STS/EACTS Latin America Cardiovascular Surgery Conference

November 15-17, 2018

Hilton Cartagena | Cartagena, Colombia

Frozen Elephant Trunk procedure in patients with aortic dissection type B and concomitant aortic arch or ascending aortic pathology

Eduard Charchyan MD, PhD, Yurii Belov MD, PhD, Denis Breshenkov, Alexey Skvortsov MD

Petrovsky Russian Research Center of Surgery, Moscow

Department Aortic surgery

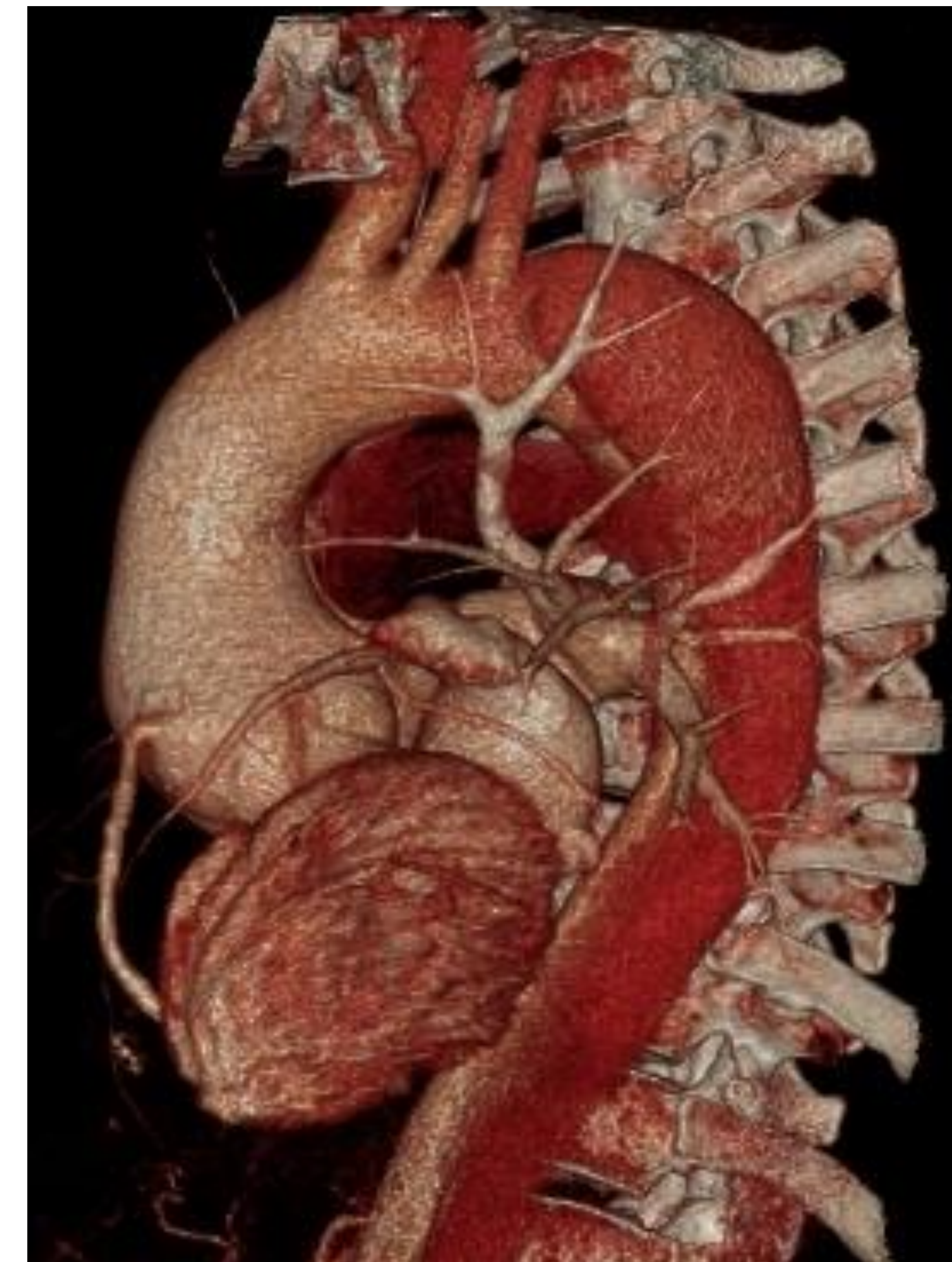
What is the Gold Standard ?

Proximal aortic pathology

DeBakey type III aortic dissection

- Purpose:
  - to determine the appropriate surgical strategy, depending on different involvement aortic segments in this cohort patients

- We present our experience of hybrid approach using FET technique



Nothing to disclose

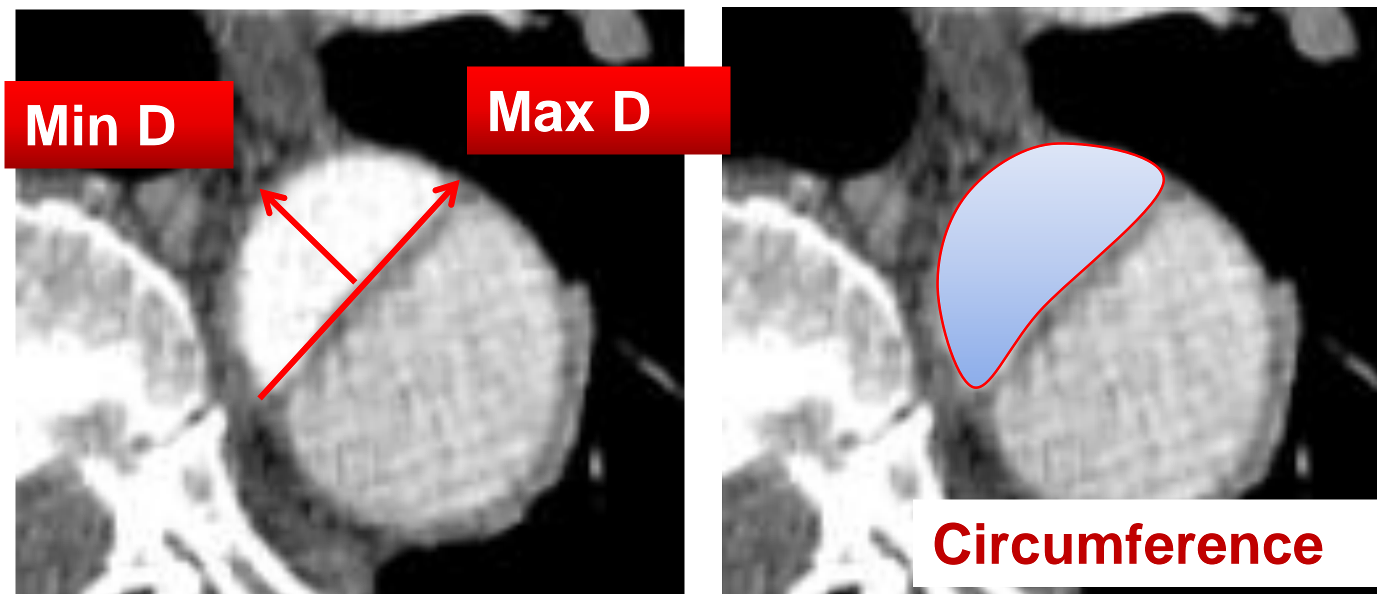
In patients with both of these diseases the golden standard has not been found yet

Methods

From January 2012 to November 2018, 308 patients underwent aortic arch repair
Of them 72 (23%) patients underwent FET procedure

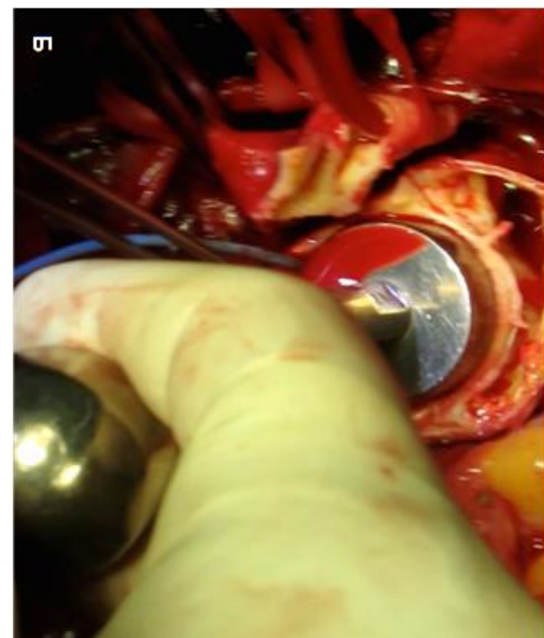
Patients with concomitant pathology of proximal aorta and TBAD – **41 (13,3%)**

19 underwent FET procedure



Preoperative planning FET diameter at level left atrium:

AAD – diameter true lumen + 10%
CAD – diameter true lumen = Circ./π



We use *Hegar's dilator* for intraoperative sizing of aortic true lumen diameter *at the level of proximal DTA*

Data presented as mean ± standard deviation (SD) or as median and range.

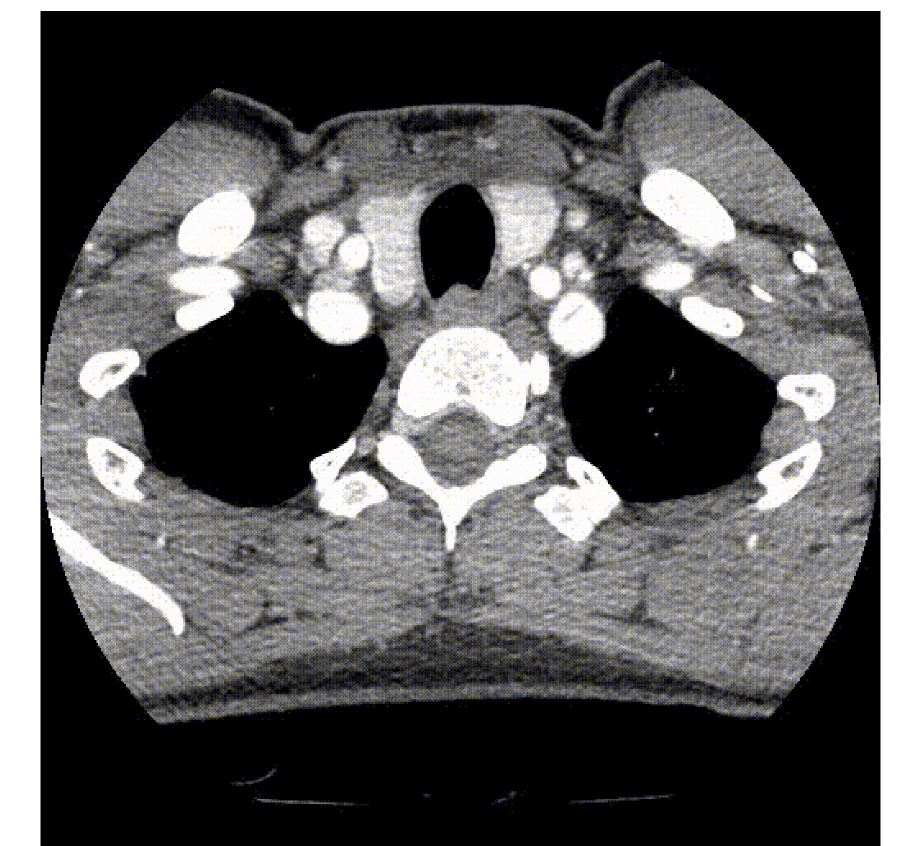
n (%); mean ± SD	n-19
Age	51,3±8,2
Sex, male	71,4%
Marfan syndrome	3 [16%]
COPD	4 [21%]
HF NYHA Class III-IV	6 [32%]
Coronary artery disease	3 [16%]
Renal failure	4 [21%]
Obesity ≥ 2	6 [32%]
Diabetes mellitus	2 [11%]
History of stroke	2 [11%]
Proximal pathology	
Proximal aneurysm	15 [79%]
IMH of ascending aorta	1 [5%]
Arch aneurysm (d>45 mm)	11 [58%]
Severe AR	10 [53%]
Severe MR	5 [26%]
Distal pathology	
Chronic TBAD	15 [79%]
Acute aortic TBAD	4 [21%]

Results 1:

n (%)	n-19
Aortic valve • Repair • David • Bentall-DeBono	 6[32%] 5[26%] 8[42%]
Aortic arch branches • Island • Separate	 12[63%] 7[37%]
CABG	3[16%]
AV valves • Mitral valve repair	 5[26%]
Mini-FET procedure	4

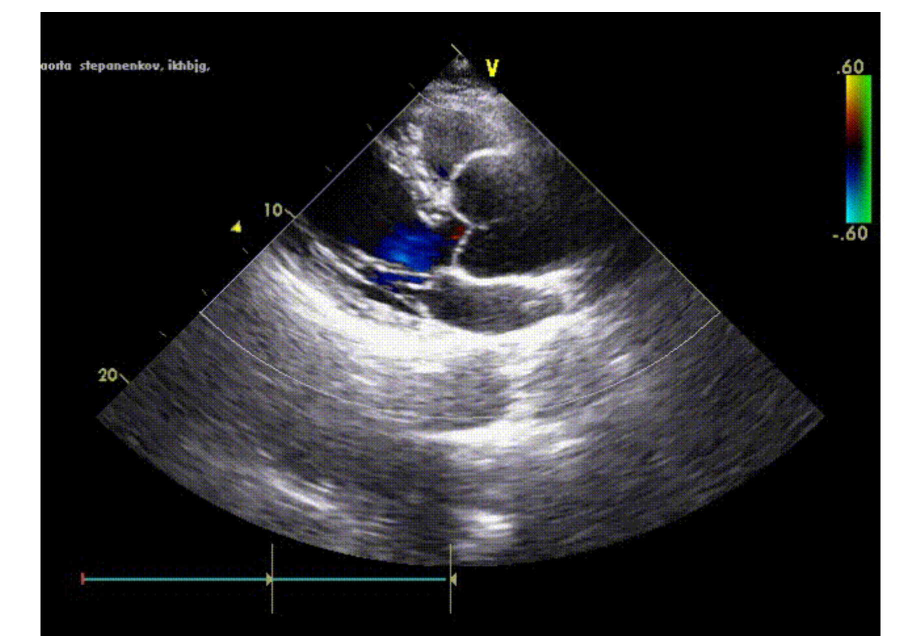
Mean± SD	n-19
CPB time (min)	166±27
Circulatory arrest time, 26 C˚ (min)	43 ± 11
Bilateral ACP	38±7
Cross-clamp time (min)	116 ± 23
Blood loss (ml)	945±63

- 58 years old, Ehlers-Danlos syndrome male
- TBAD, subacute stage
- Negative remodeling DTA
- Aneurysm of aortic root
- Ascending aortic ectasia

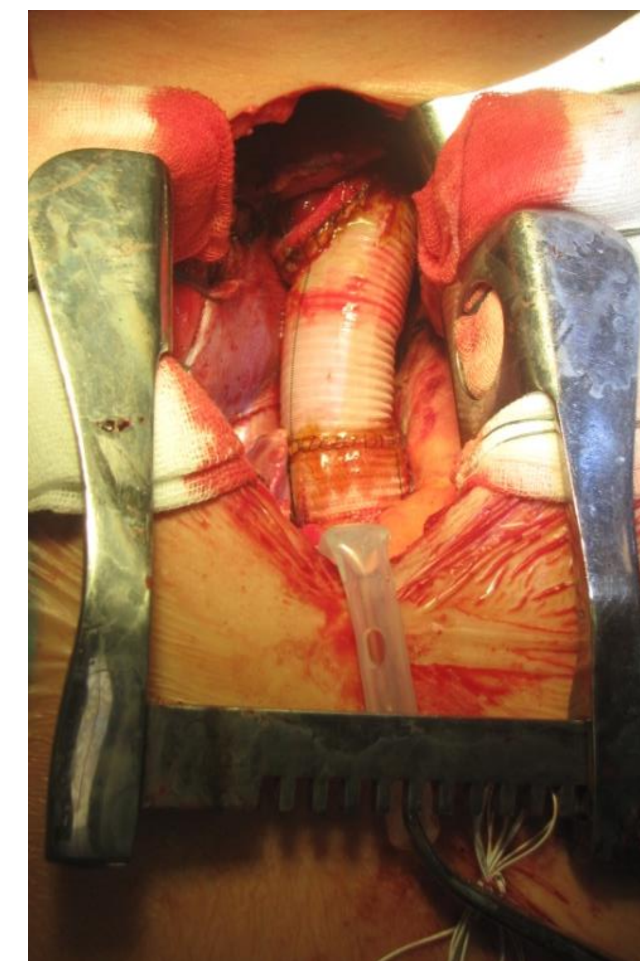


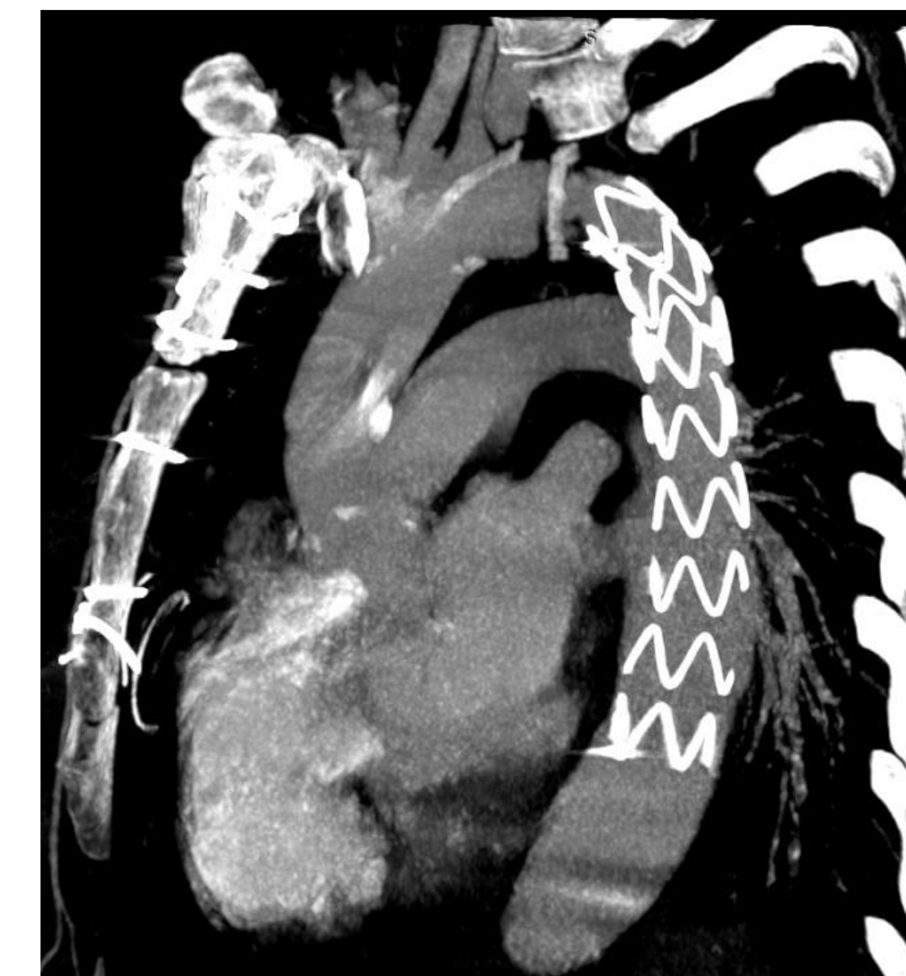
Preoperative axial CT scan

- d aortic root 54 mm
- d ascending aorta 44 mm
- AoV tricuspid, AVA – 29-30 mm
- AR moderate, type I El Khoury



Preoperative TTE aortic root on long axis

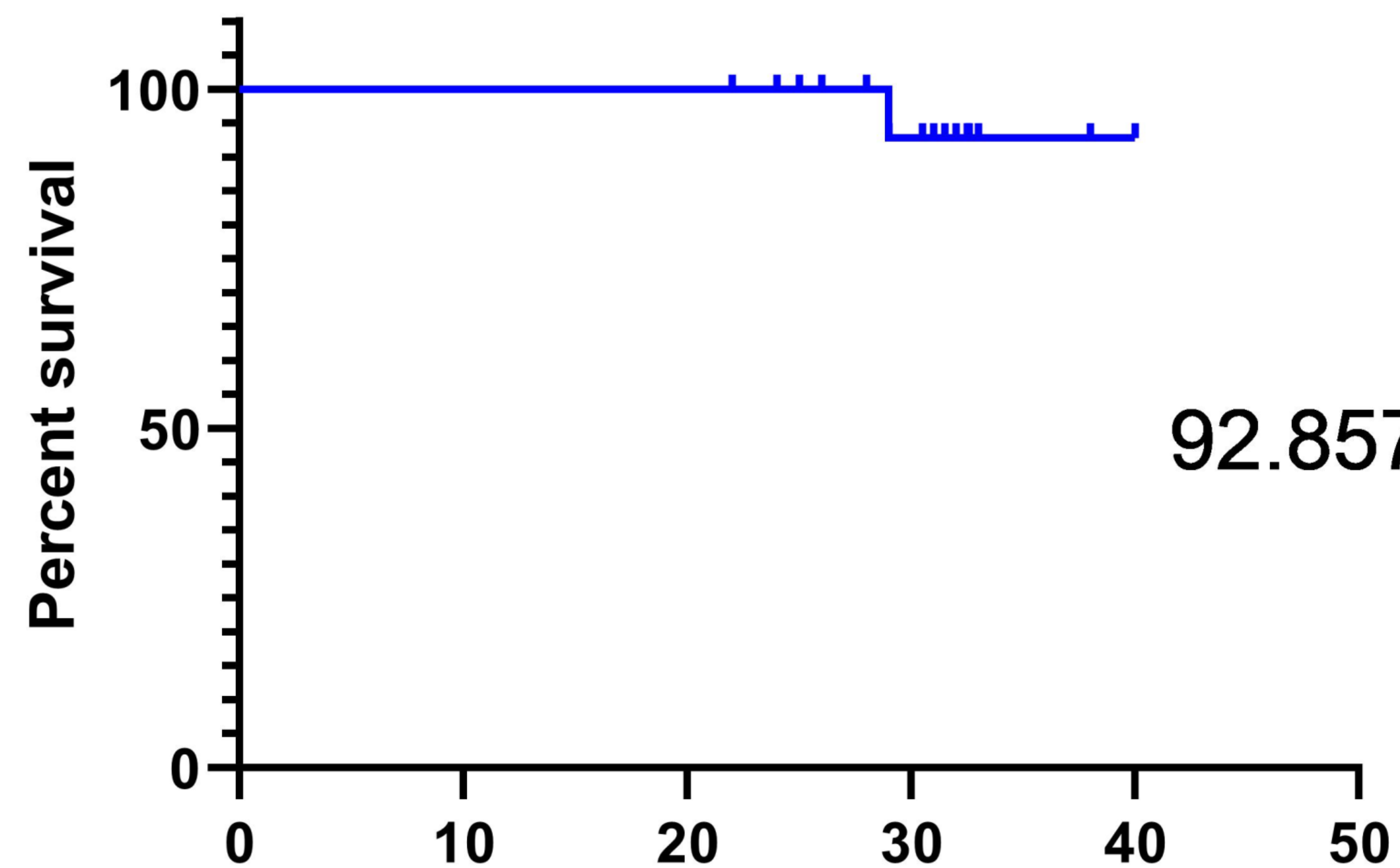




Intraoperative photo (A) and postoperative CT scan MIP reconstruction (B) after ***David procedure + FET from J-ministernotomy***

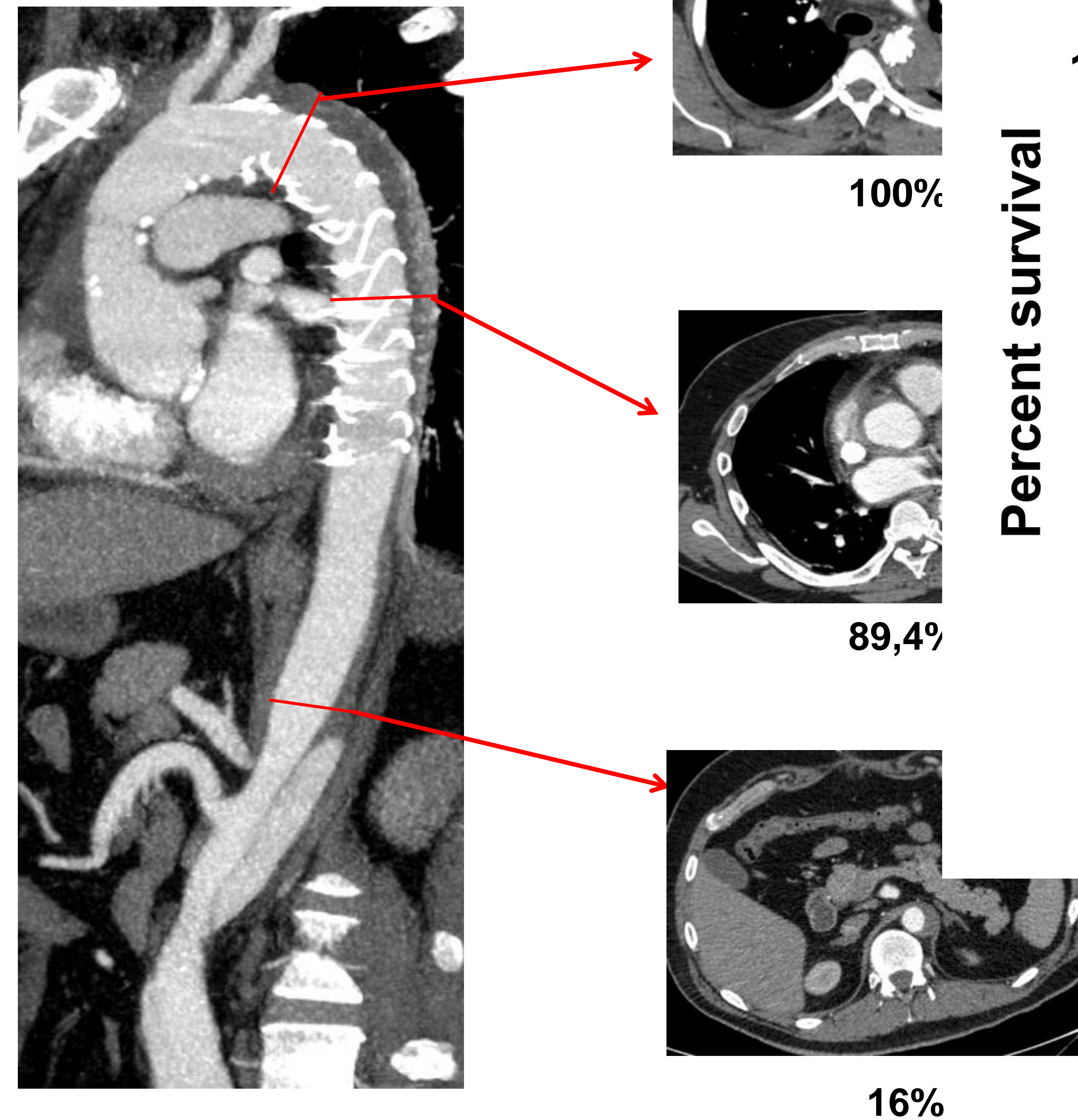
Results 2

n (%); mean ± SD	n-19
In-hospital mortality	0
30-day survival	19[100%]
Stroke	0
Subarachnoid hematoma	1[5,2%]
Paraplegia	0
Acute renal insufficiency	3[16%]
Re-exploration for bleeding	1[5,2%]
Pulmonary failure	4[21%]
Atrial fibrillation	5[26%]
GI complication	1[5,2%]

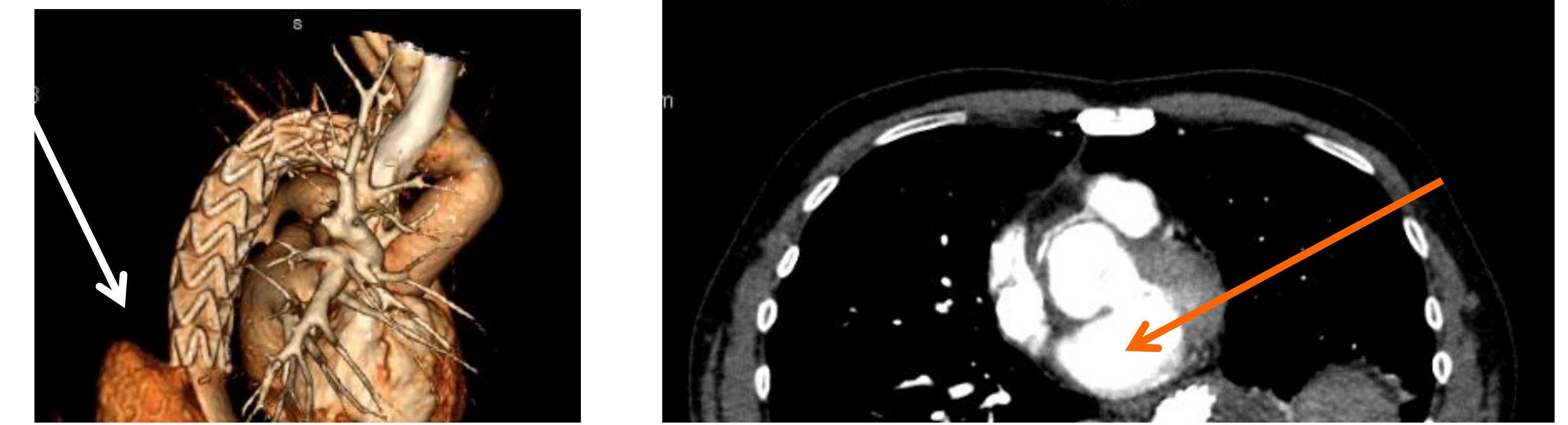


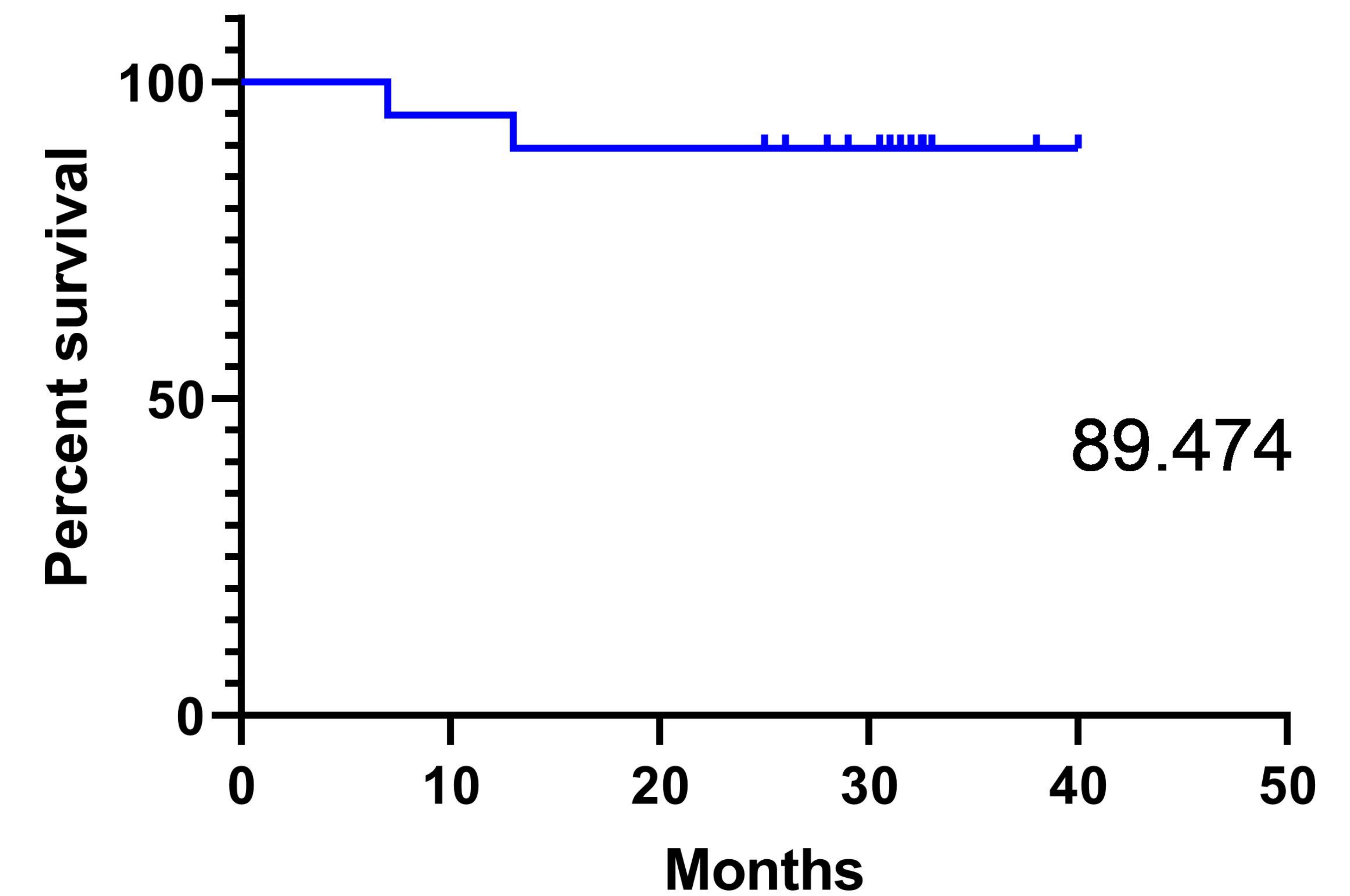
Kaplan Meier censored data

FL trombosis, *1-years follow-up*



Follow-up complications





↓

stable aortic remodeling

Conclusions:

- FET is an alternative aggressive method of treatment combining the proximal aortic pathology with TBAD
- This procedure allows one-stage radical correction and delays the second stage or completely excludes it
- Patients after FET require dynamic control of distal aortic segments
- Further monitoring of this group of patients is necessary in order to determine the best method of surgical treatment in this cohort of patients

THANK YOU

Contact information: Eduard Charchyan MD, PhD, email: charchmed@yahoo.com