



YONSEI
UNIVERSITY

Tips for Aortic Surgery Video TARFET

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Severance
SINCE 1885



Disclosures

I have nothing to disclose

TARFET

(Total Arch Replacement and Frozen Elephant Trunk)

✓E-vita OPEN NEO (JOTEC)

Zone 1-2-3

Single vessel/anastomosis

Zone 0-1

Single vessel anastomosis



Branched



Trifurcated

Branch Specifications

	Ø	Length
Branch BCT	12 mm	min. 100 mm
Branch LCCA	8 mm	min. 100 mm
Branch LSA	10 mm	min. 100 mm

TARFET

(Total Arch Replacement and Frozen Elephant Trunk)

✓ E-vita OPEN NEO (JOTEC)

Branched



Catalog Number	Ø Vascular Graft Part	Ø Stent Graft Part	Length Stent Graft Part
95HG2622L120-C02	26	22	120
95HG2624L120-C02	26	24	120
95HG2624L175-C02	26	24	175
95HG2626L120-C02	26	26	120
95HG2626L180-C02	26	26	180
95HG2828L120-C02	28	28	120
95HG2828L180-C02	28	28	180
95HG3030L120-C02	30	30	120
95HG3030L180-C02	30	30	180
95HG3033L130-C02	30	33	130
95HG3033L180-C02	30	33	180
95HG3036L130-C02	30	36	130
95HG3036L180-C02	30	36	180
95HG3040L130-C02	30	40	130
95HG3040L180-C02	30	40	180

Trifurcated



Catalog Number	Ø Vascular Graft Part	Ø Stent Graft Part	Length Stent Graft Part
95HG2624L175-C03	26	24	175
95HG2626L180-C03	26	26	180
95HG2828L180-C03	28	28	180
95HG3030L180-C03	30	30	180
95HG3033L180-C03	30	33	180
95HG3036L180-C03	30	36	180
95HG3040L180-C03	30	40	180

Sizes in italics are available on demand

TARFET

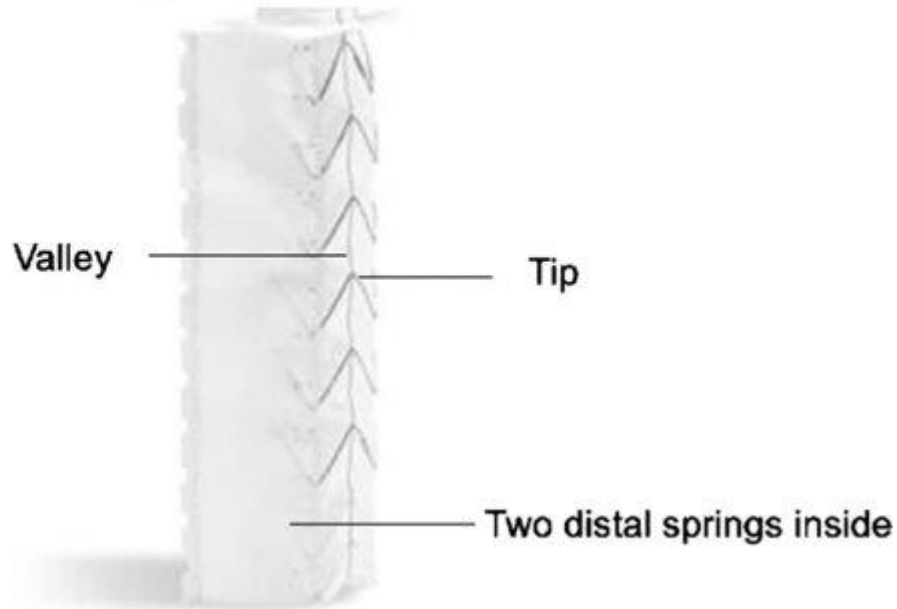
(Total Arch Replacement and Frozen Elephant Trunk)

✓ E-vita OPEN NEO (JOTEC)

E-vita open PLUS



E- VITA OPEN NEO
Better alignment to curved structures



Tips for E-vita OPEN NEO

- ✓ Distal anastomosis
- ✓ Graft oozing/sweating
- ✓ Stent graft sizing
 - ✓ Diameter
 - ✓ Length
- ✓ Cerebral protection / Spinal cord ischemia

42 cases E-vita OPEN NEO

Operative details	N=42
Cannulation site (Axillary)	42 (100)
Operation time (min)	332 [302.3-369]
CPB time (min)	192 [170-224.8]
ACC time (min)	138 [129-160]
Lower body ischemic time (min)	54 [47-60]
Distal anastomosis	
Zone 2	38 (90.5)
Zone 3	4 (9.5)
Wire use	6 (14.3)
CSF drain	2 (4.8)
Cerebral perfusion strategy	
Unilateral	7 (16.7)
Bilateral	11 (26.2)
Tri	24 (57.1)

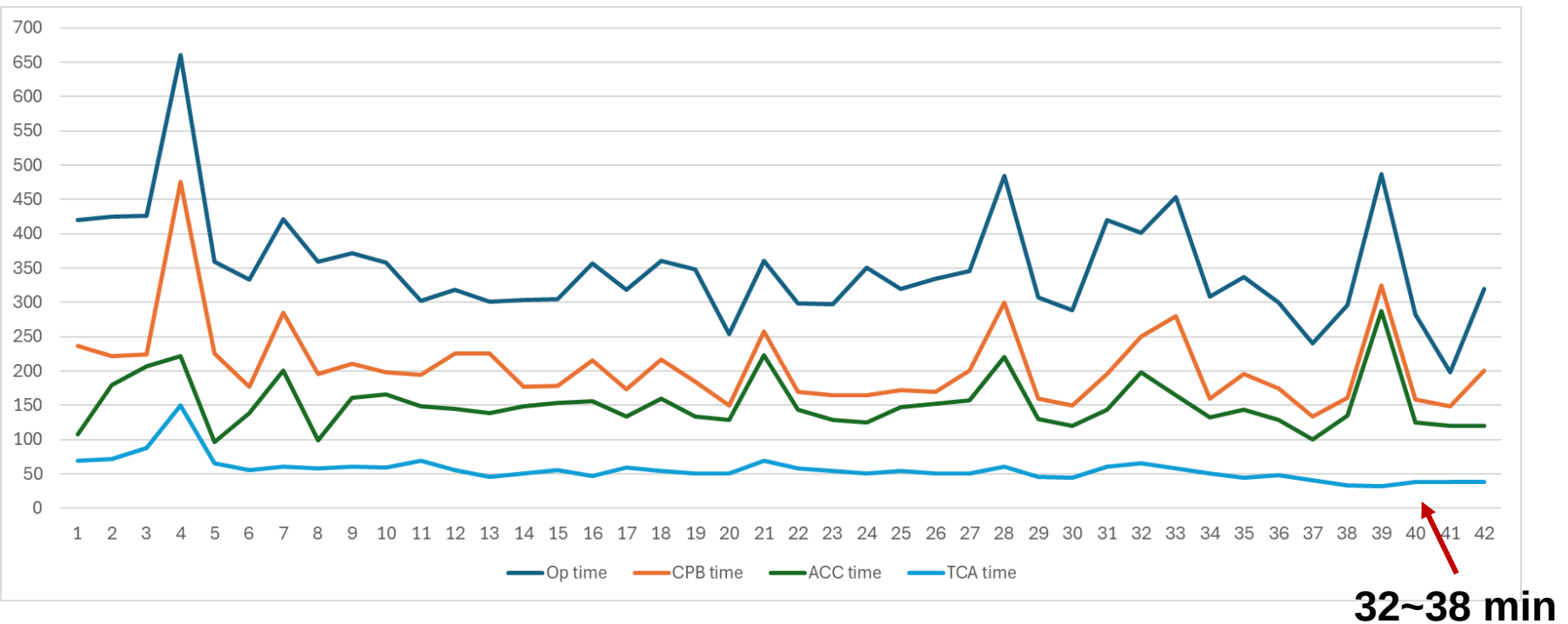
42 cases E-vita OPEN NEO

Operative details	N=42
Marfan SD	2 (4.8)
Redo-sternotomy	2 (4.8)
Pathology	
Acute dissection	11 (26.2)
Chronic dissection	9 (21.4)
Degenerative aneurysm	20 (47.6)
Ruptured aneurysm	1 (2.4)
Ruptured dissection	1 (2.4)
Other procedure	
VSARR	2 (4.8)
AV repair	3 (7.1)
TAP	1 (2.4)
Additional Zone 4 TEVAR	2 (4.8)
Lt vertebral artery reimplantation	3 (7.1)

42 cases E-vita OPEN NEO

Operative outcomes	N=42
30 day mortality	1 (2.4)
In-hospital mortality	2 (4.8)
Reoperation for bleeding	1 (2.4)
Stroke	1 (2.4)
Spinal cord ischemia	2 (4.8)
temporary	1 (2.4)
permanent	1 (2.4)
Hemodialysis/CRRT	1 (2.4)
ECMO	1 (2.4)
Pneumonia	0 (0)
Sepsis	1 (2.4)
Bowel ischemia	1 (2.4)

42 cases E-vita OPEN NEO



TCA time > ACC time > CPB time > operation time

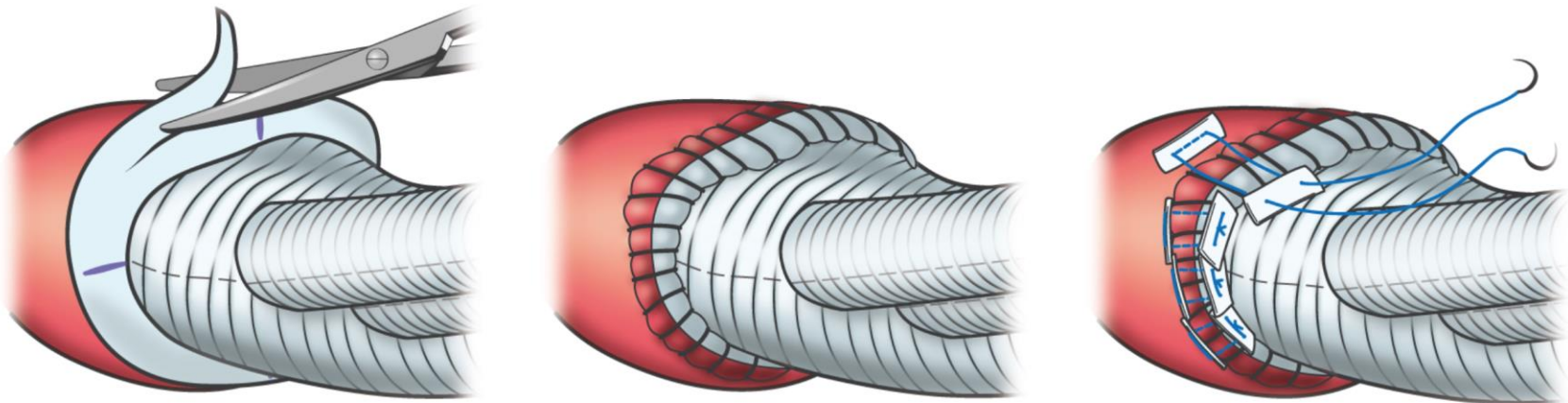
TARFET

**(Total Arch Replacement and Frozen Elephant Trunk)
Distal anastomosis**

- ✓ **Zone 2 > Zone 3**
 - ✓ **Vocal cord palsy (-)**
 - ✓ **Fast and Easy distal anastomosis**

TARFET

(Total Arch Replacement and Frozen Elephant Trunk)
Distal anastomosis

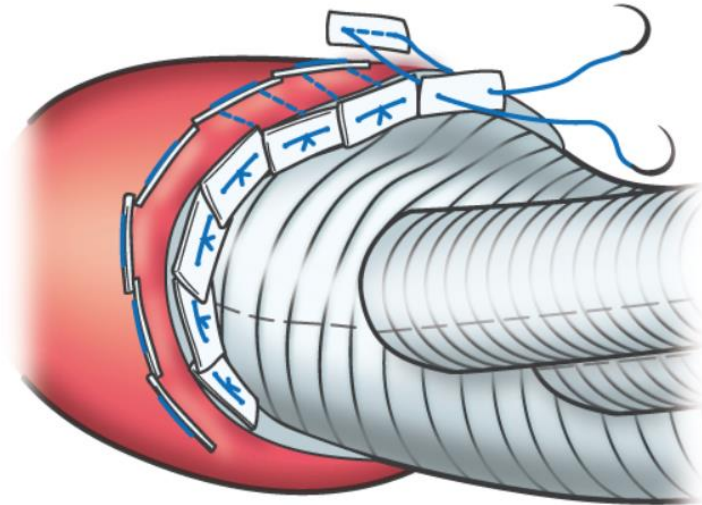
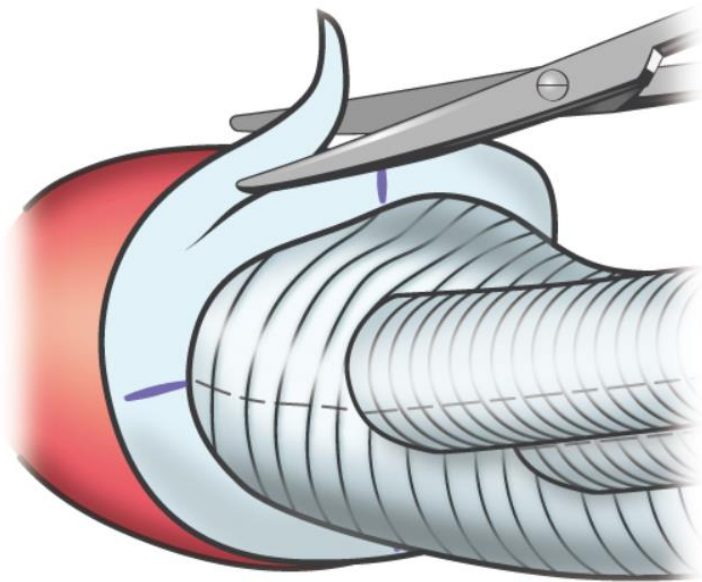


eyeji

Continuous + Interrupted pledget reinforce
40~60 min

TARFET

(Total Arch Replacement and Frozen Elephant Trunk)
Distal anastomosis



eyeji

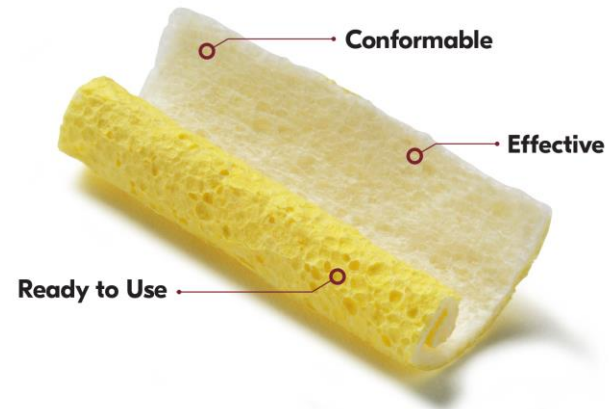
Interrupted pledget suture
30~40 min

TARFET

(Total Arch Replacement and Frozen Elephant Trunk)
Graft oozing/sweating

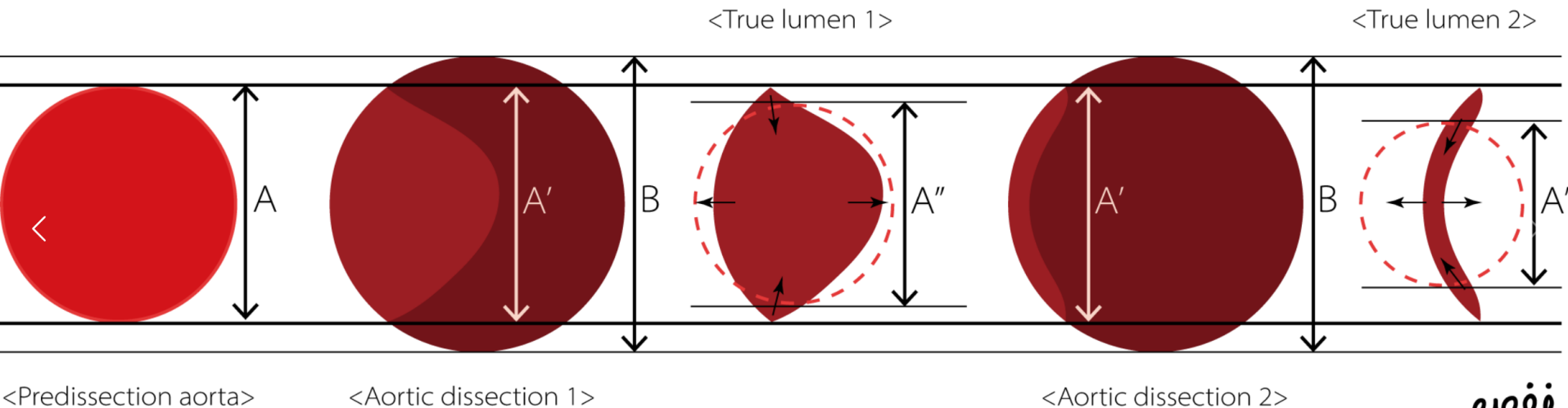


- ✓ Wait
 - ✓ Protamine
 - ✓ Plt , FFP transfusion
- ✓ Use tacoshil



TARFET

(Total Arch Replacement and Frozen Elephant Trunk) Stent graft sizing –dissection

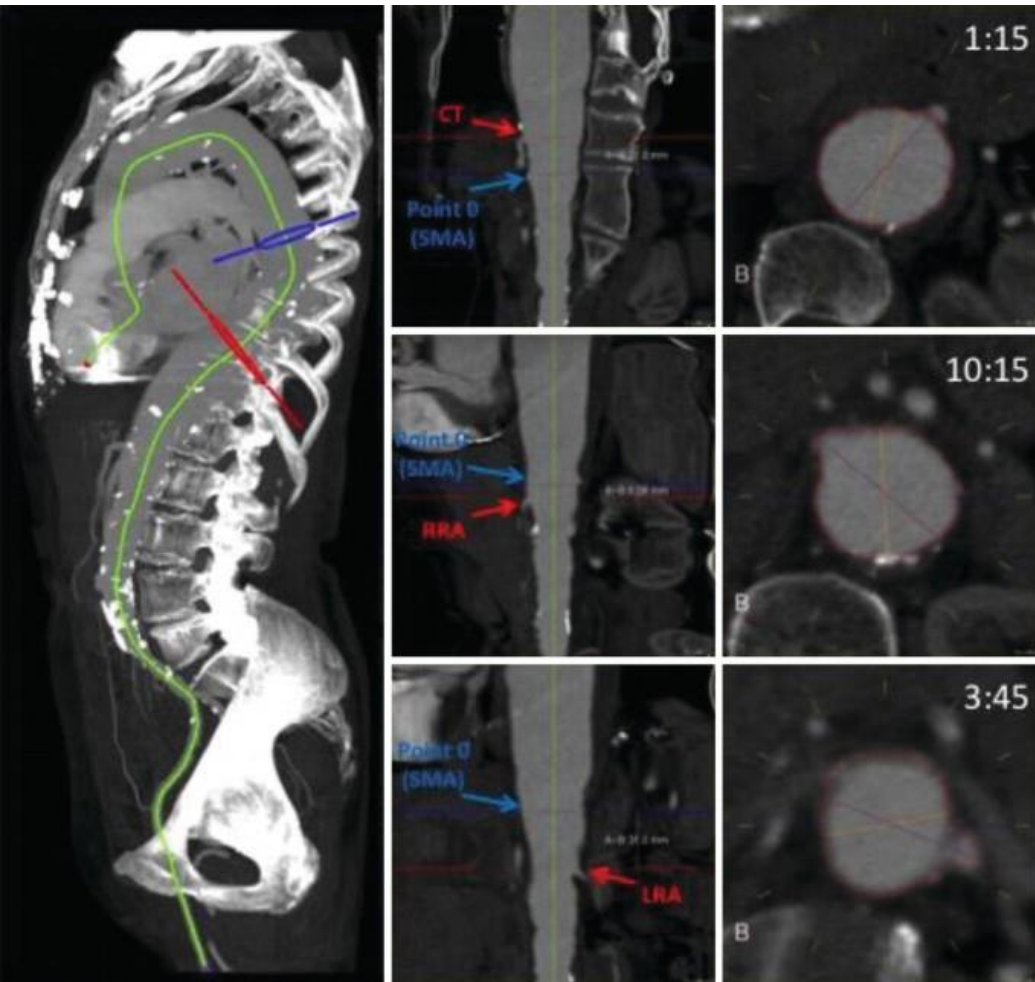


eyeji

- ✓ **Dissection**
 - ✓ Perimeter based Stent diameter
 - ✓ 0~10% over sizing or +2
- ✓ **Aneurysm**
 - ✓ Longest diameter 10~20% oversizing

TARFET

(Total Arch Replacement and Frozen Elephant Trunk) Stent graft Length



- ✓ MPR image (centerline based)
- ✓ Acute dissection
 - ✓ 120cm
- ✓ Chronic dissection
 - ✓ Communication channel
 - ✓ TL size
- ✓ Degenerative aneurysm
 - ✓ Extensiveness of aneurysm

TARFET

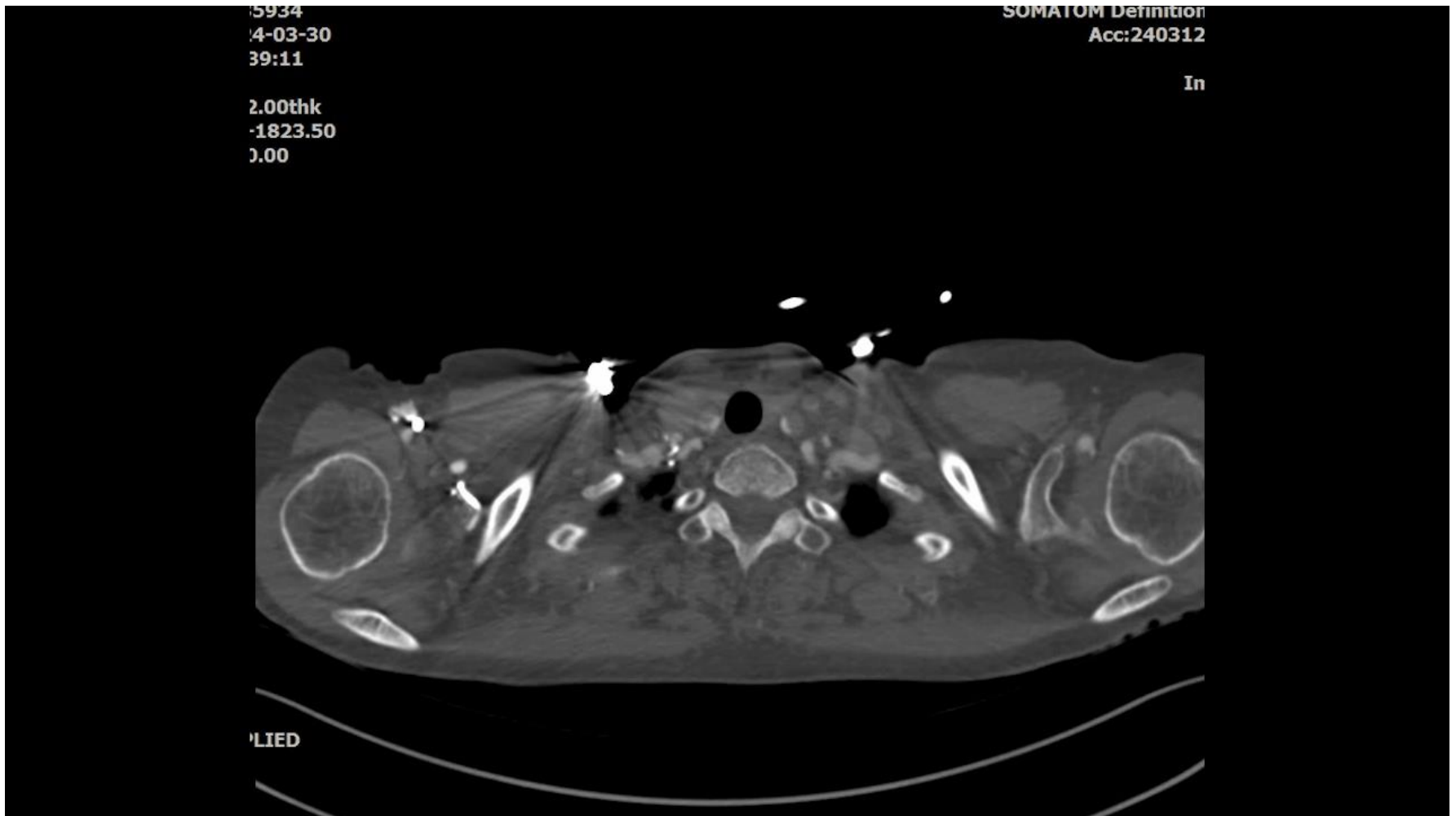
**(Total Arch Replacement and Frozen Elephant Trunk)
Cerebral and spinal cord ischemia**

- ✓ **Anastomosis sequence**
 - ✓ **Distal – LSA-LCCA-Proximal –RIA**
- ✓ **Bi or Tri cerebral perfusion > Uni**
 - ✓ **~ 10ml/min/kg**
- ✓ **High risk for spinal cord ischemia**
 - ✓ **CSF drain with Tri cerebral perfusion**
 - ✓ **Additional Zone 4 TEVAR , Distal landing zone below T8**
 - ✓ **Previous TAAA/DTA operation**
 - ✓ **Internal iliac artery occlusion**

Case 1

- ✓ **F/39 Marfan SD**
- ✓ **2018 DTA replacement for chronic type B dissecting aneurysm (Outside hospital)**
- ✓ **Root aneurysm with 43mm with follow up**
- ✓ **Acute type A dissection**
- ✓ **Preop TEE**
 - ✓ **Severe AR**

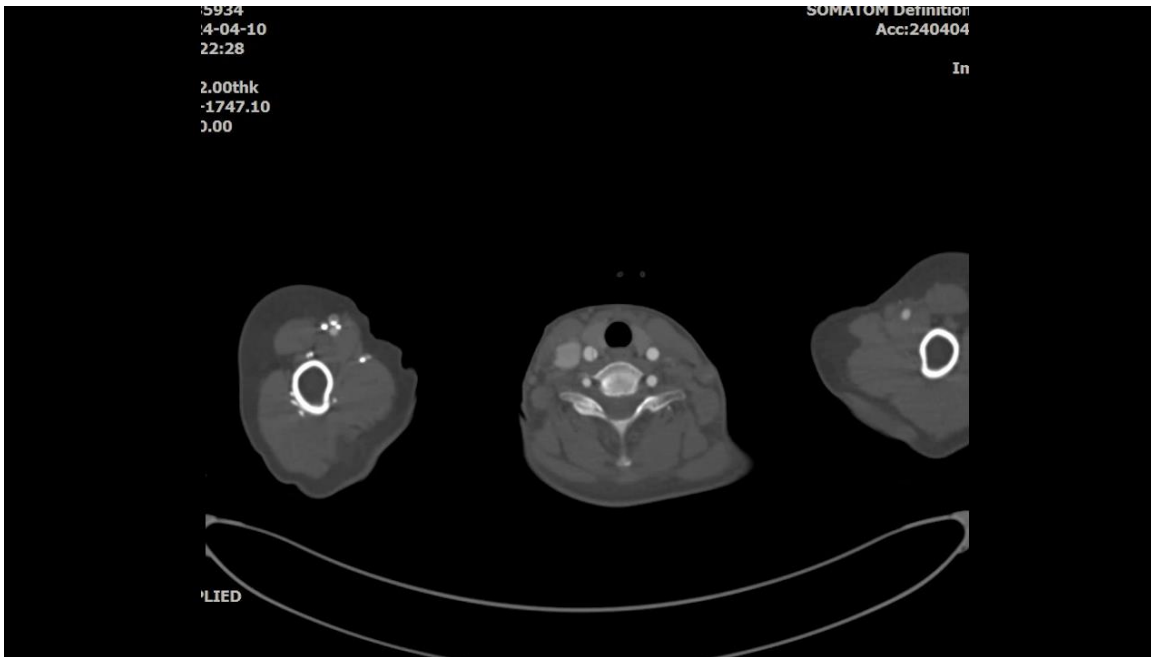
Case 1 preop CT



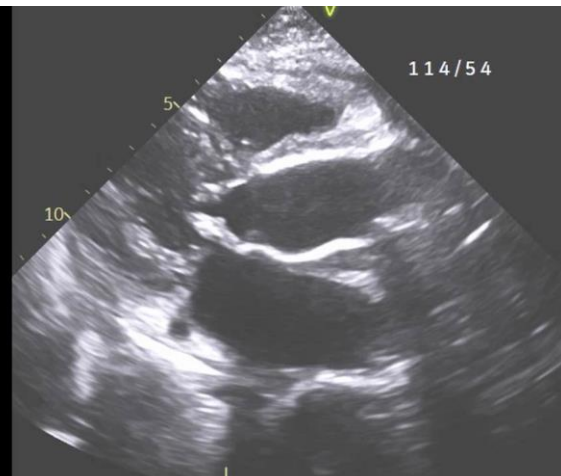
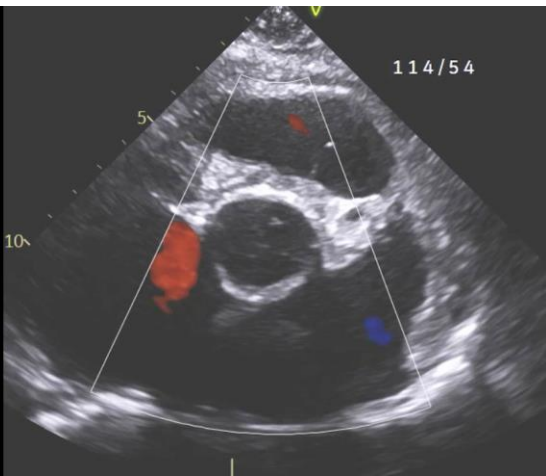
Case 1



Case 1 posop CT



- ✓ Operation time : 468 min
- ✓ CPB time : 324 min
- ✓ ACC time: 287 min
- ✓ TCA time : 32 min
- ✓ Post op AR : trivial
- ✓ POD # 14 Discharge



Case 2

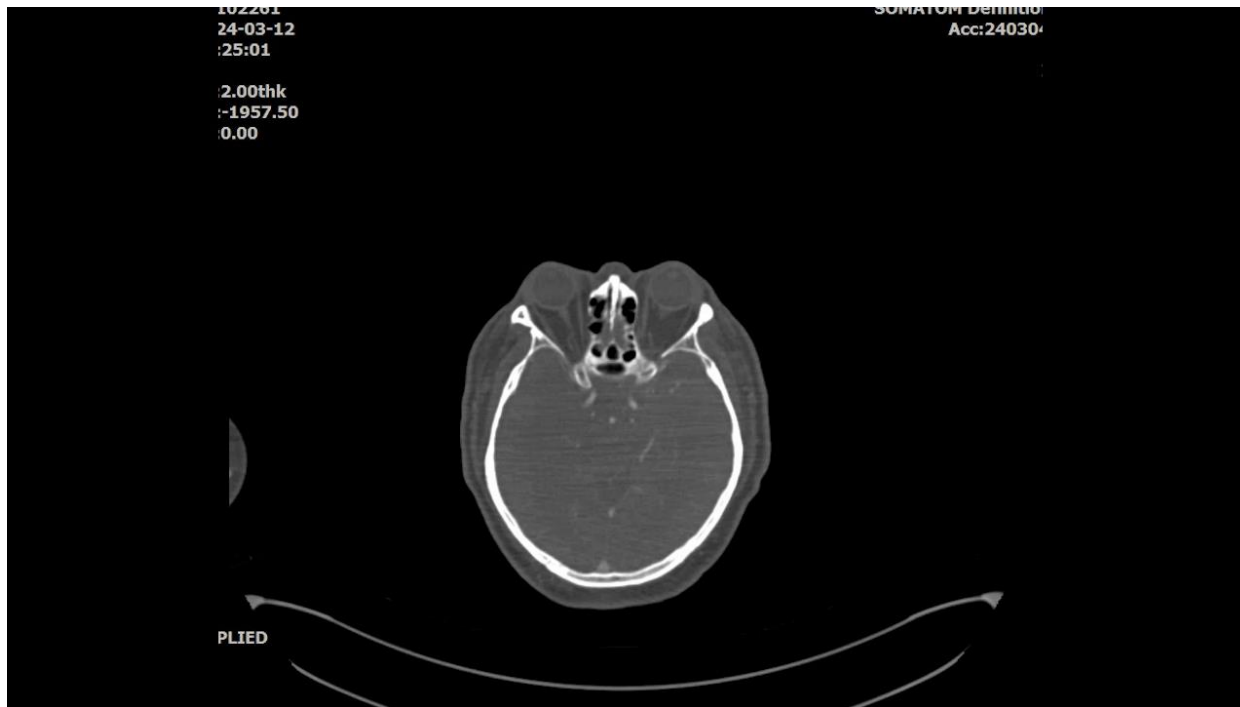
✓ M/54 Arch aneurysm 63mm



Case 2



Case 2 posop CT



- ✓ Operation time : 240 min
- ✓ CPB time : 133 min
- ✓ ACC time : 100 min
- ✓ TCA time : 38 min
- ✓ POD # 9 Discharge

Tips for Aortic Surgery Video TARFET

- ✓ Distal anastomosis
- ✓ Graft oozing/sweating
 - ✓ No problem
 - ✓ Use tachosil
- ✓ Stent graft sizing
 - ✓ Diameter
 - ✓ Not too much oversizing
 - ✓ Additional TEVAR
 - ✓ Length
 - ✓ Shortening
- ✓ Cerebral protection / Spinal cord ischemia
 - ✓ CSF drain
 - ✓ Prefer 120,130 mm length than 180mm
 - ✓ Cerebral perfusion
 - ✓ Lower body ischemic time ↓

Severance

With the Love of God, Free Humankind from Disease and Suffering

