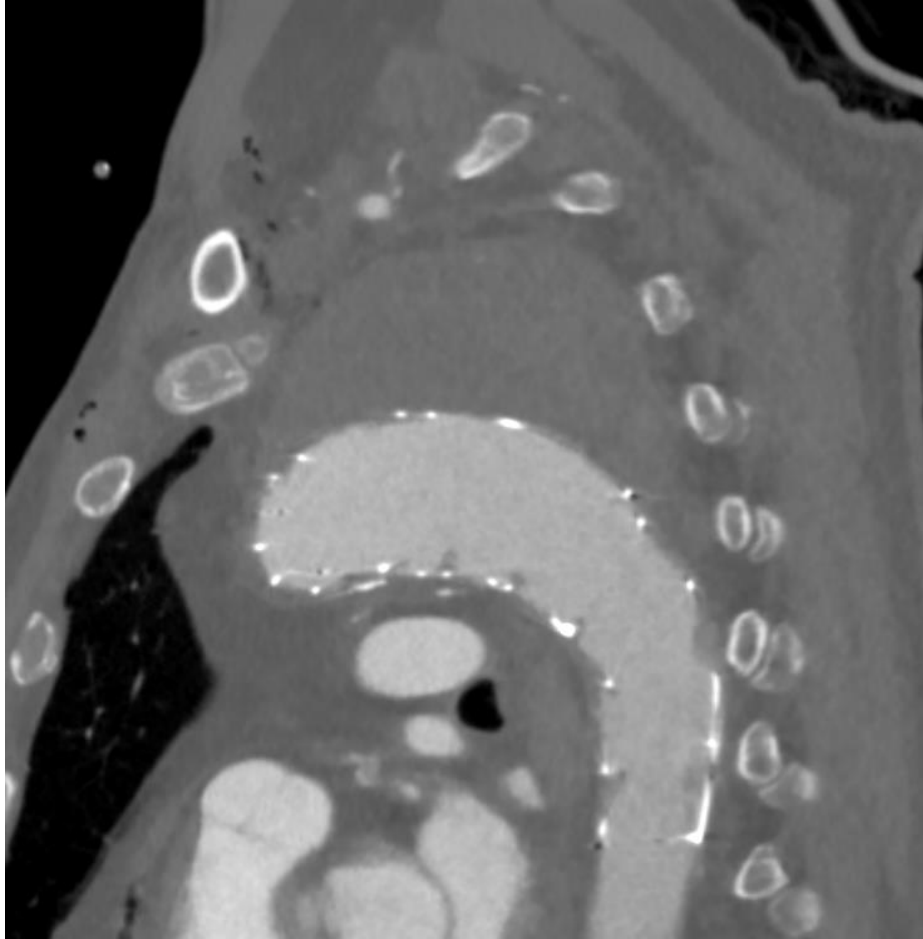


ZTA-PT 42-38 225

TEVAR



ZTA-PT 42-38 173





Conclusions

- ✓ Off-pump aortic wrapping is associated with favorable early outcomes and a low rate of aortic events during follow-up
- ✓ It should be considered for patients at high risk for conventional surgical repair
- ✓ First step before ascending and/or arch endografting?

