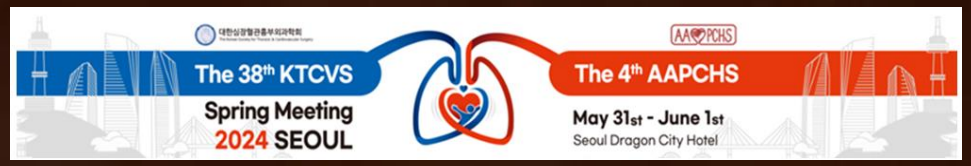


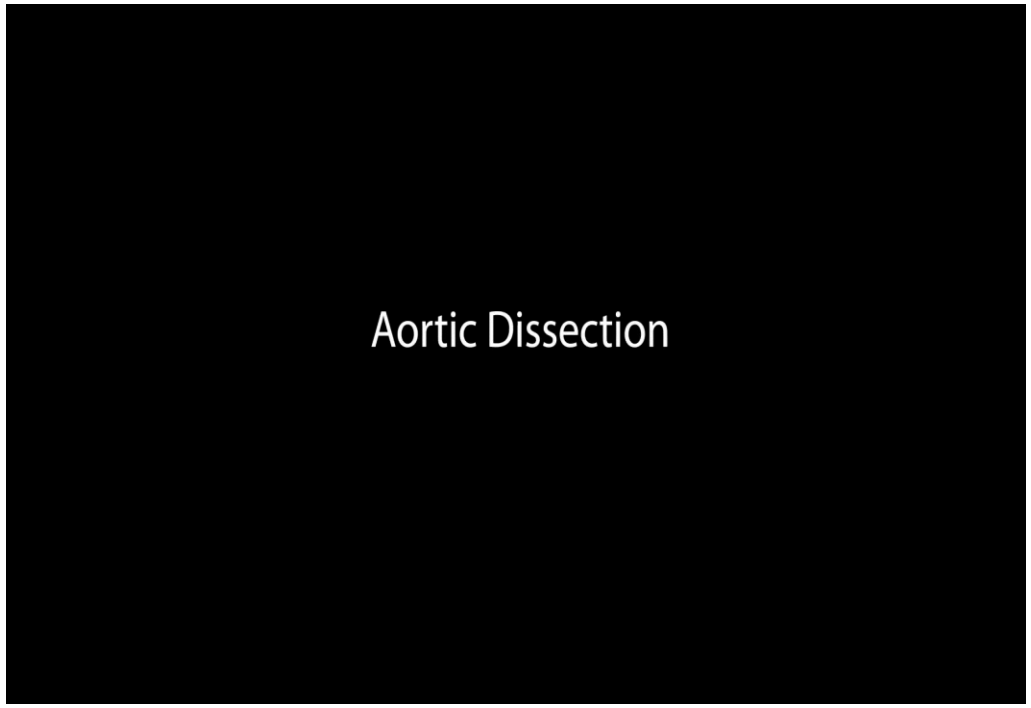
False lumen obliteration technique in acute type A aortic dissection

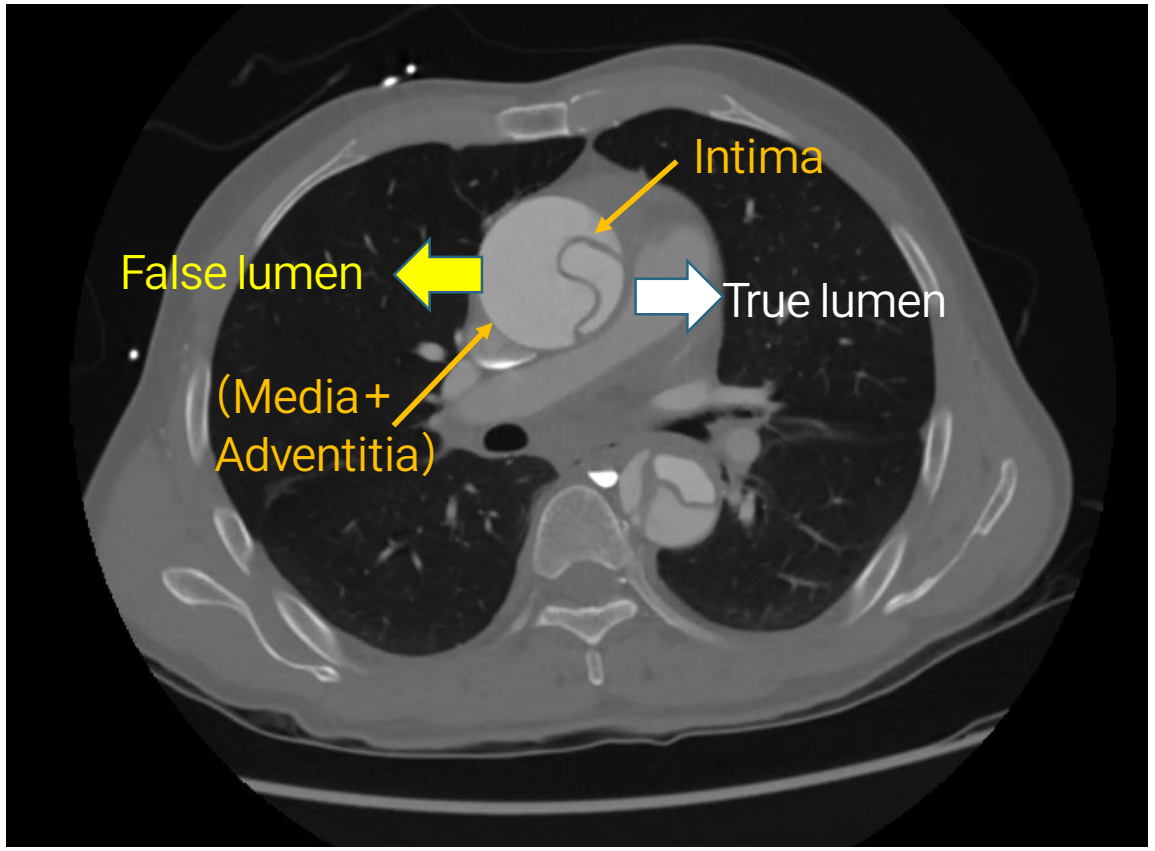
Suryeun Chung

Department of cardiovascular surgery
Samsung Medical Center

Aortic dissection

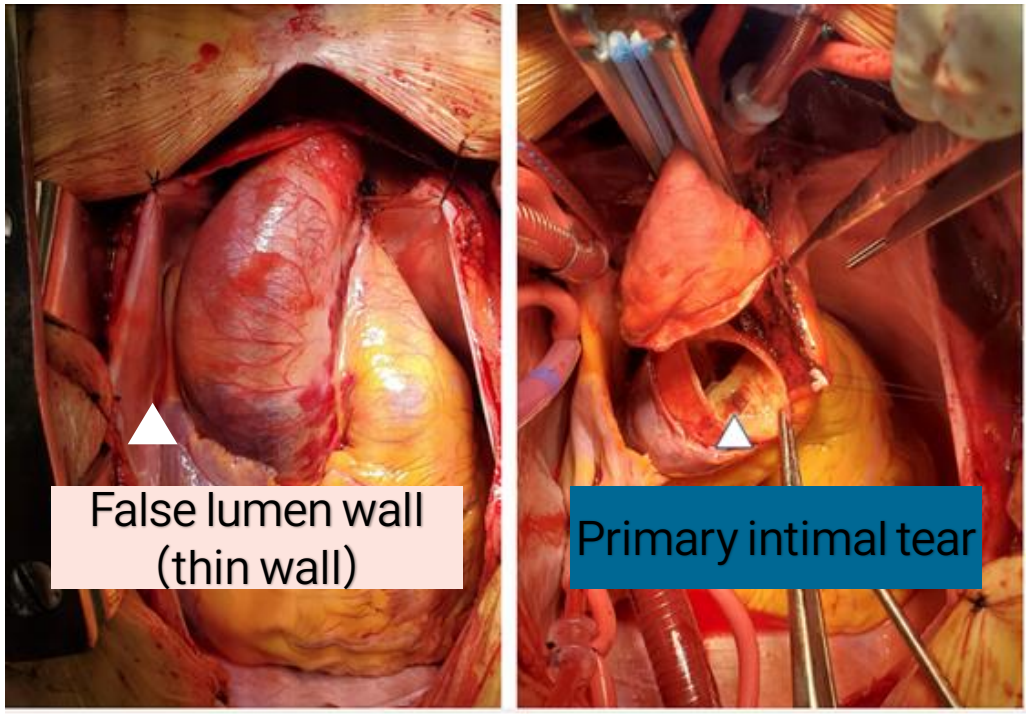
- Aorta intimal injury

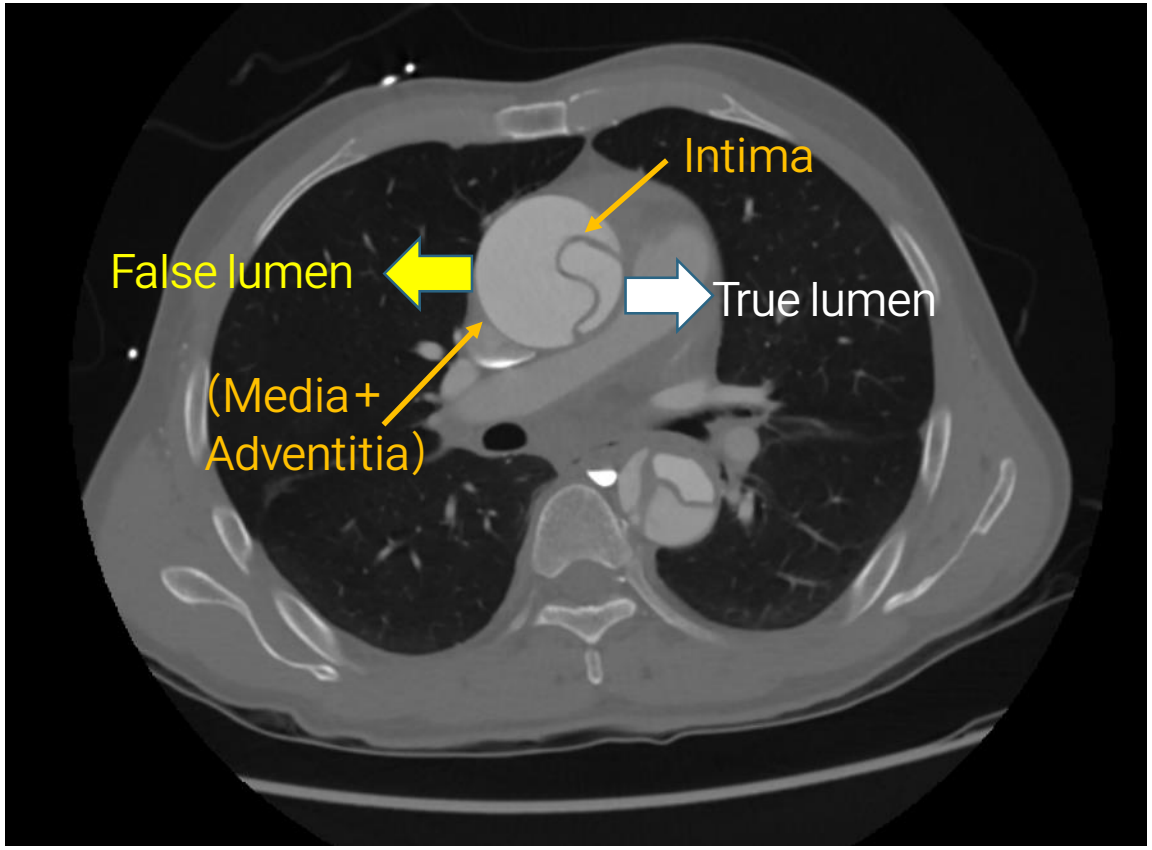




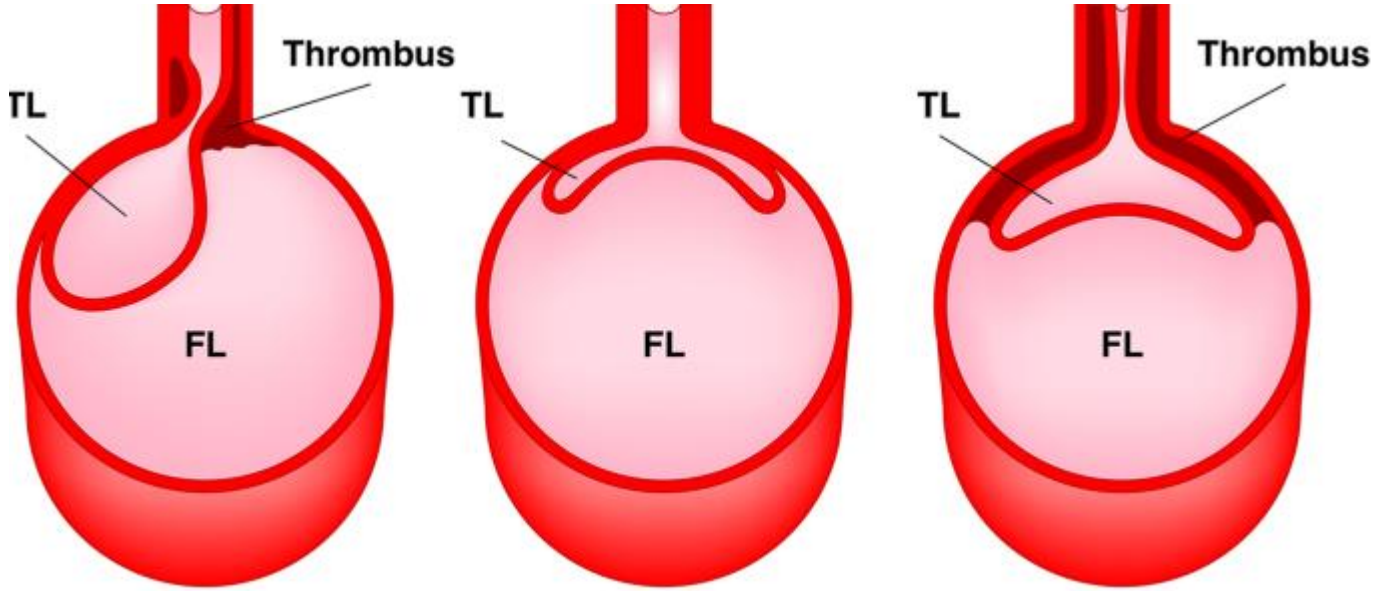
Aortic dissection

- Aorta intimal injury





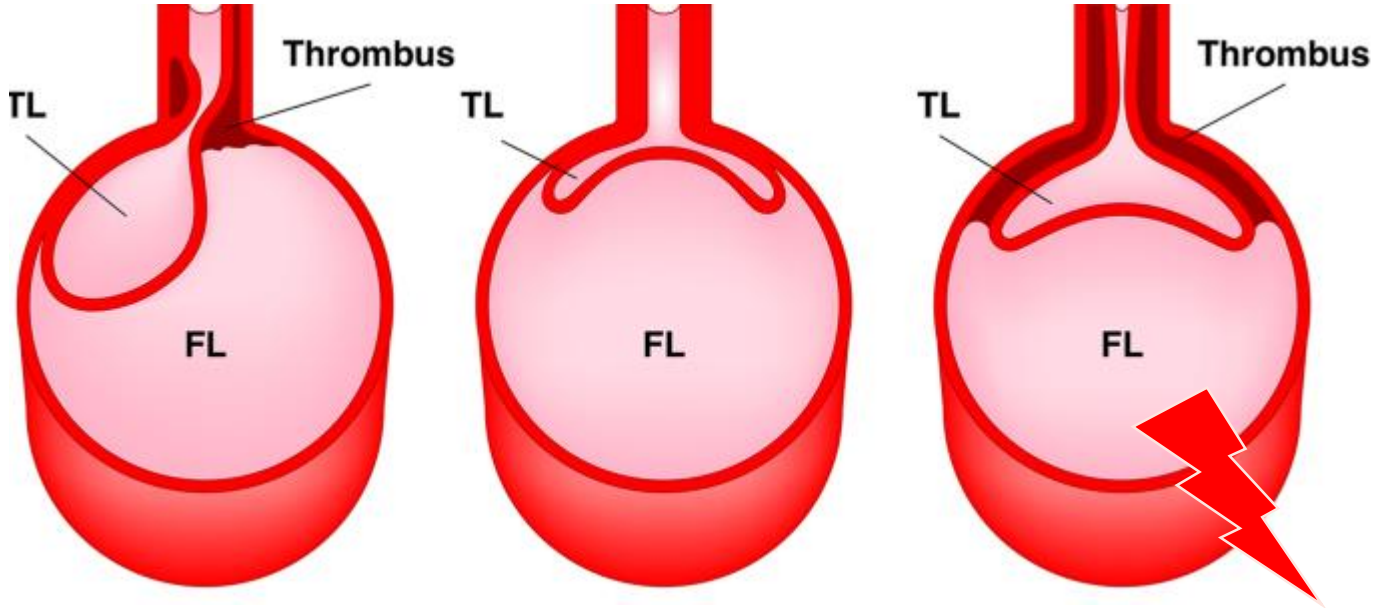
Goal of Aortic dissection surgery



1.Malperfusion

2. Rupture of false lumen

Goal of Aortic dissection surgery



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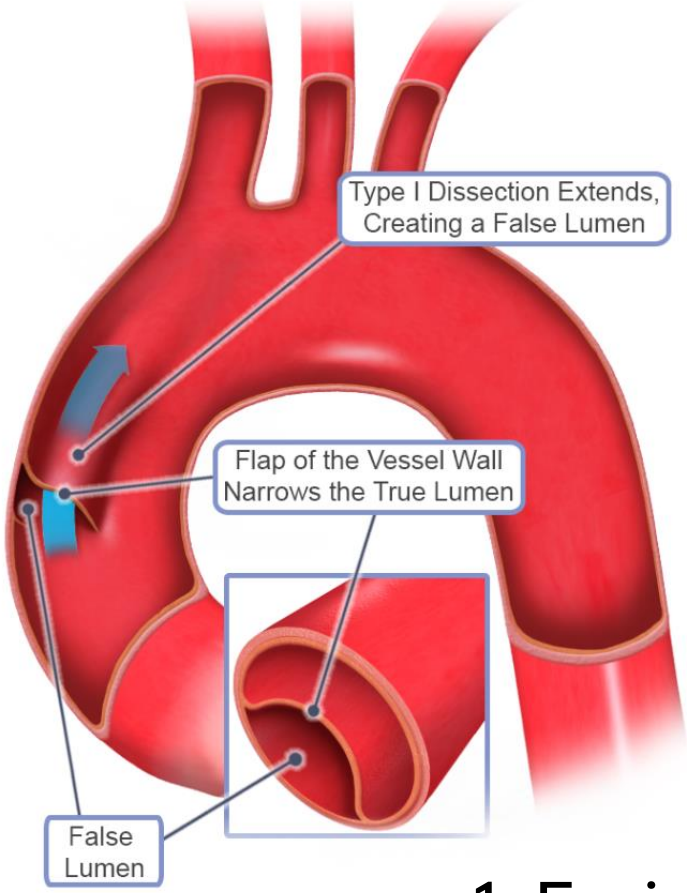
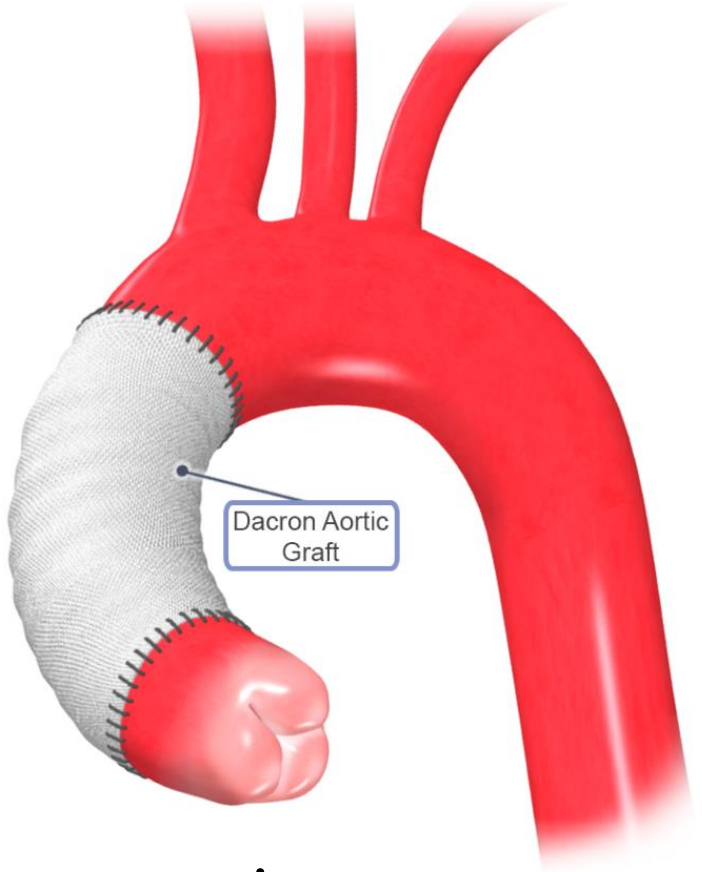
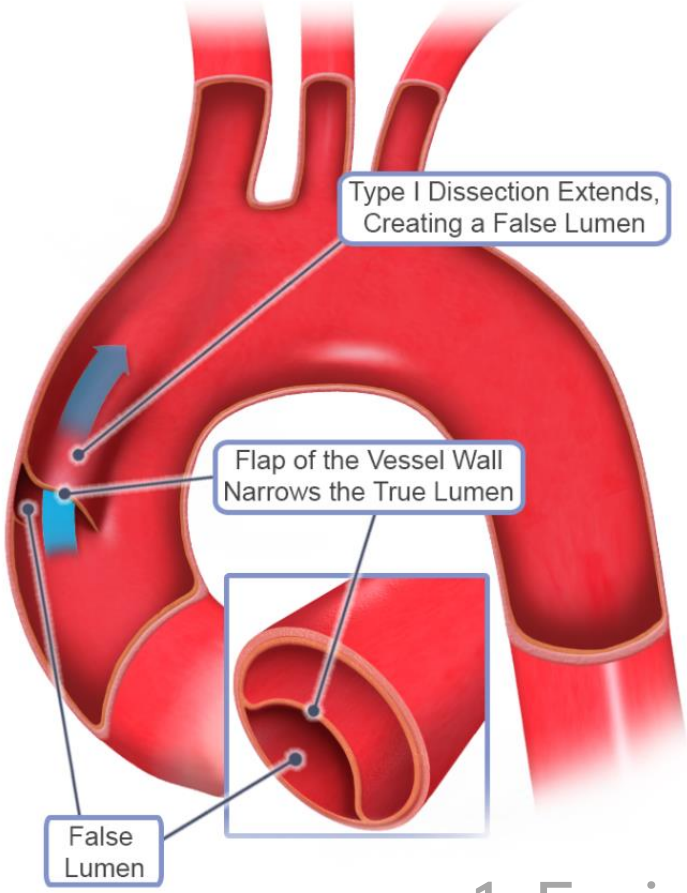
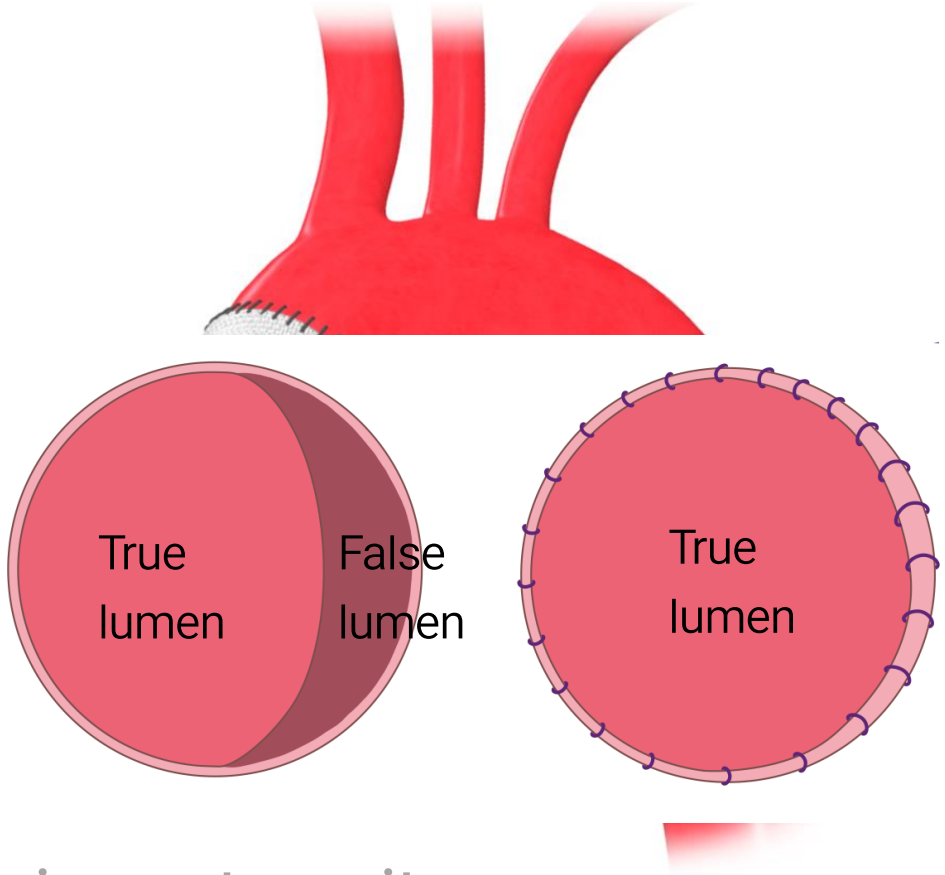




1. Excision of primary tear site
2. False lumen obliteration

Goal of Aortic dissection surgery



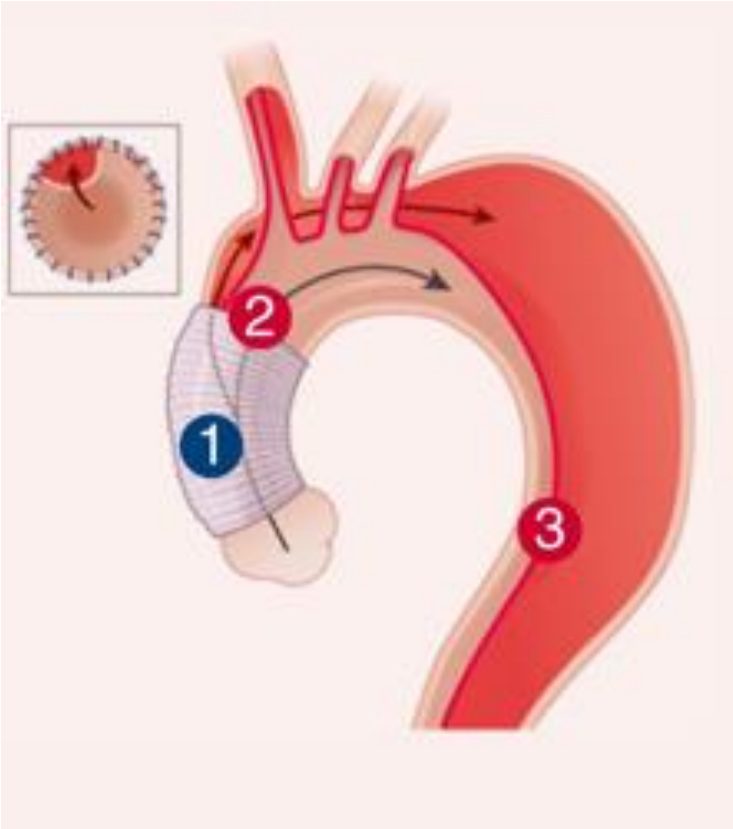


1. Excision of primary tear site

2. False lumen obliteration

Importance of false lumen obliteration

1. Complete hemostasis (prevent uncontrolled bleeding)
2. Thrombosis of false lumen (Positive remodeling)



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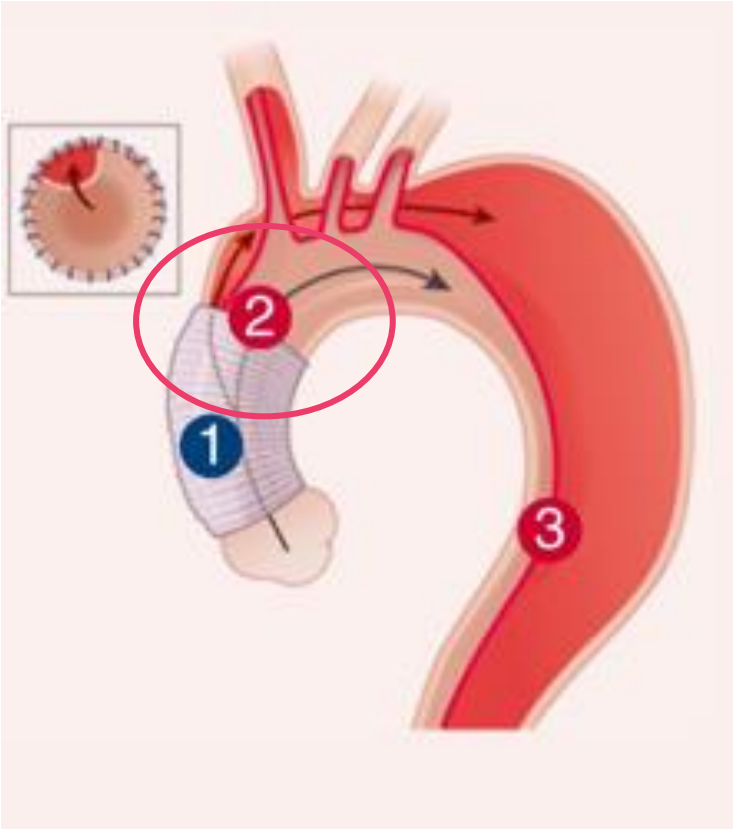


DANE (Distal anastomosis new entry)

- Thin adventitia tear + High pressure flow (without primary tear)

  = uncontrolled bleeding

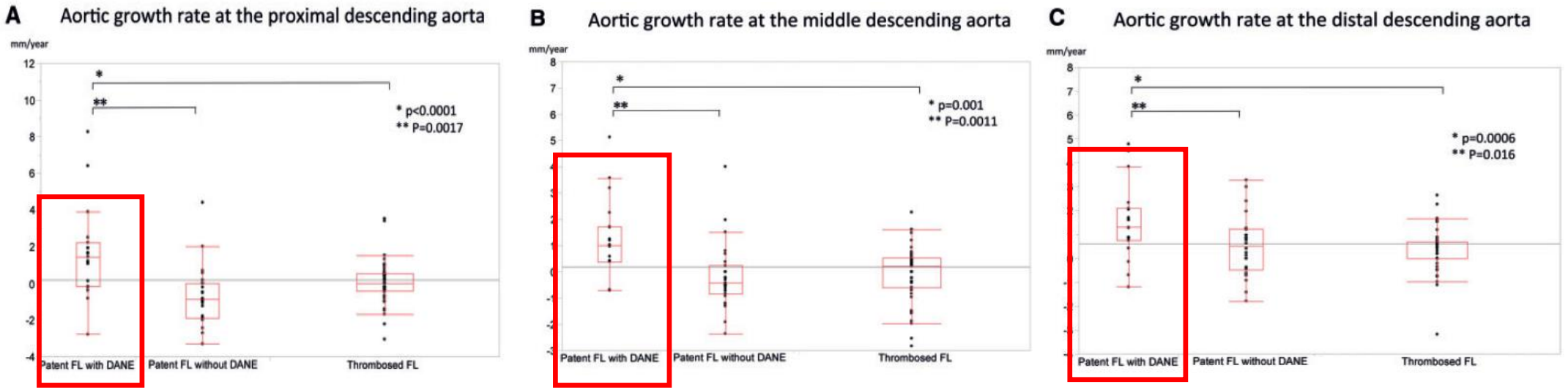
- Risk factor of aortic related event

The impact of DANE after type A dissection repair

- 122 patients with DeBakey type I aortic dissection
- Patency false lumen(PFL) with DANE (n=19)

  vs Patency false lumen (PFL) without DANE (n=27)

  vs Thrombosed FL (n=47)



Euro J Cardio-Thoracic Surg. 20174;52;864-873

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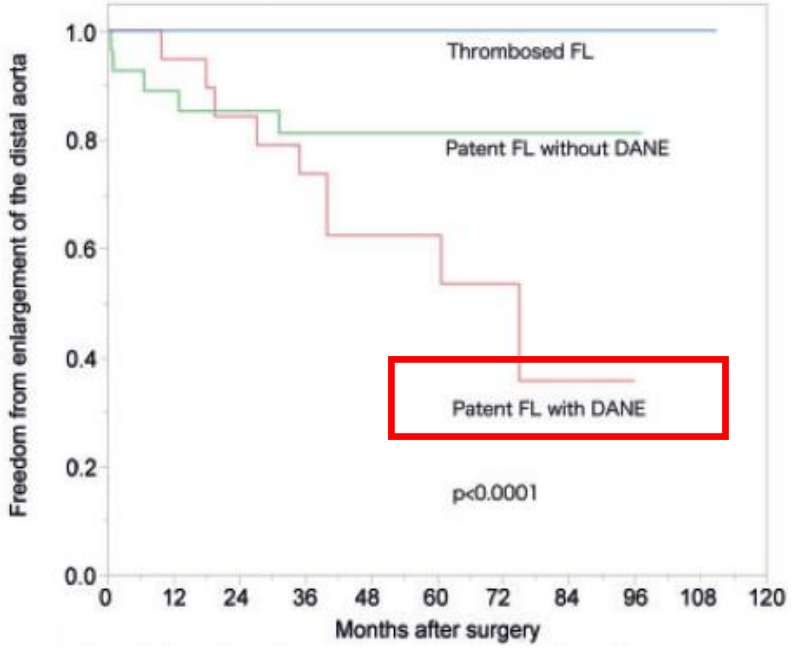

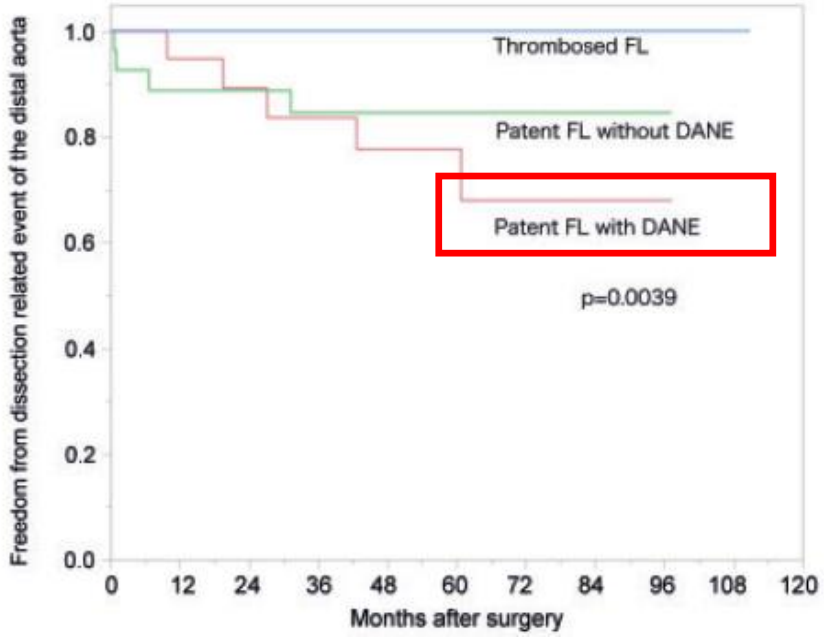

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Importance of false lumen obliteration

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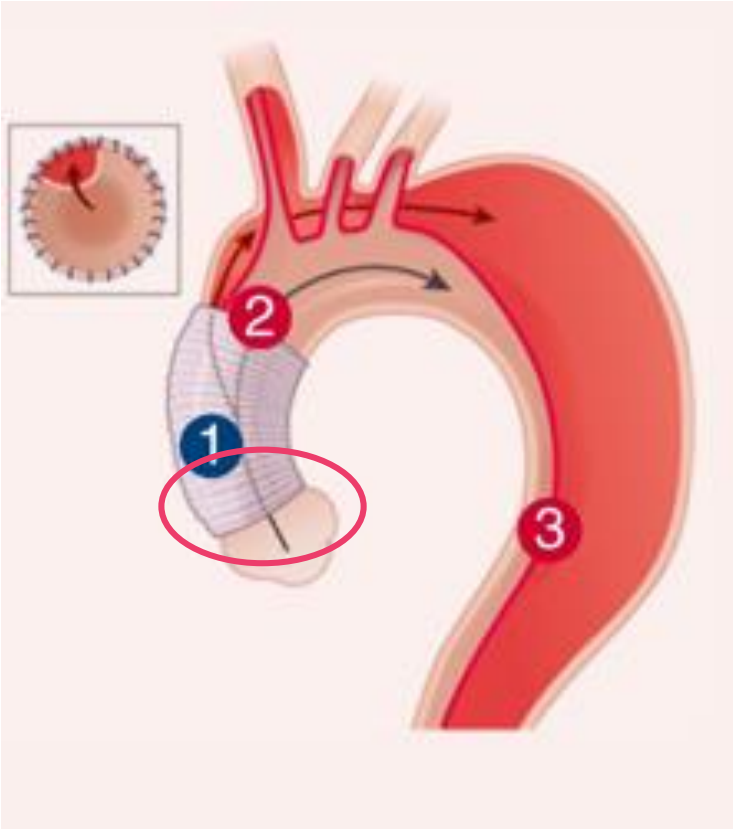


<u>Failure of false lumen obliteration at proximal anastomosis (esp. aortic root)</u>

- Thin adventitia tear + flow pressure without primary tear

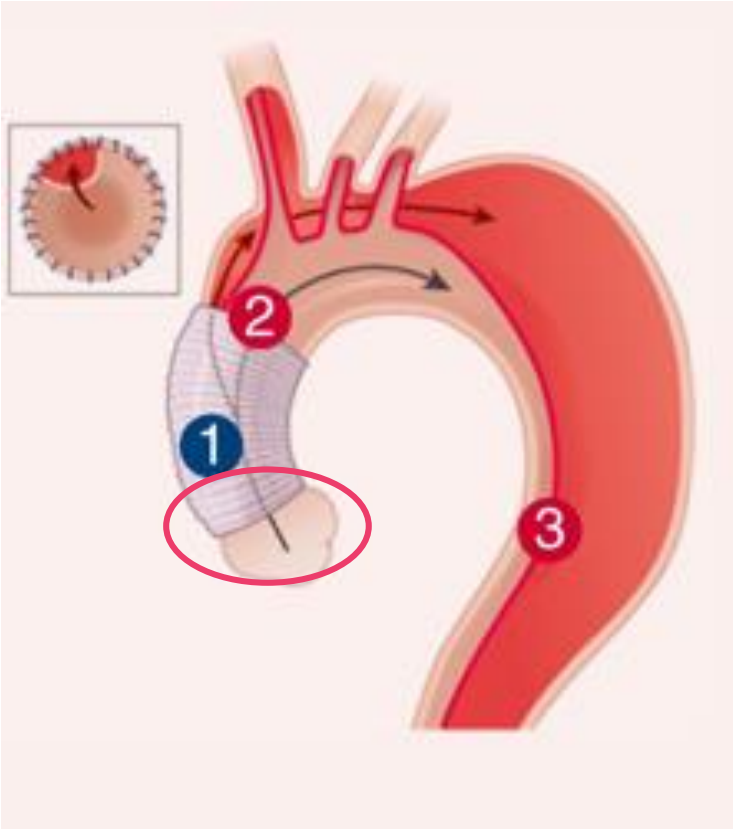
  = > > uncontrolled bleeding

  = > > Root rupture (Catastrophic event)

- Aortic root pseudoaneurysm

Importance of false lumen obliteration

1. Complete hemostasis (prevent uncontrolled bleeding)
2. Thrombosis of false lumen (Positive remodeling)

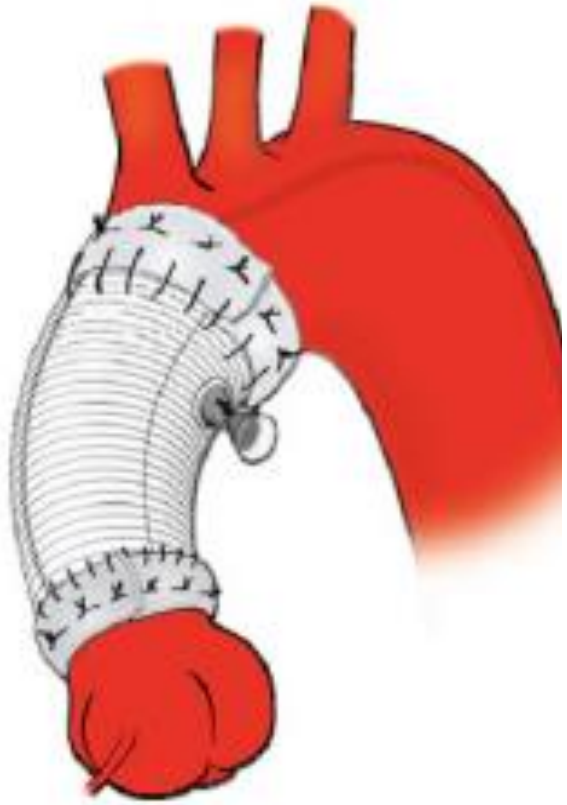


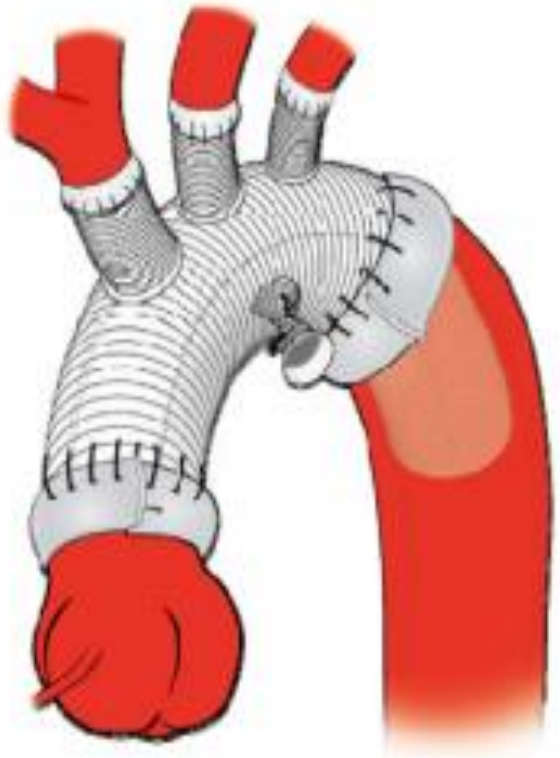
Failure of false lumen obliteration at proximal anastomosis (esp. aortic root) without primary tear

Severe AR with pseudoaneurysm at root (1year after AAD repair)

False lumen obliteration technique

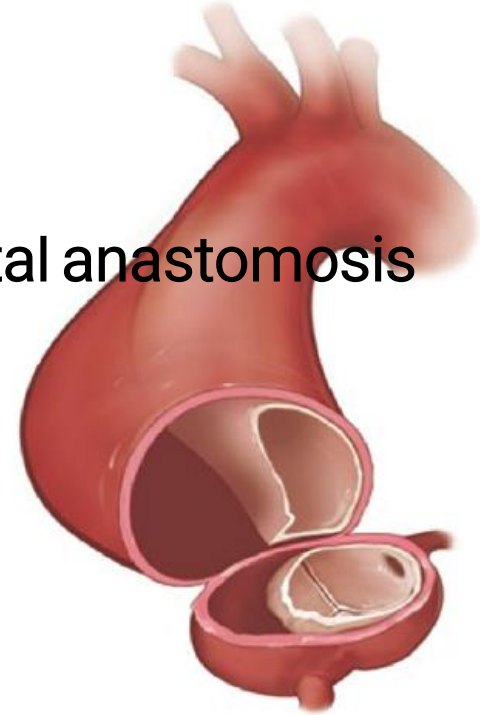
False lumen obliteration site





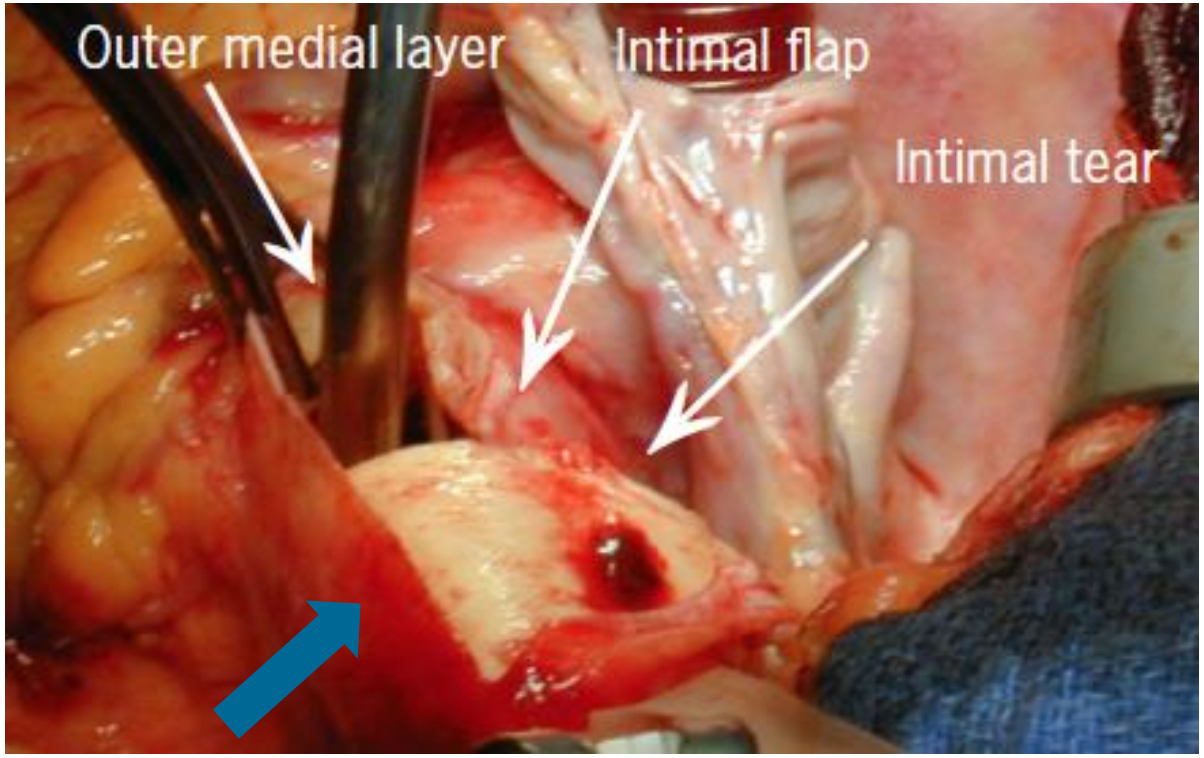
Cerebral vessel branch

Distal anastomosis



Proximal anastomosis
(aortic root)

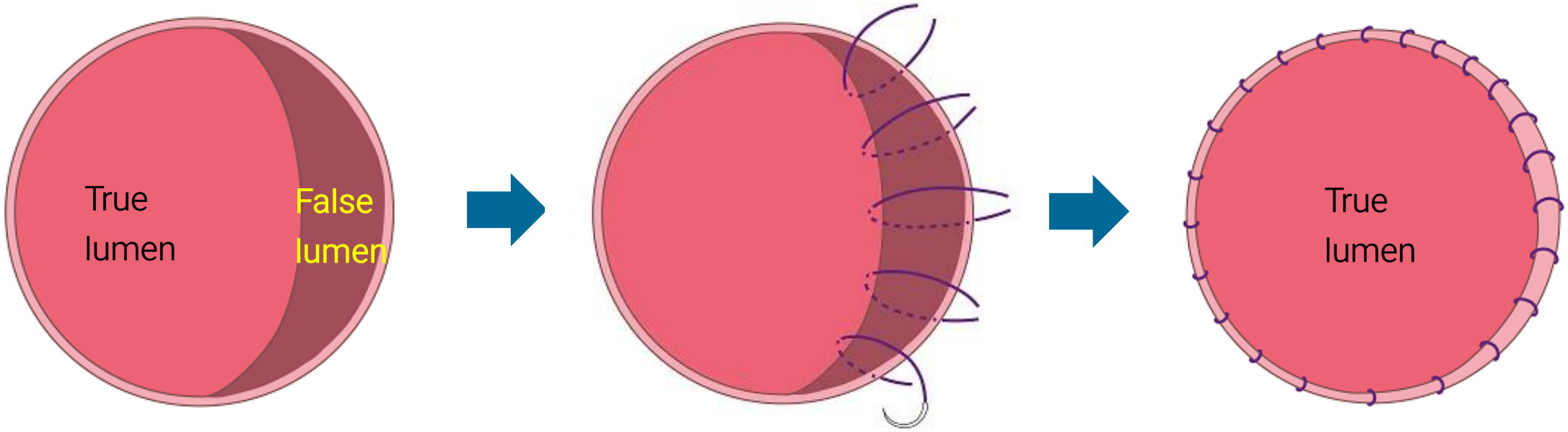
Tips of False lumen obliteration



Adventitia layer of aortic dissection

- Very thin & Fragile
- Gently handling of adventitia
- Avoid over traction and resection

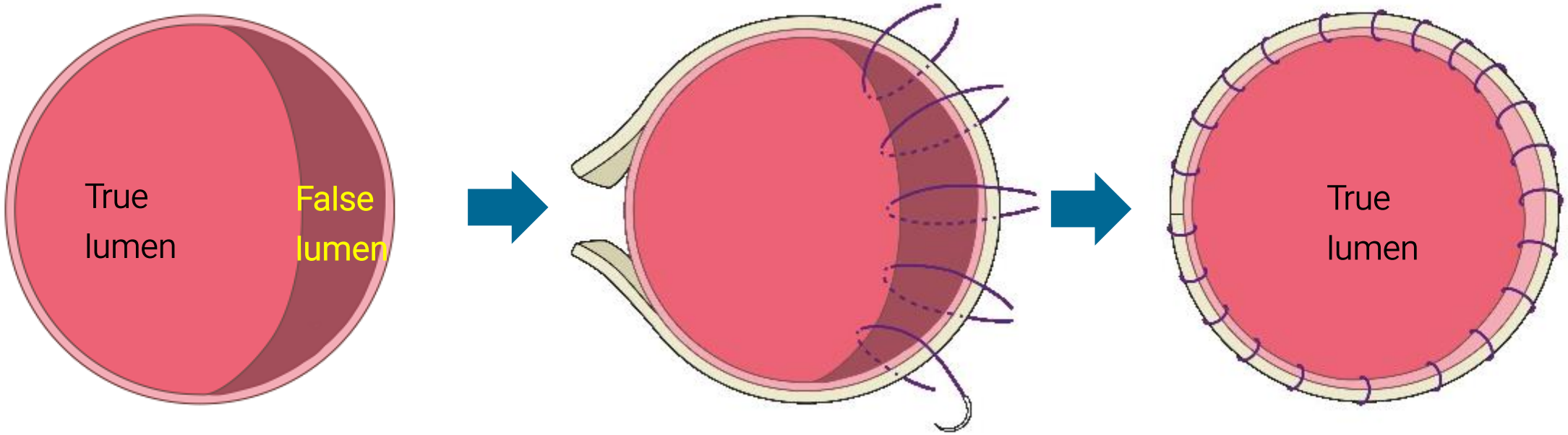
I. Direct false lumen closure



Direct false lumen closure

(4-0 Prolene continuous running suture)

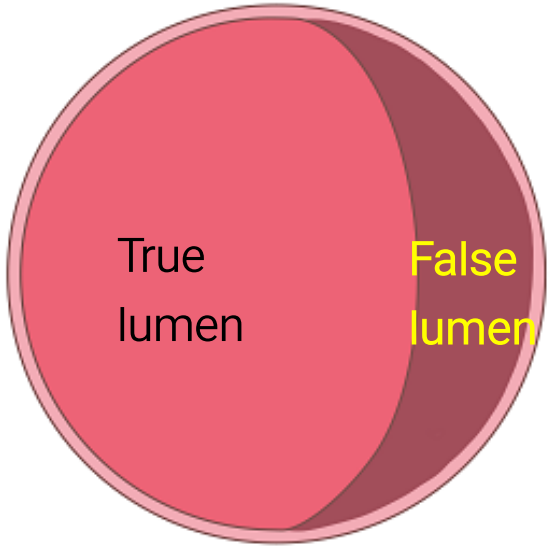
I. Direct false lumen closure (Teflon felt reinforcement)

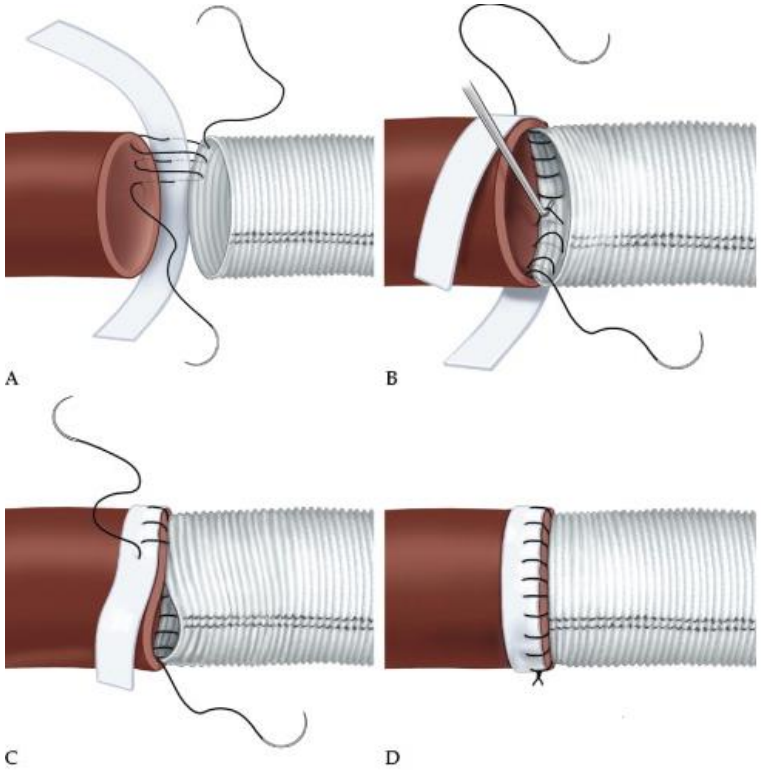


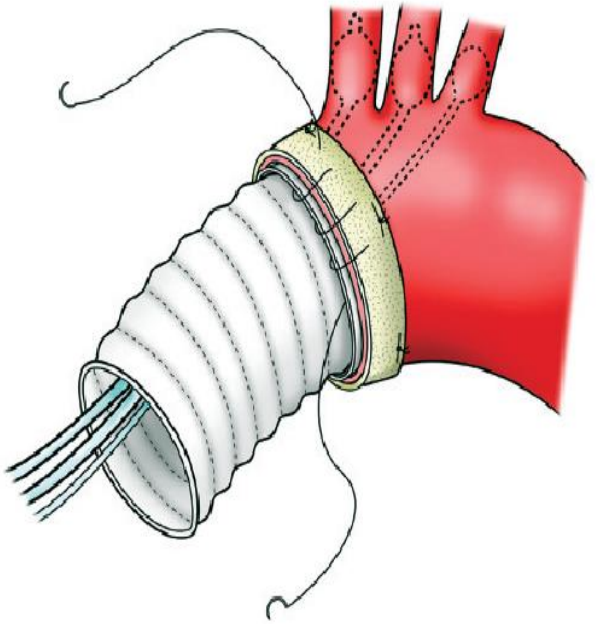
Direct false lumen closure

(Teflon felt reinforcement)

I. Direct false lumen closure (Teflon felt reinforcement)



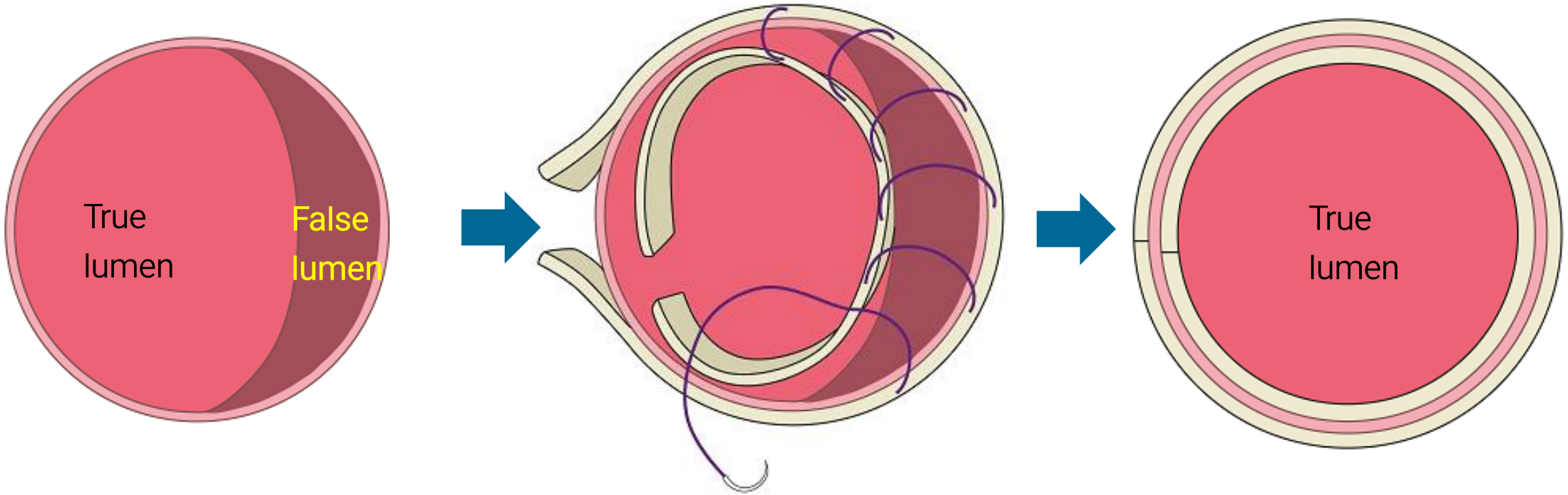




Direct false lumen closure

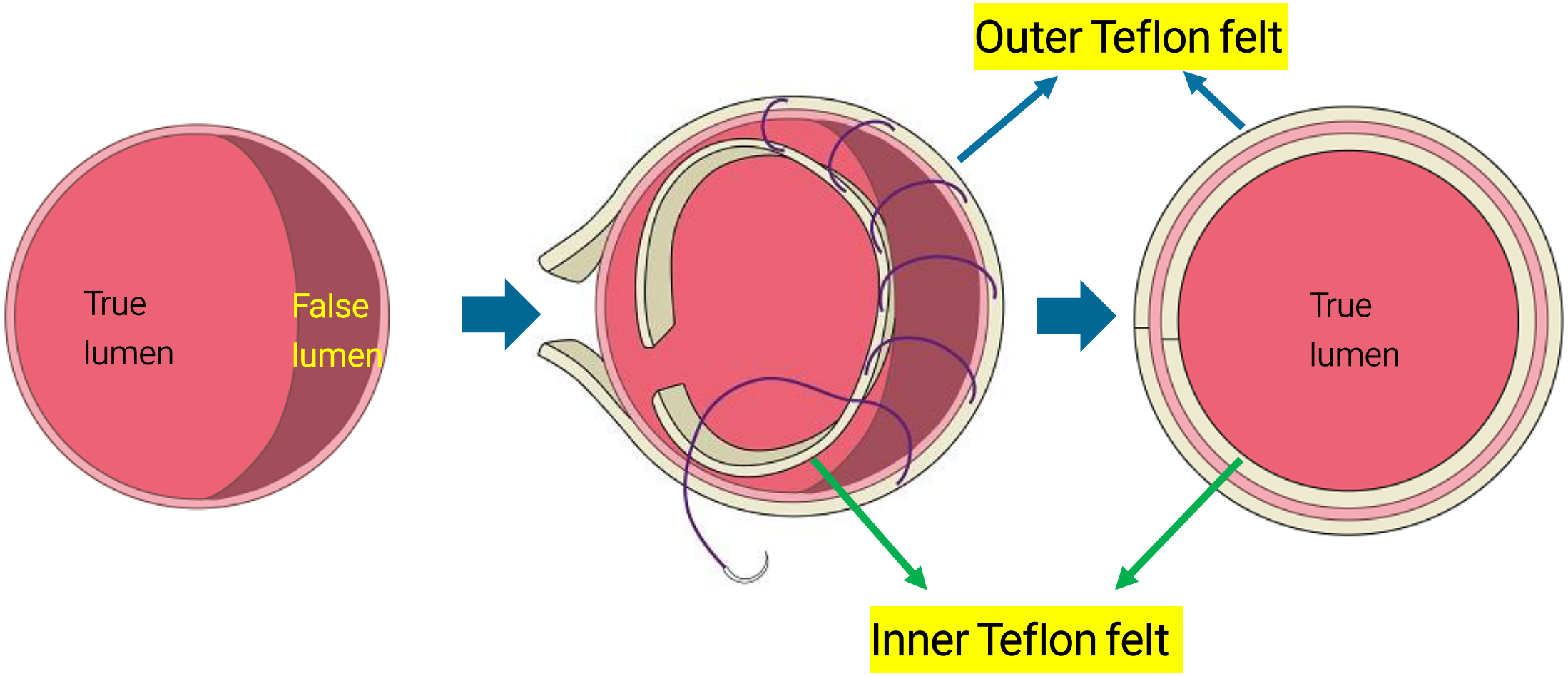
(Teflon felt reinforcement)

II. Teflon felt sandwich technique



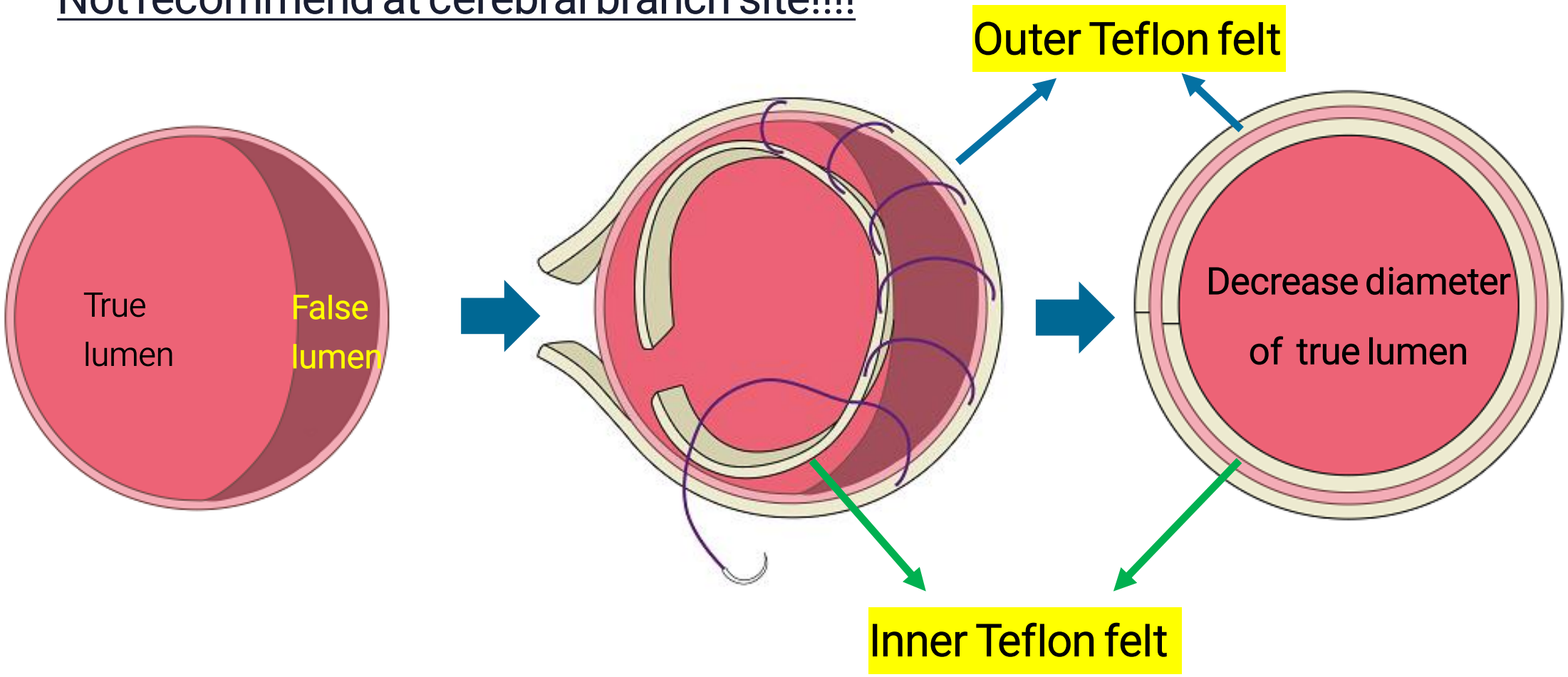
Teflon felt sandwich technique

II. Teflon felt sandwich technique



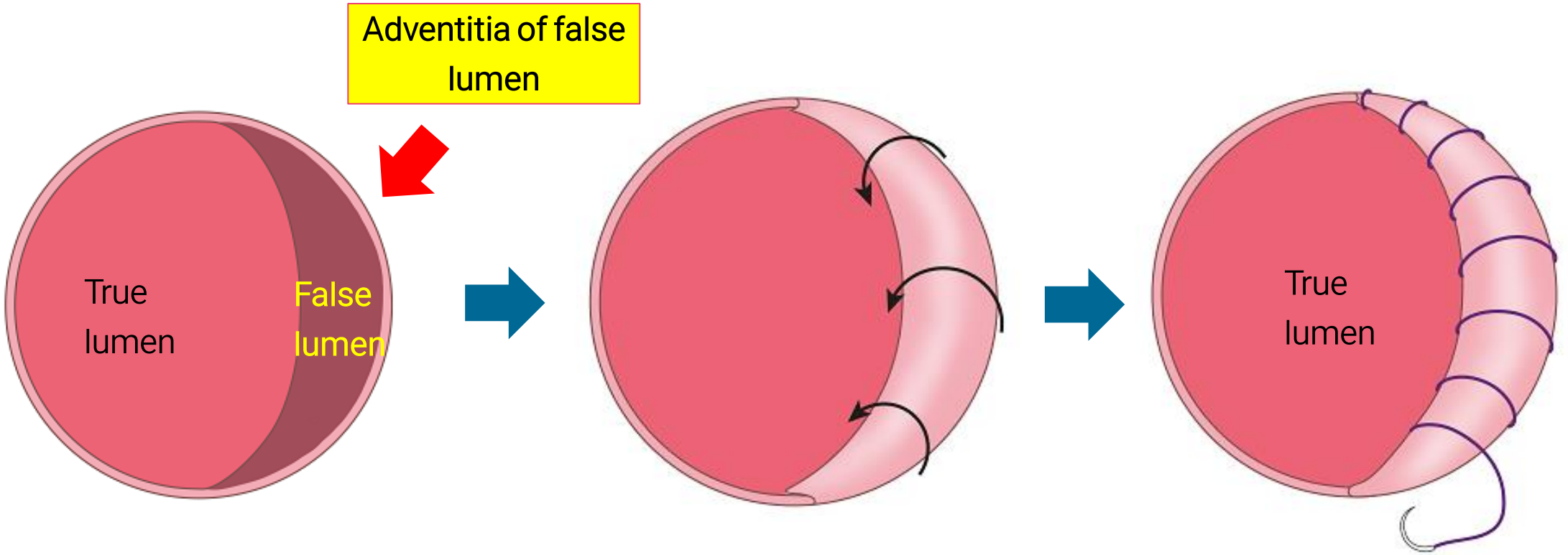
II. Teflon felt sandwich technique

Not recommend at cerebral branch site!!!!



III. Adventitial inversion technique

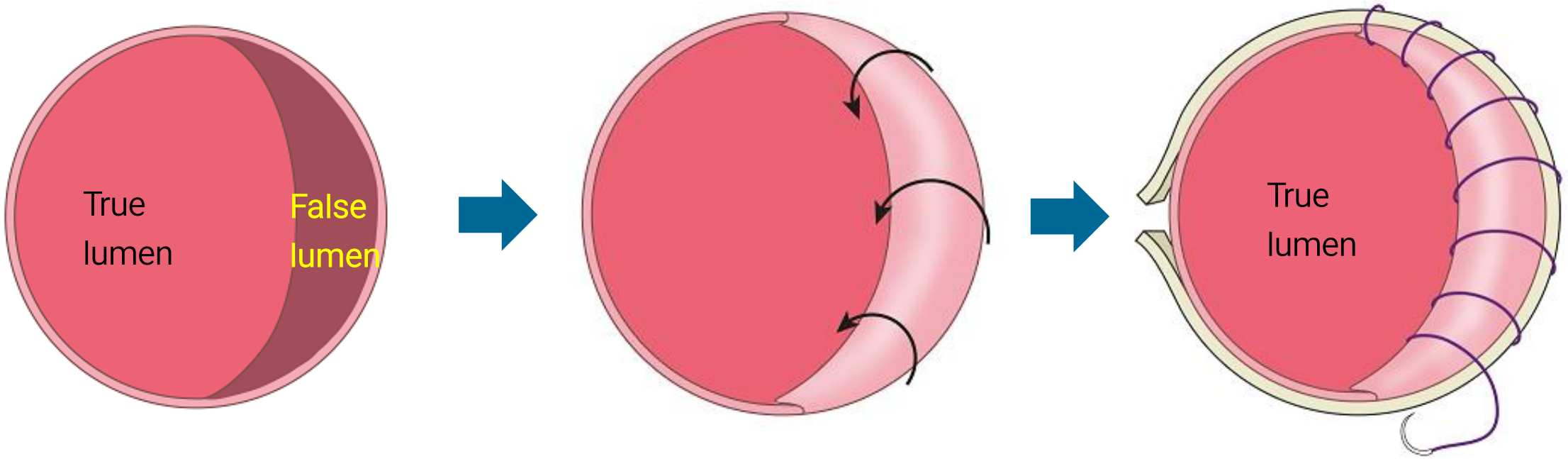
First reported in 1995 by Floten (St. Vincent hospital , USA)



Fold the adventitial layer into inner space

(5-0 Prolen continues running suture)

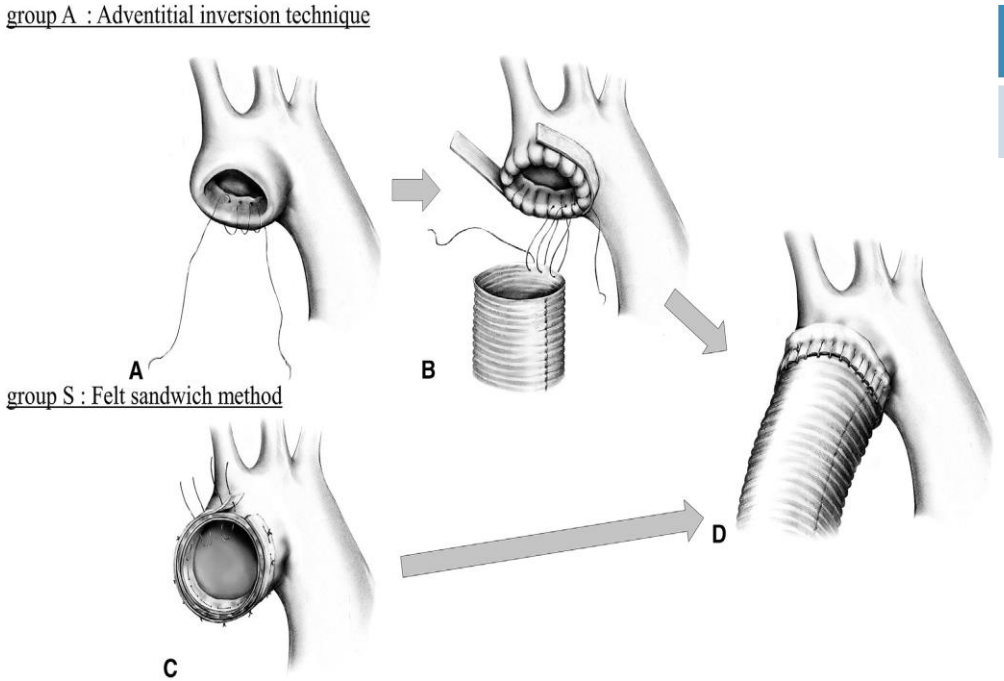
III. Adventitial inversion technique



Adventitia inversion technique + Teflon felt reinforcement

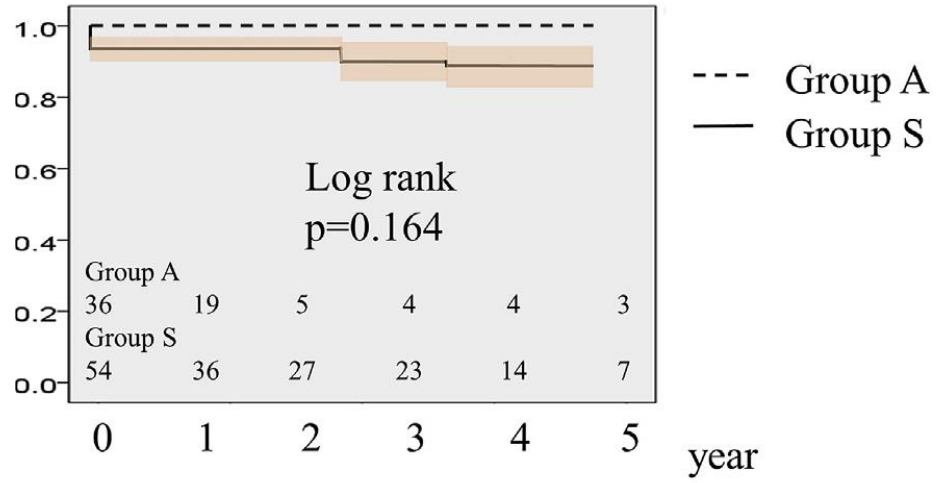
Adventitial inversion vs Felt sandwich

- 90 patients with DeBakey type I aortic dissection
- Adventitial inversion (Group A/ n=36) vs Sandwich method (Group S/ n=54)
- Patent rate of false lumen & aortic re-intervention rate



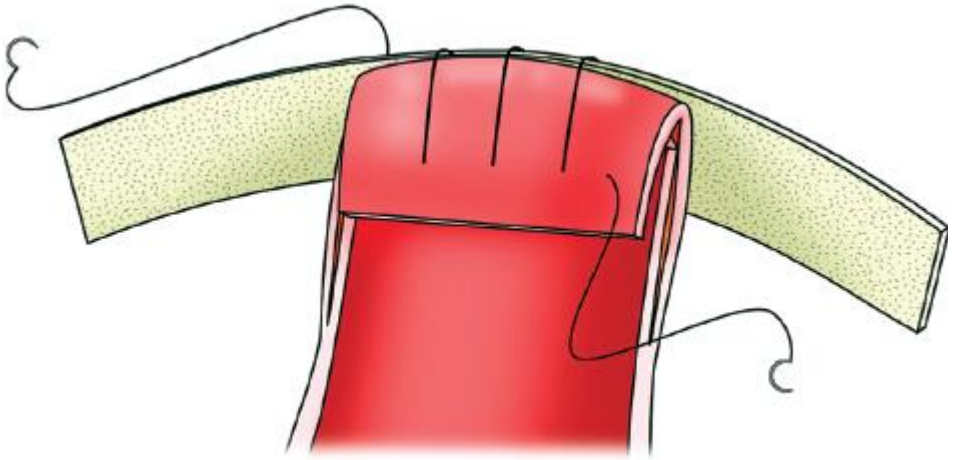
<False lumen thrombosis rate>

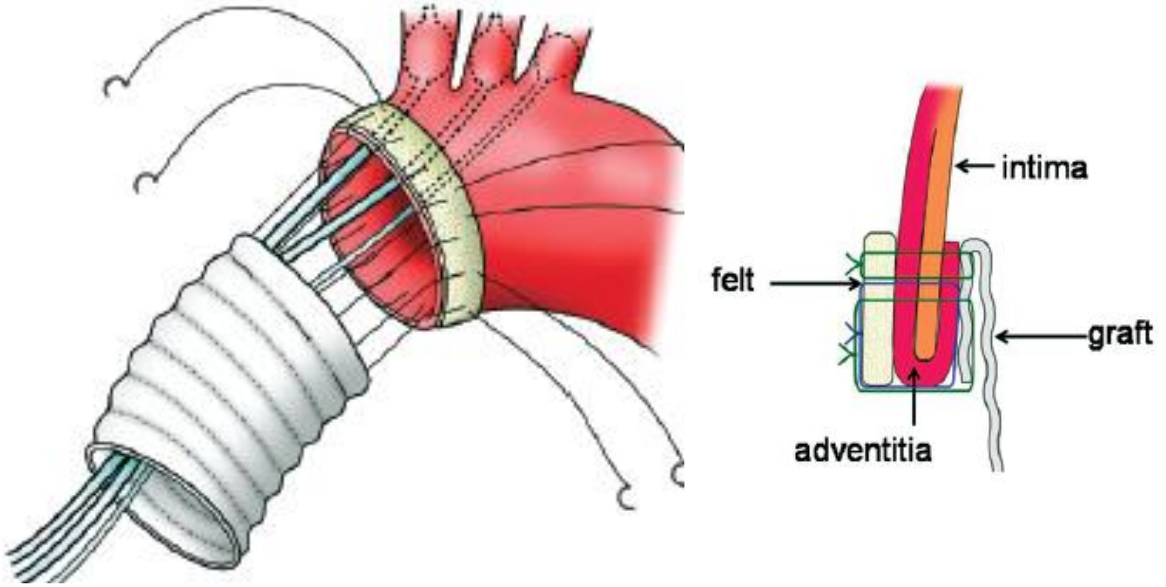
Group A	Group S	P value
78.8%	47.9%	0.026



J Thorac Cardiovasc Surg 2016;151:1340-5

III. Modified Sandwich technique





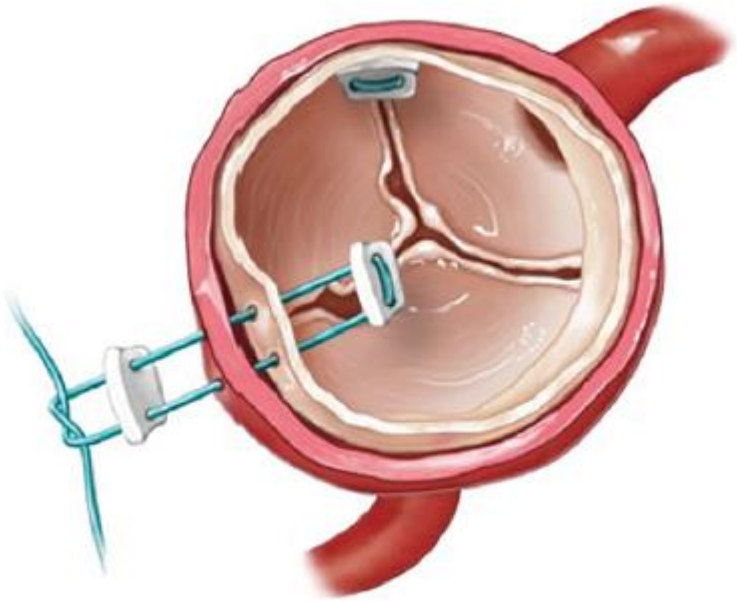
1. Adventitia inversion technique

+ Teflon felt reinforcement

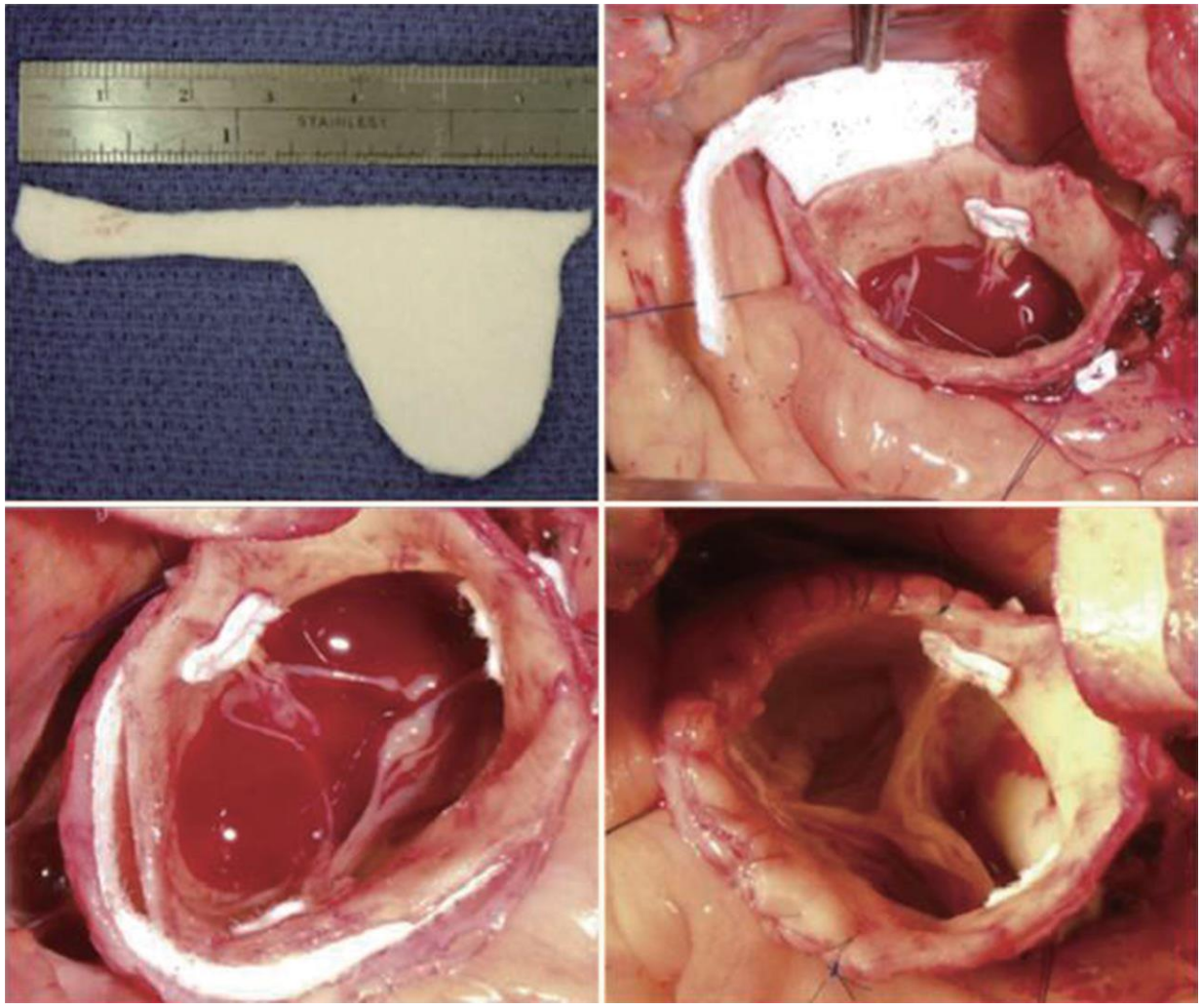
2. Graft Turn-up procedure

Asian cardiovasc Thorac Ann 2007;15:261-3

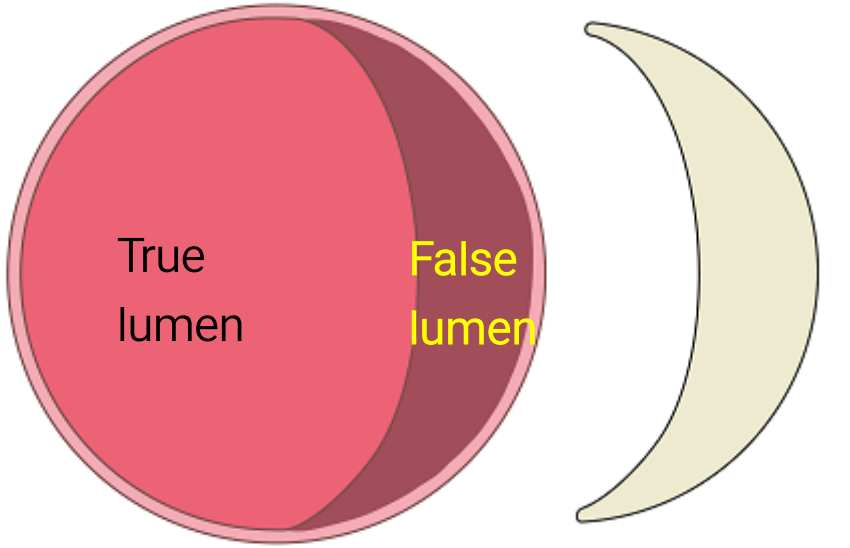
How to control false lumen at root ??



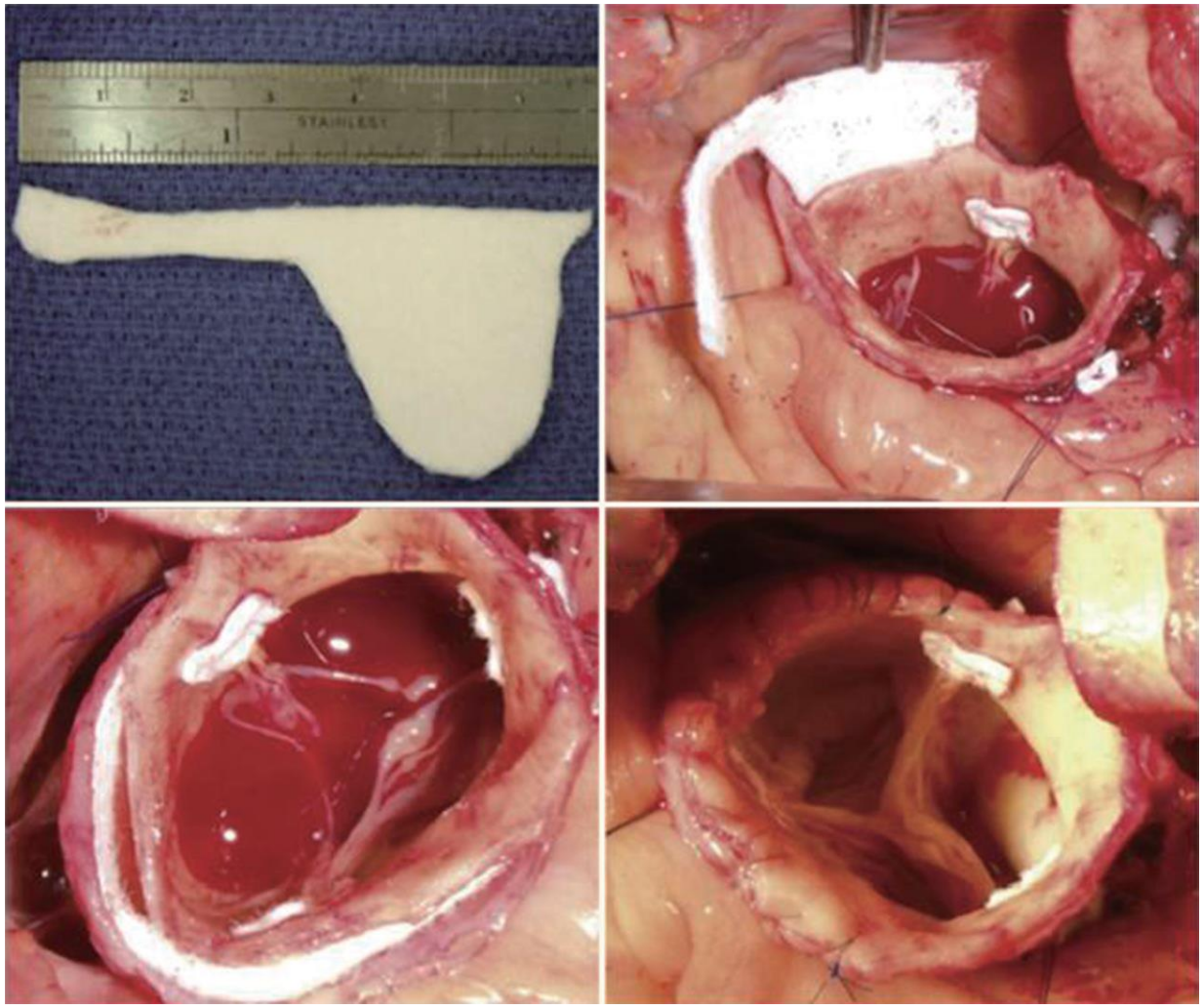
AV resuspension



IV. Neo-media formation (proximal site)



Teflon patch



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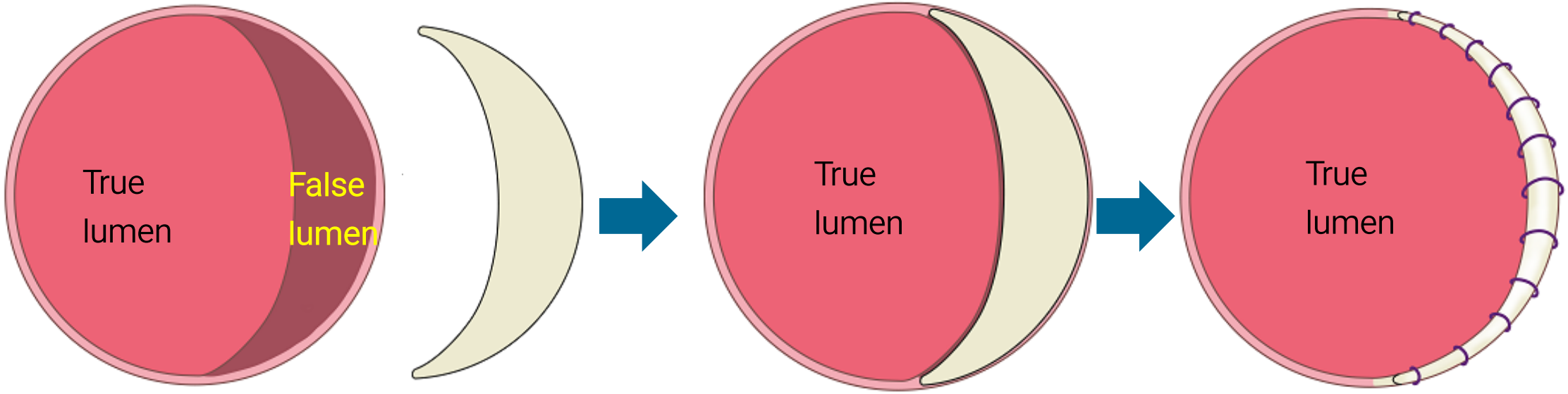
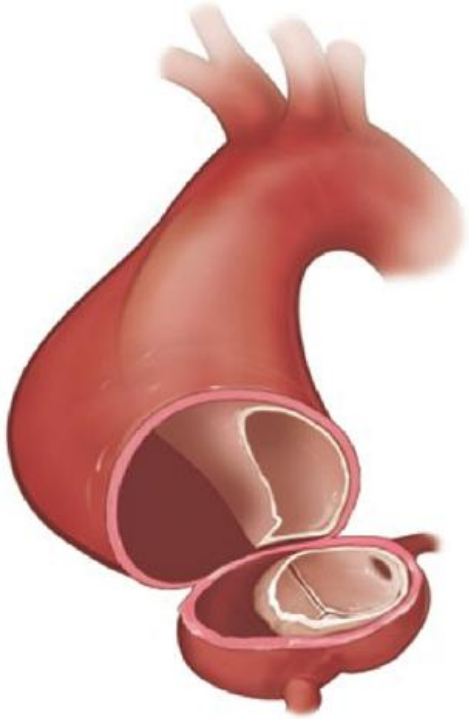


Take home massage



1. Eagle’s eyes
2. Lady’s hands
3. Lion’s Hearts