DEBRANCH FIRST TECHNIQUE AND FROZEN ELEPHANT TRUNK PROCEDURE O.S.R. EXPERIENCE

ALESSANDRO CASTIGLIONI

DIRECTOR OF THE DEPARTMENT OF CARDIAC SURGERY
SAN RAFFAELE UNIVERSITY HOSPITAL, MILAN, ITALY

Disclosure

I do not have any potential conflict of interest

O.S.R. Experience

43 consecutive patients with chronic arch aneurysm treated with F.E.T technique (E-Vita Jotek) (one surgeon experience)

9 Patients with chronic degenerative or atherosclerotic arch aneurysm

33 Patients with previous Type A/B aortic dissection (Redo procedures)

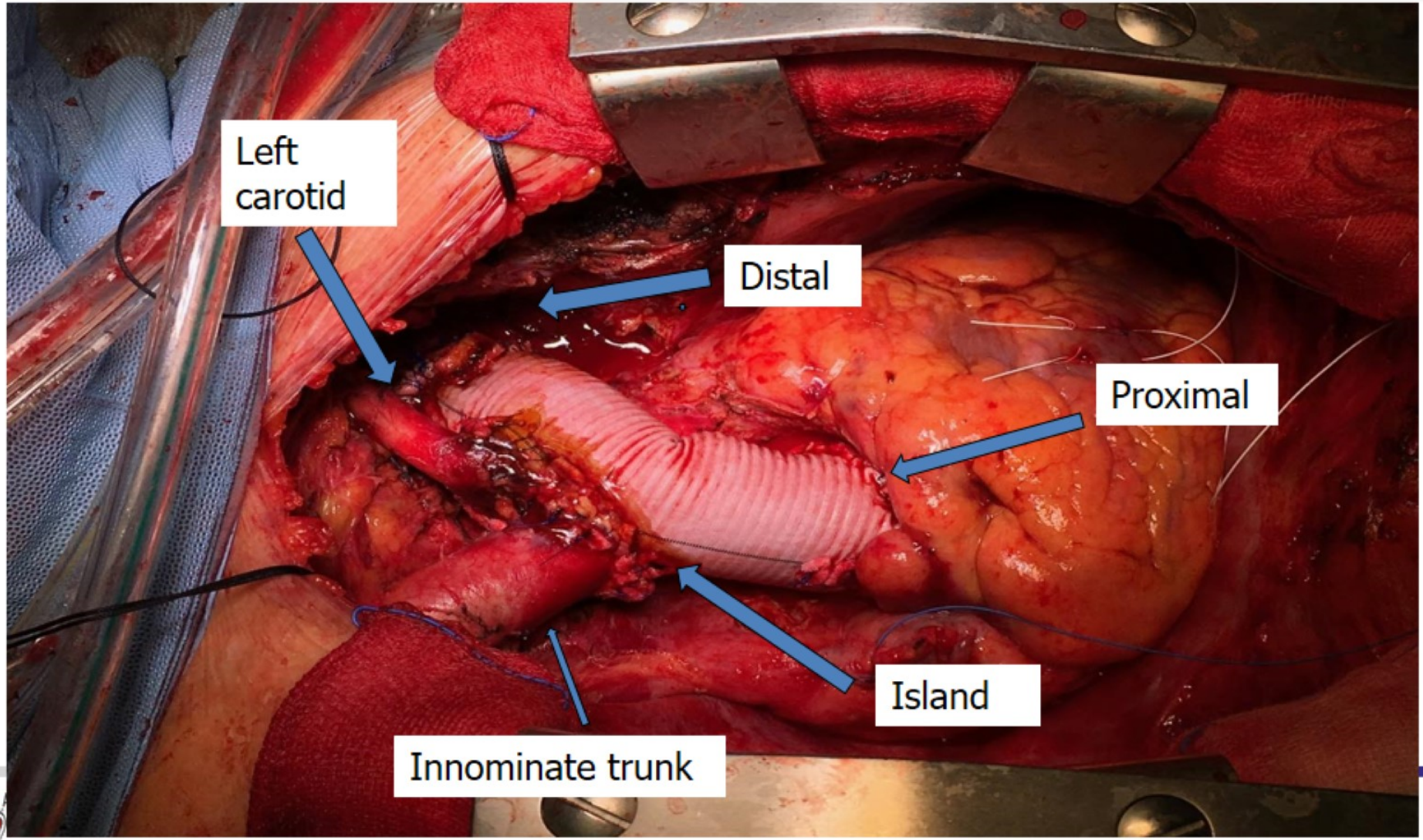
1 patients with Acute Type A aortic dissection were treated

To reduce the rate of possible neurological complications described in literarure a multidisciplinary approach was designed.

Three different surgical technique was developped:

1) 3 pz with the traditional ISLAND TECHNIQUE and direct cannulation of the left carotid artery sec KAZUI.
2) 16 pz with traditional ISLAND TECHNIQUE with a preoperative left carotid-succlavian bypass with concomitant left subclavian occluder plug.
3) 24 patients with BRANCH FIRST TECHNIQUE with a preoperative left carotid-succlavian bypass with concomitant left subclavian occluder plug.

Final results
E-Vita Island technique

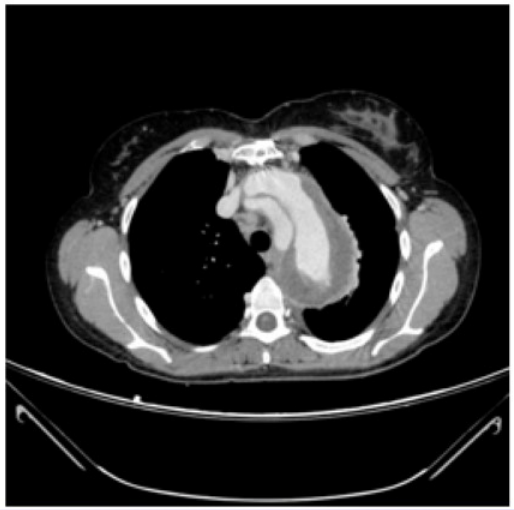


First experience with Frozen Elephant Trunk and Debranch First Technique

- A young female patient
- 32 years old
- Previous suspected diagnosis of collagenopathy (Horton Arteritis).
- Previous type A aortic dissection (12 months before)
- Further Dilatation of distal false lumen.
- Important dilatation and chronic dissection of both sopraaortic vessels.

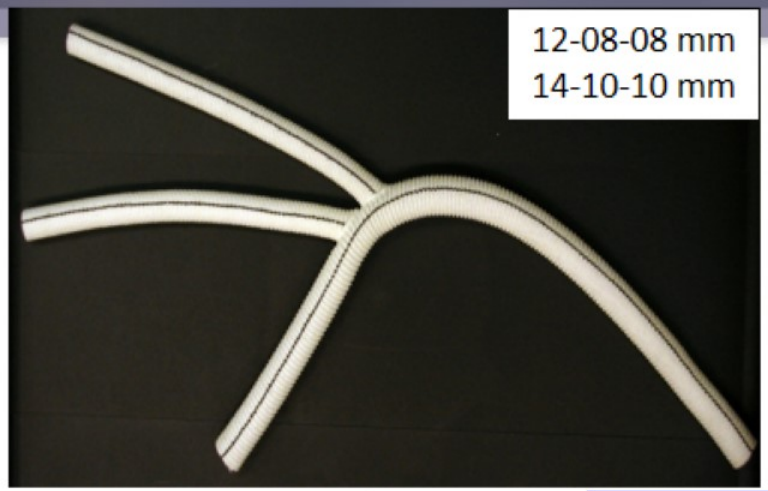
-Not possible Standard F.E.T. with ISLAND TECHNIQUE
-1 month before aortic surgery Bilateral Right and Left Carotid-succlavian bypass with concomitant prevertebral plug occlusion of left succlavian artery

First experience with Frozen Elephant Trunk and Debranch First Technique



HEMASHIELD PLATINUM

3 - Branch Graft



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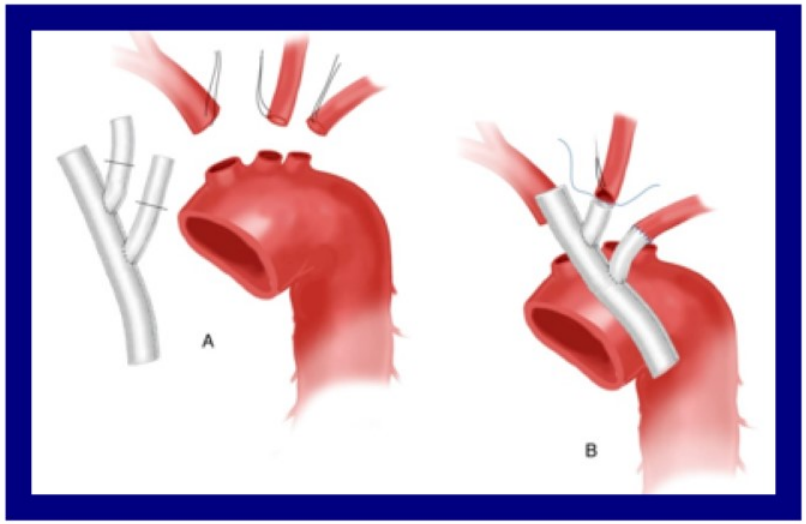
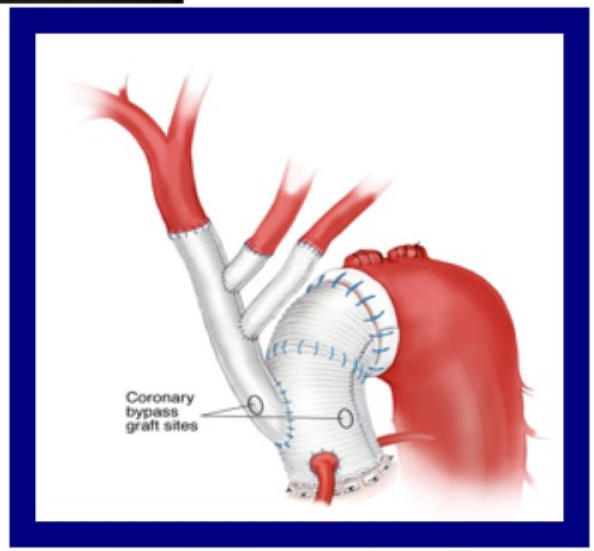




First post op results with Frozen Elephant Trunk and Debranch First Technique

A novel custom-made E-vita plus prosthesis has been designed by adding 2 side branches (Fig. 1)

- Bilateral continuous antegrade cerebral perfusion
- Zone 0-1 distal anastomosis
- Early reperfusion of spinal cord and visceral vessels

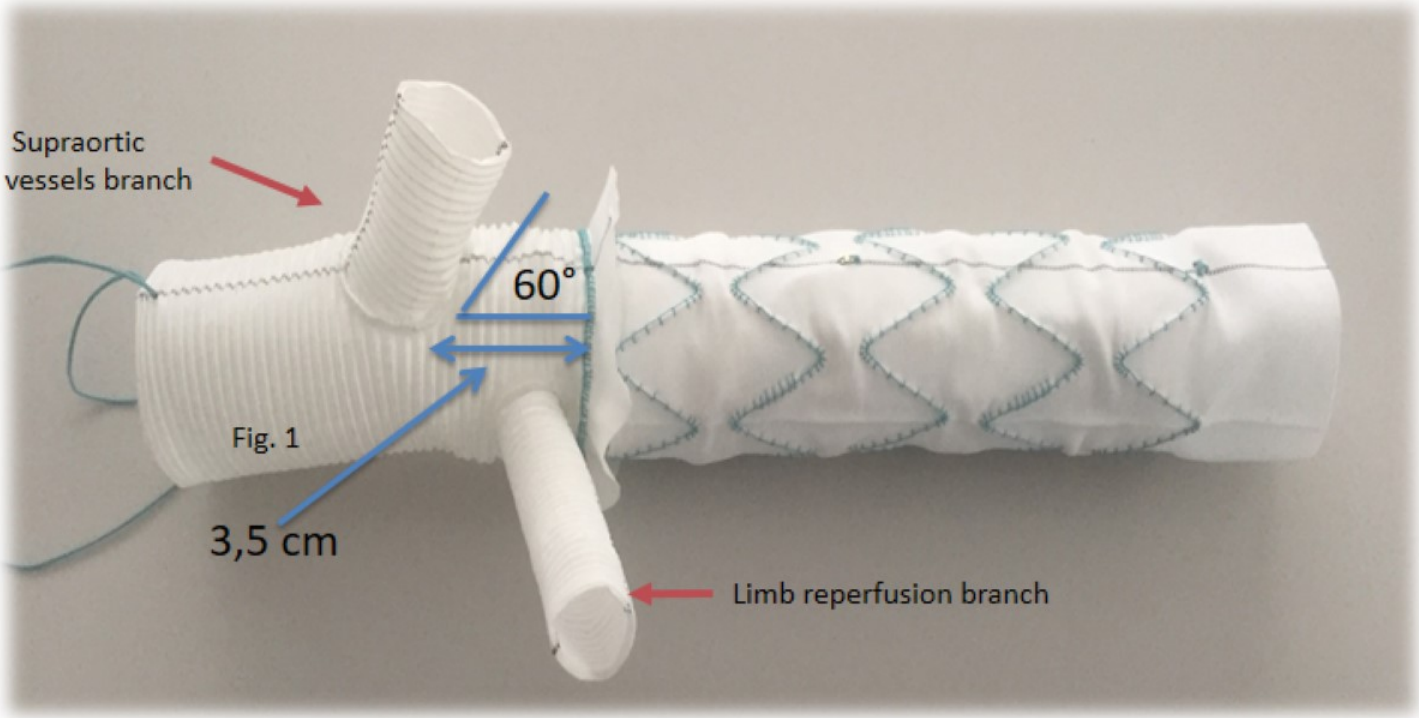
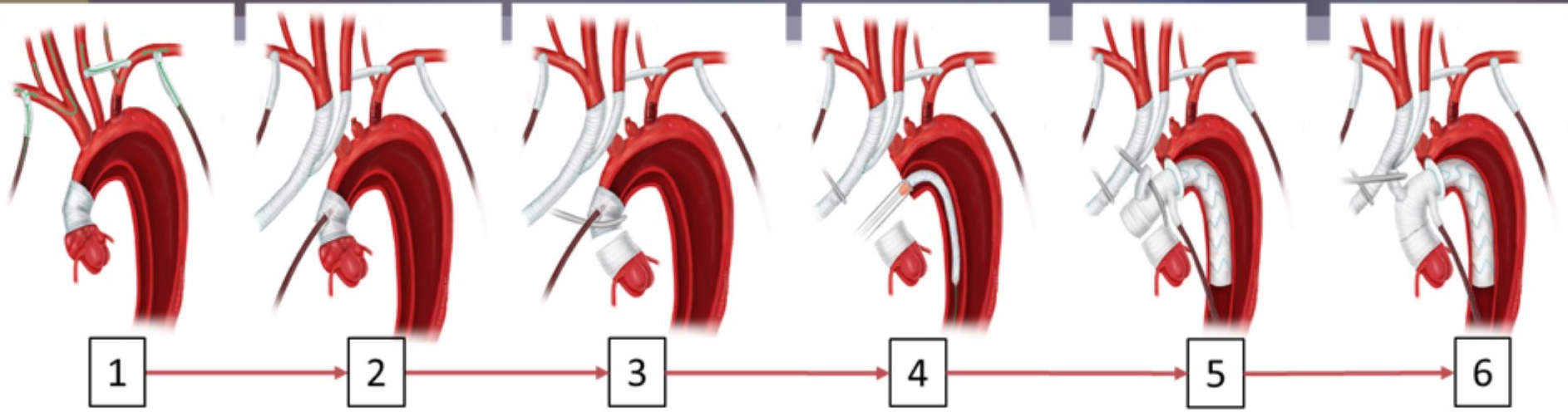


Fig. 1

Methods



1. Bilateral axillary cannualation and perfusion through the subclavian bypass performed 20/30 days before arch surgery (37°C)
2. On pump Zone 0-1 debranching of innominate and left common carotid artery (beating heart surgery after central aortic cannulation) (37°-32°C)
3. Ascending aorta clamping: cardioplegia and proximal cardiac procedure (32°-28°C)
4. Over-the-wire FET deployment under spinal cord and visceral ischemia (28°C)
5. Distal reperfusion with antegrade flow through the dedicated side-branch (28°-32°C)
6. Supraortic vessels debranching reimplant on beating-heart (32°-37°C)

Standard F.E.T. versus D.F.T

OSR Experience (2009-2018): 19/24 cases

Island technique	min/ time
Median CPB	196 (180-240)
Antegrade cerebral perfusion	77 (67-90.5)
Limb Ischemia	61 (27-75)
Cardiac ischemia	133 (107-160)

Debrach First Technique	min/ time
Median CPB	165 (147-185)
Antegrade cerebral perfusion	103 (94-120)*
Limb Ischemia	37 (33-45)
Cardiac ischemia	77 (66-108)

- * CONTINOUS CEREBRAL PERFUSION.
- Low CPB time
- Low Limb Ischemia
- Low Cardiac Arrest

Standard F.E.T. versus D.F.T

OSR Experience (2009-2018): 19/24 cases

Island technique	30-day results
Mortality	2 (10,5%)
Major cerebrovascular events	4 (21.0%)
Spinal cord ischemia (permanent)	2 (10,5%)
Renal injury / failure (AKI 2-4)	6 (31,5%)
Respiratory failure	4 (21.0%)
Bleeding (re-exploration)	3 (14,28%)

Debrach First Technique	30-day results
Mortality	0 (0%)
Major cerebrovascular events	0(0)
Spinal cord ischemia (permanent)	0 (0%)
Renal injury / failure (AKI 2-4)	1 (4,1%)
Respiratory failure	1 (4,1%)
Bleeding (re-exploration)	3 (12,5 %)

* 3 patiets with transient paraplegia. At the discharge to complete restitutio ad integrum

With the use of the Debrach First Technique
- Low mortality
- Low Cerebrovascular events
- Low Cord Ischemia

Conclusions

- Safe and feasible with this new custom-made graft
- Debranch-first with bilateral axillary cannulation allows:
  - Continuous cerebral perfusion at T > 28° (No Standard Cerebral Arrest Time)
  - No direct supraortic vessels cannulation
  - Zone 0-1 distal anastomosis
- Low spinal cord and visceral ischemic time
- Low cardiac ischemic time
- Comparative studies needed to investigate possible clinical advantages


Thank you