



The 31st Annual Meeting of the Association of Thoracic and Cardiovascular Surgeons of Asia (ATCSA) in conjunction with  
The 2023 Workshop of International Society of Minimally Invasive Cardiac Surgery (ISMICS) &  
The 9th Scientific Conference of Thoracic and Cardiovascular Surgery of Viet Nam (ATCSVN)

Ho Chi Minh City  
16.-18. November 2023



# Teaching Aortic Surgery

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Disclosures: none



# My Mentors



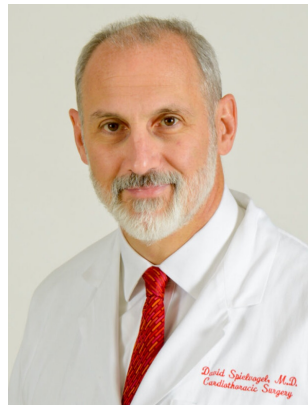
Prof. em. Hans-Hinrich Sievers



Prof. Sir Magdi H. Yacoub



Prof. em. Friedrich W. Mohr



Dr. David Spielvogel



Dr. Hazim J. Safi



Dr. Anthony Estrera





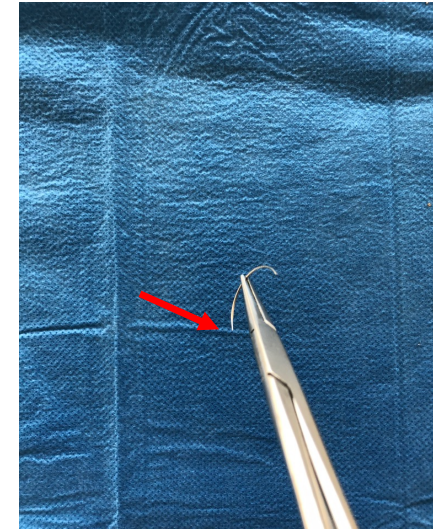
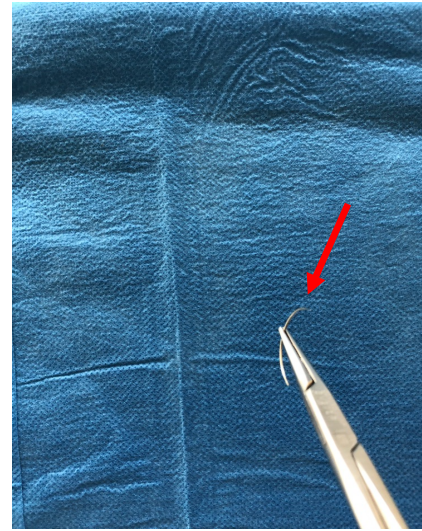
➤ **Widen your view:**

- Watch other surgeons (pos./ neg.)
- Visit centers of expertise
- Discuss cases
- Learn from your mistakes
- Take notes
- Always have a back-up plan!

➤ *Find your own technique!*



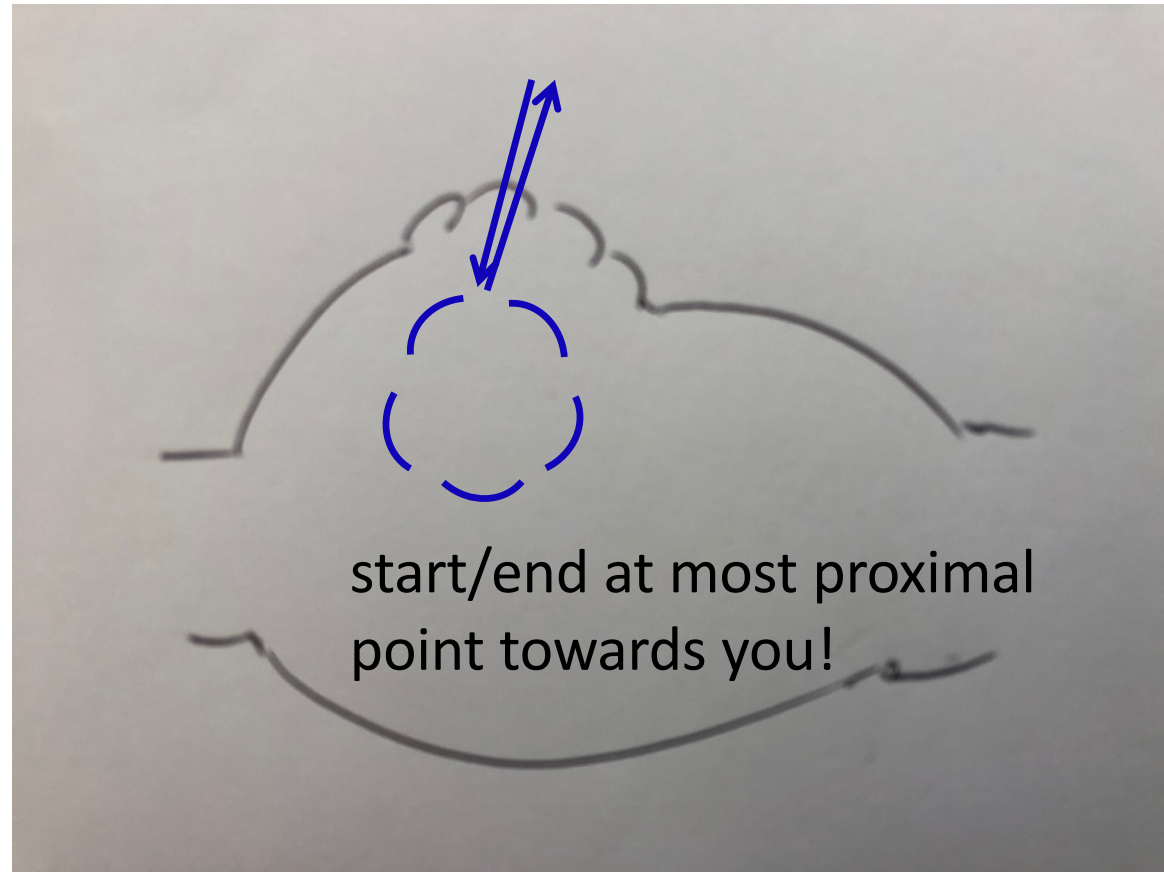
# Basic Needle Positions



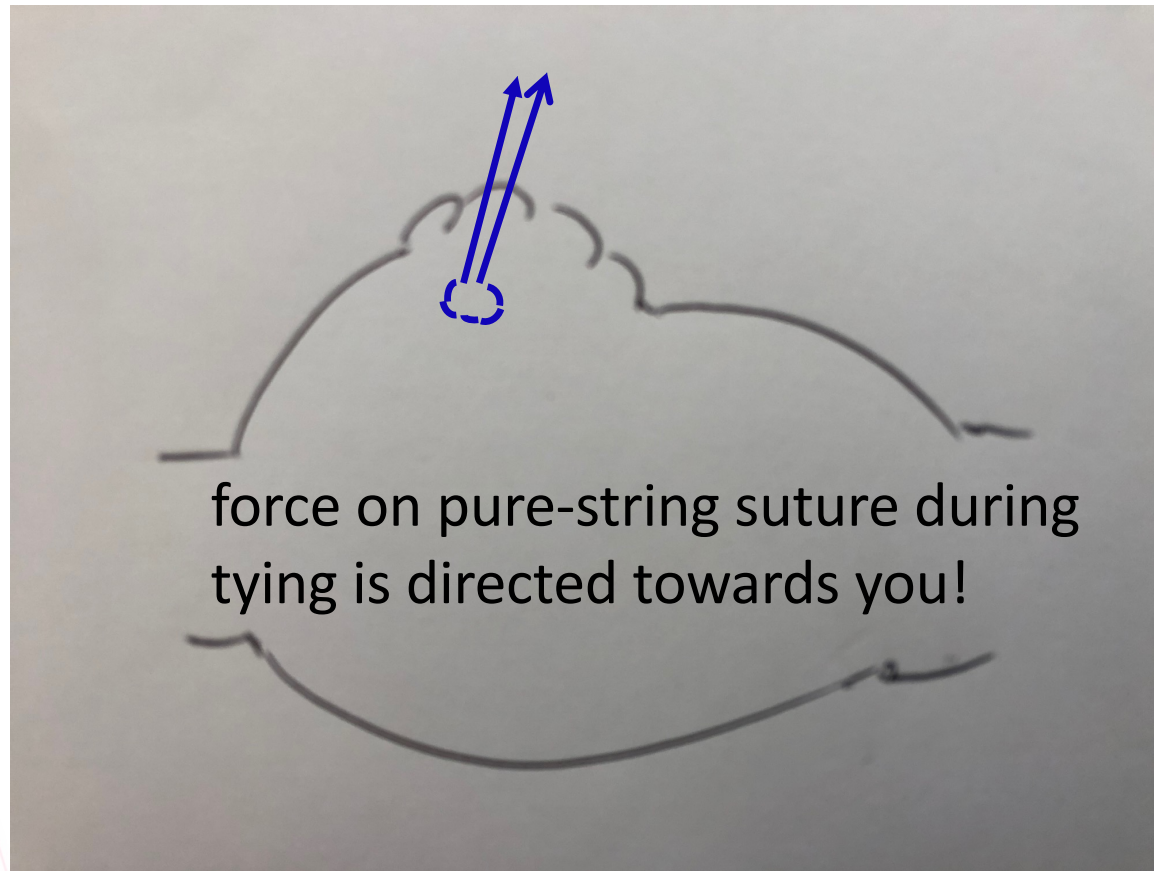
# Variations of Basic Positions



# Right Atrial Pure-string Suture

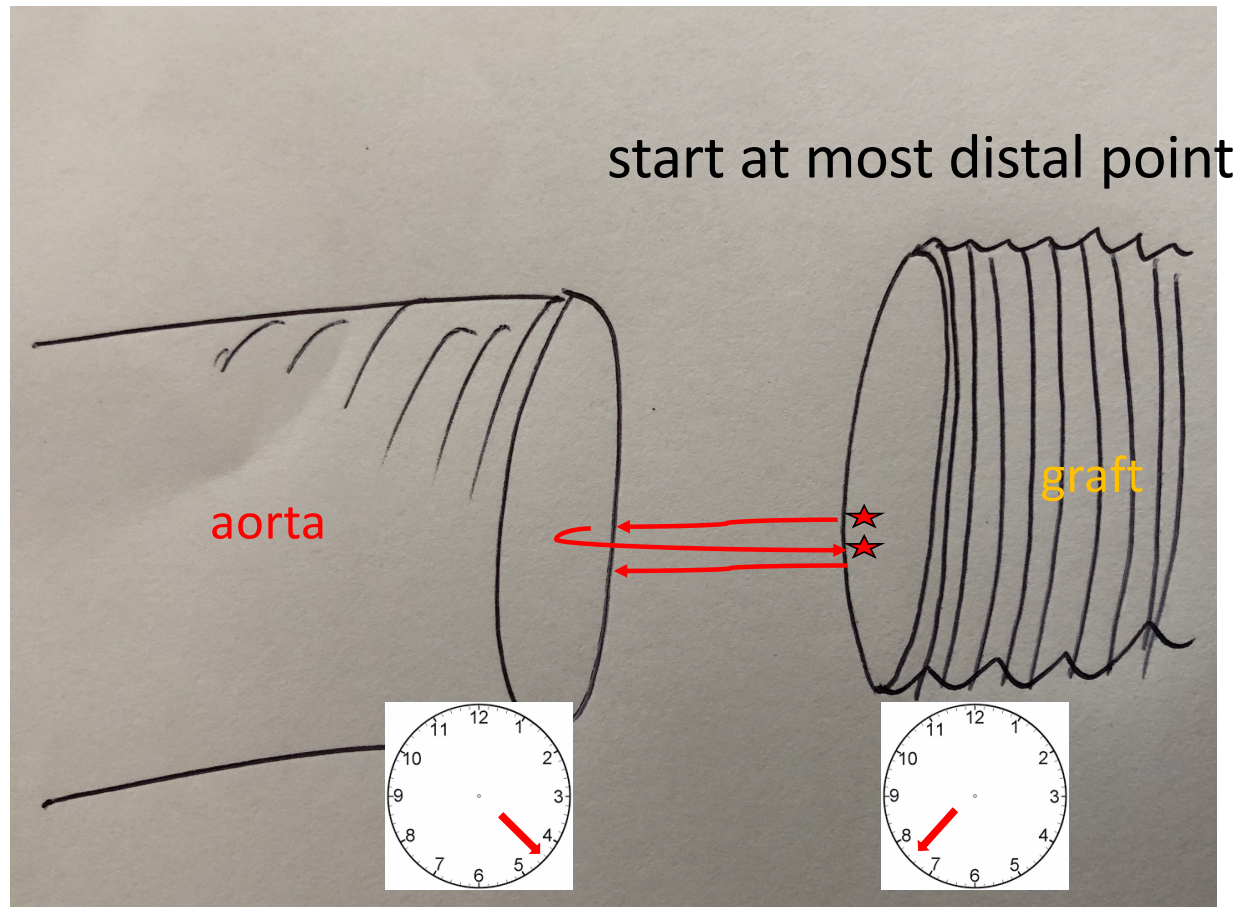


# Right Atrial Pure-string Suture

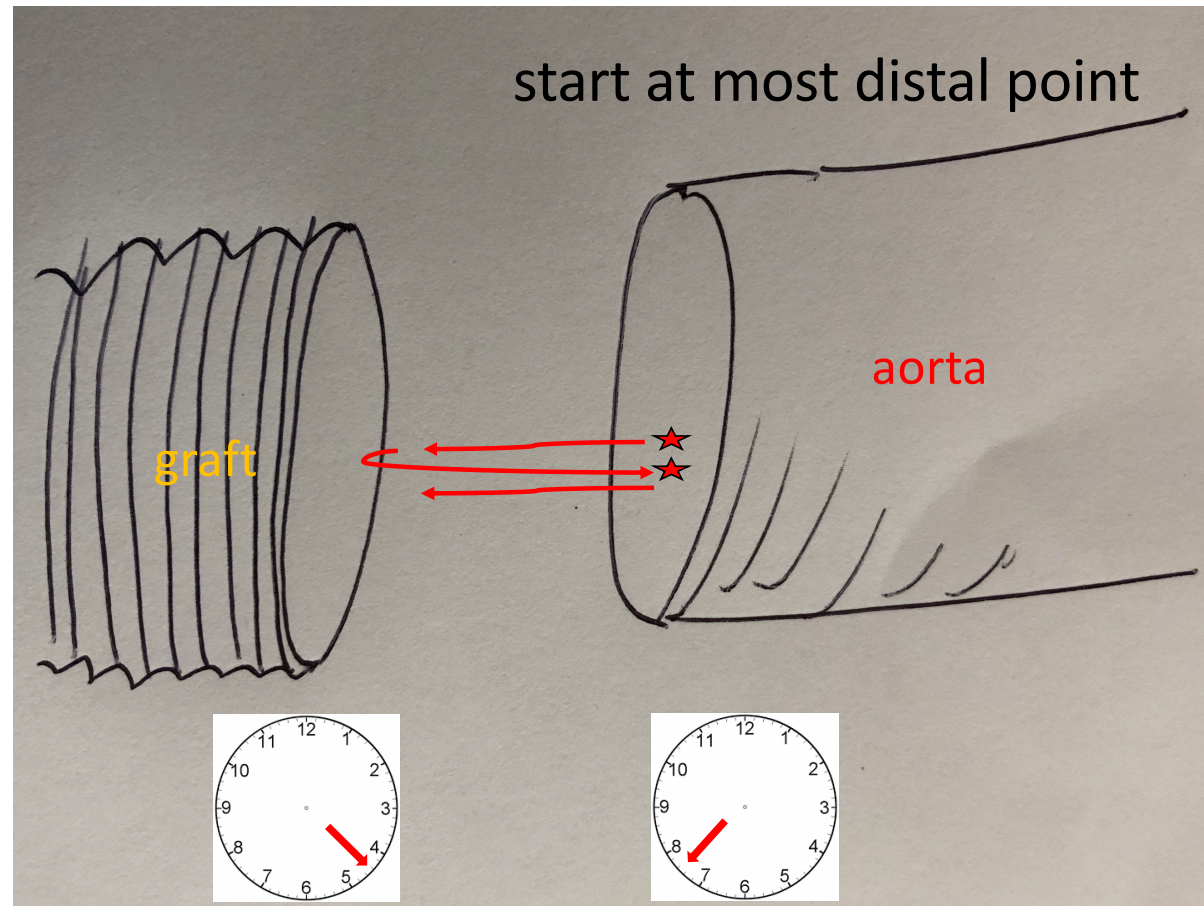




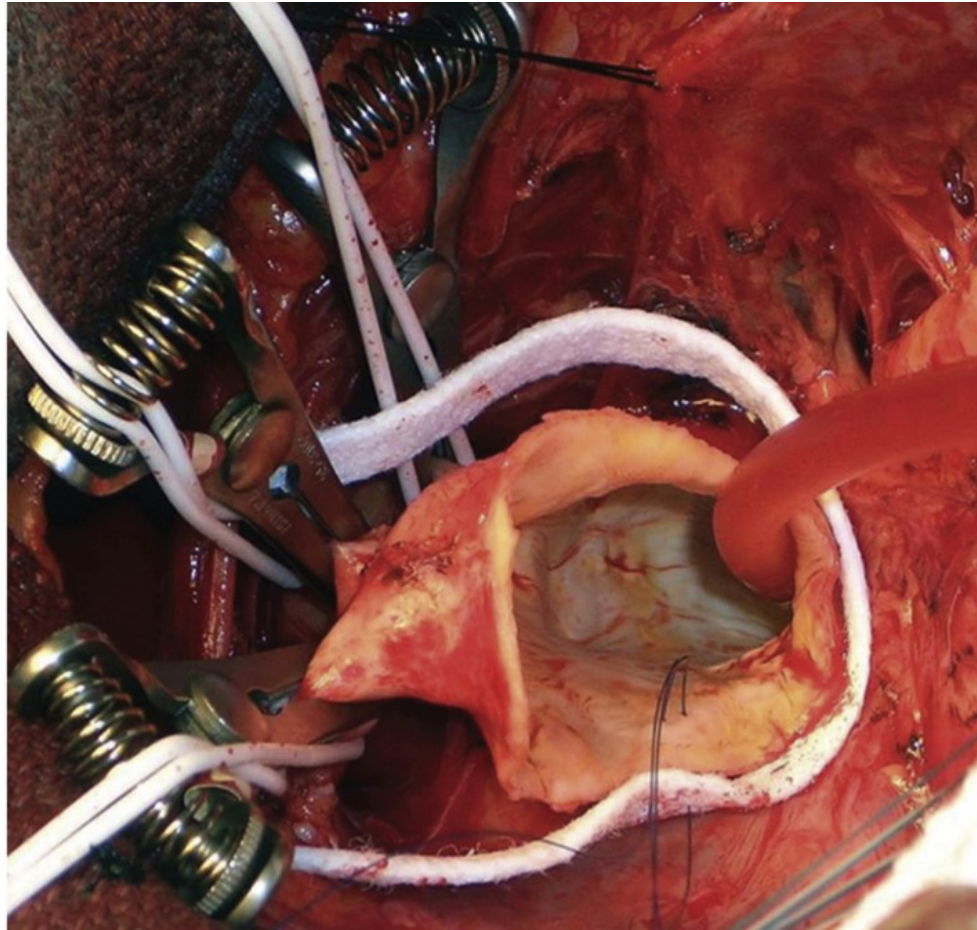
# Graft to Aorta



# Graft to Aorta



Teflon?



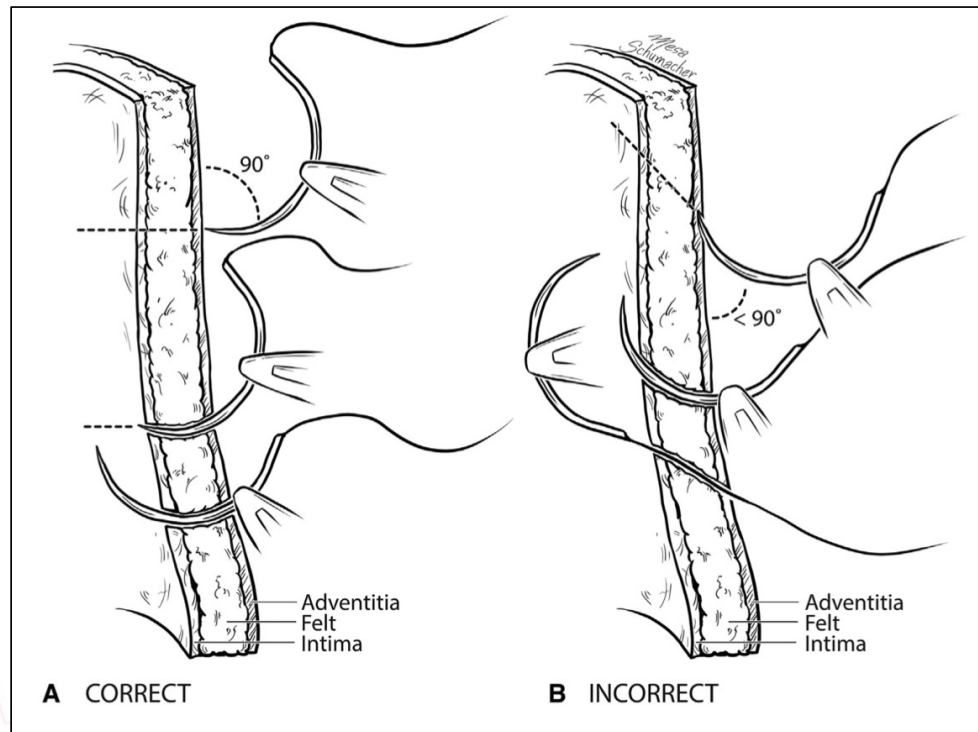
HOW I TEACH IT

# Type A Aortic Dissection Repair: How I Teach It



Robbin G. Cohen, MD, MMM, Amy E. Hackmann, MD, Fernando Fleischman, MD, Craig J. Baker, MD, Mark J. Cunningham, MD, Vaughn A. Starnes, MD, and Michael E. Bowdish, MD

Department of Surgery, Keck School of Medicine of University of Southern California, Los Angeles, California

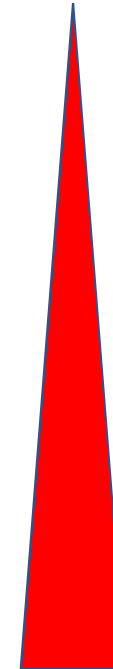




# Aortic Surgery

- Supracommissural replacement of ascending aorta
- Supracommissural replacement of ascending aorta + hemiarch
- Bentall procedure
- Aortic valve sparing procedure
- Total arch + (f)ET
- Total arch + reconstruction of supra-aortic vessels
- TAAR

**COMPLEXITY**




Acute aortic dissection



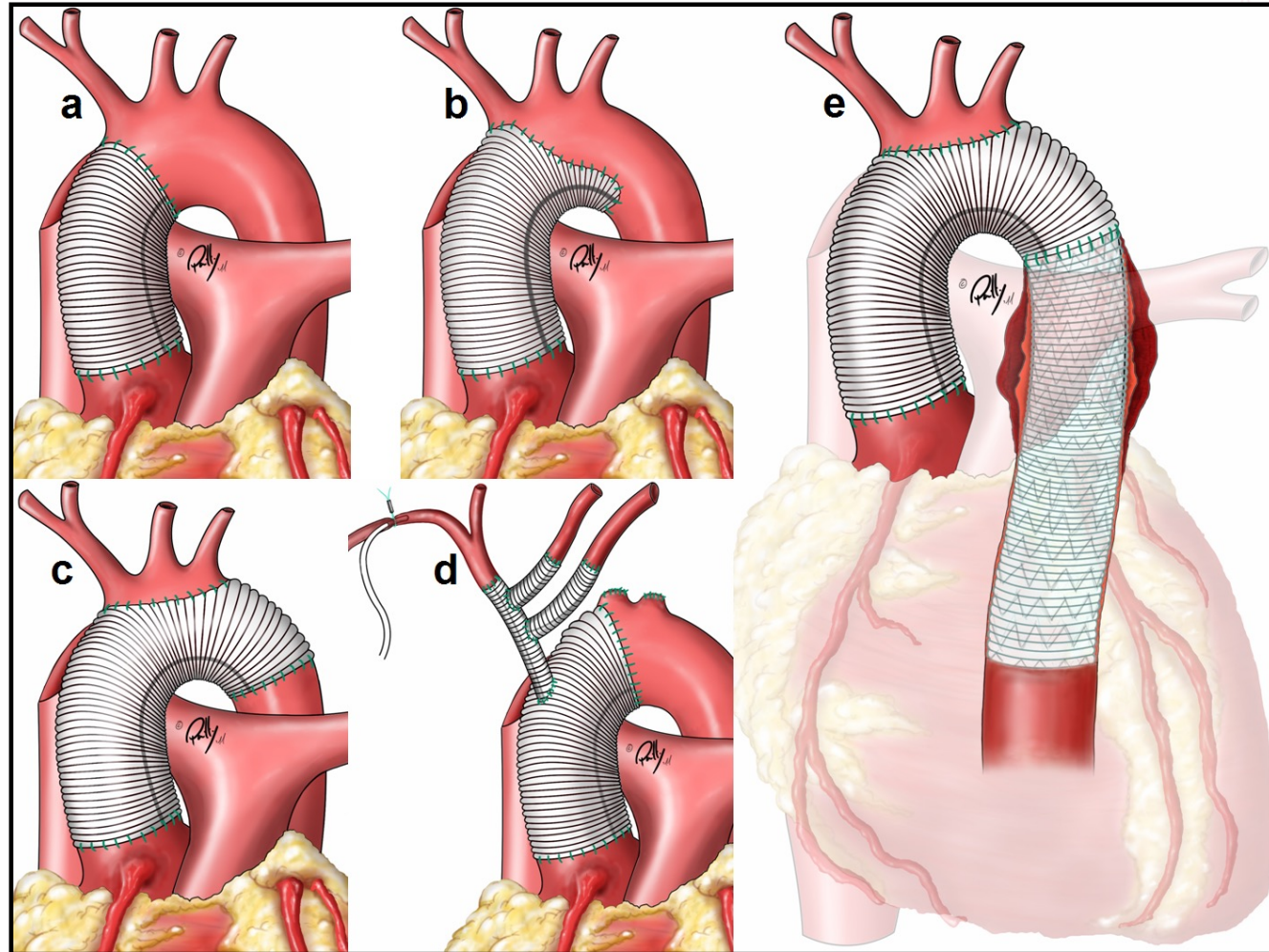


# Case Planning

- *Basic surgical techniques*
  - *Knowledge of specific pathology /pathophysiology*
  - Operative planning:
    - Cannulation strategy
    - Temperature management
    - Cerebral protection
    - Visceral protection
    - Operative stages
    - Back-up plan
- 



# Aortic surgery



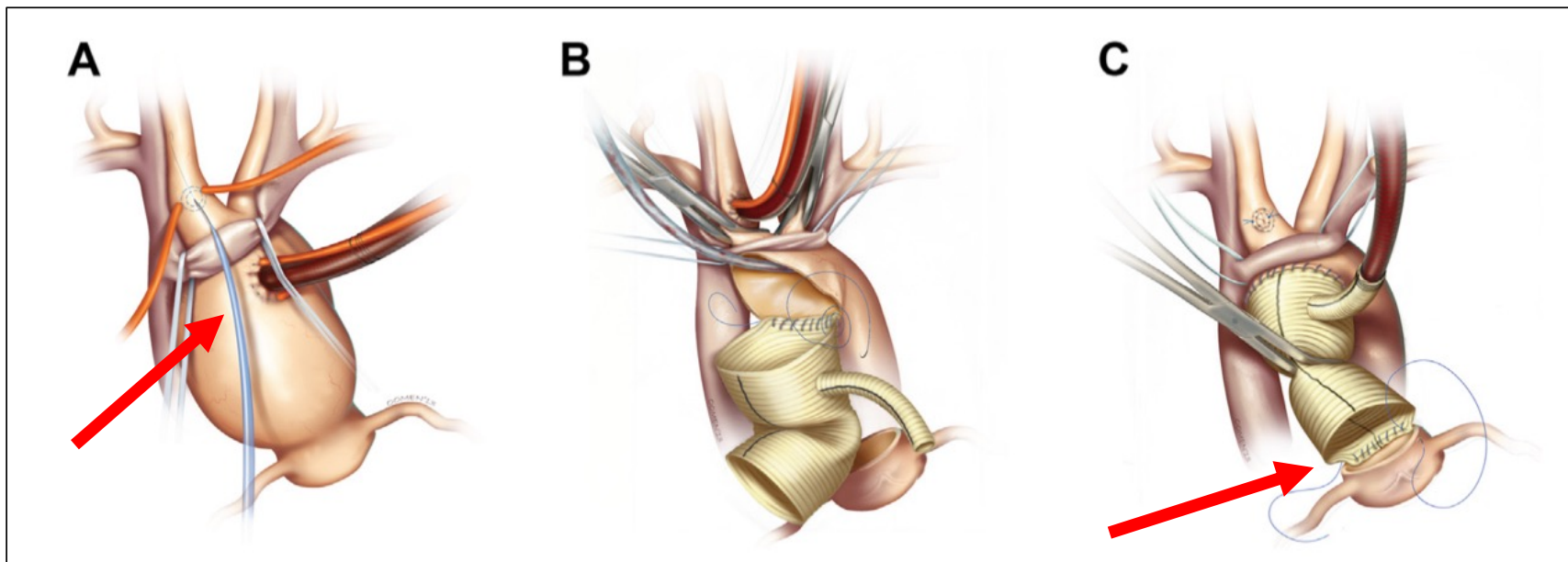
## HOW I TEACH IT

# Aortic Arch Replacement: How I Teach It

 Check for updates

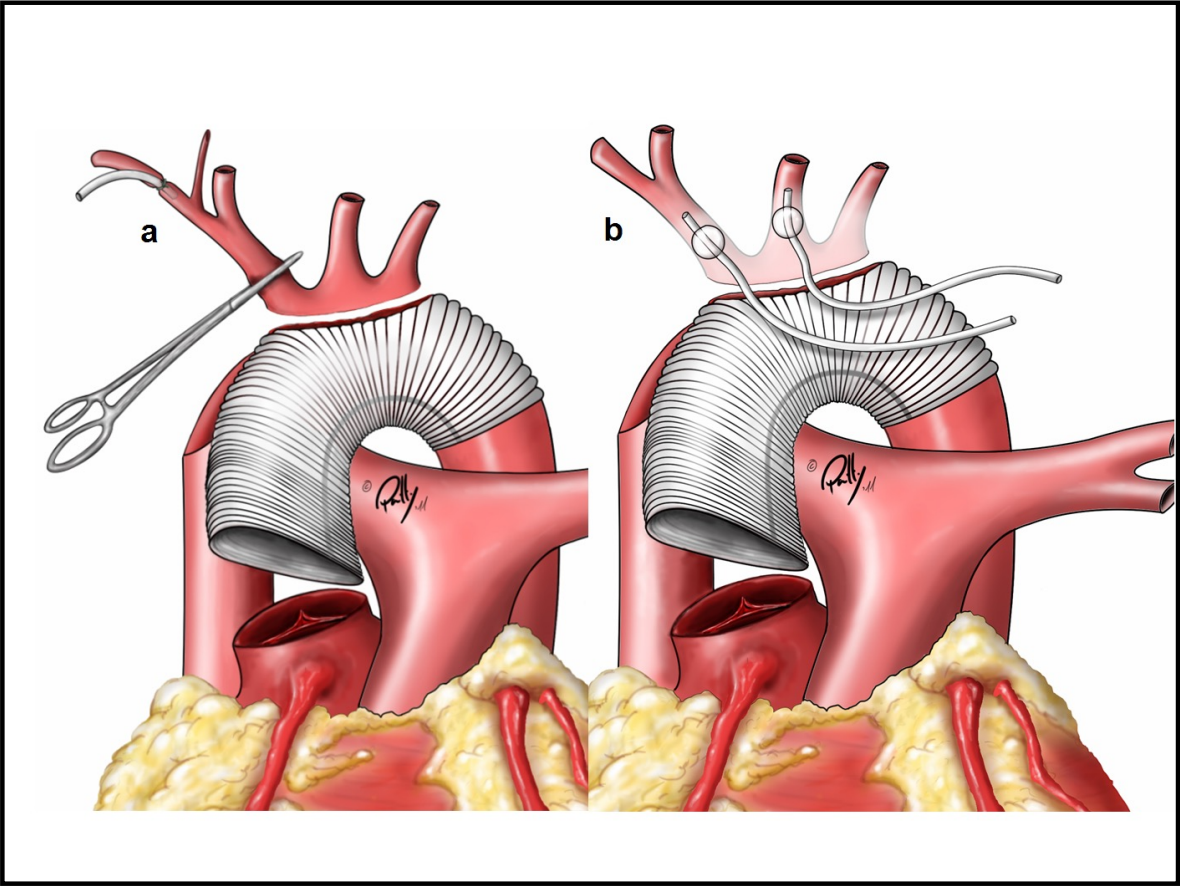
Amine Mazine, MD, Nitish K. Dhingra, MS, Michael W. A. Chu, MD, MEd,  
Ismail El-Hamamsy, MD, PhD, and Mark D. Peterson, MD, PhD

Division of Cardiac Surgery, Department of Surgery, St. Michael's Hospital, University of Toronto, Toronto, Ontario, Canada; Division of Cardiac Surgery, Department of Surgery, Western University, London Health Sciences Centre, London, Ontario, Canada; and Department of Cardiovascular Surgery, Mount Sinai Hospital, Icahn School of Medicine at Mount Sinai, New York, New York

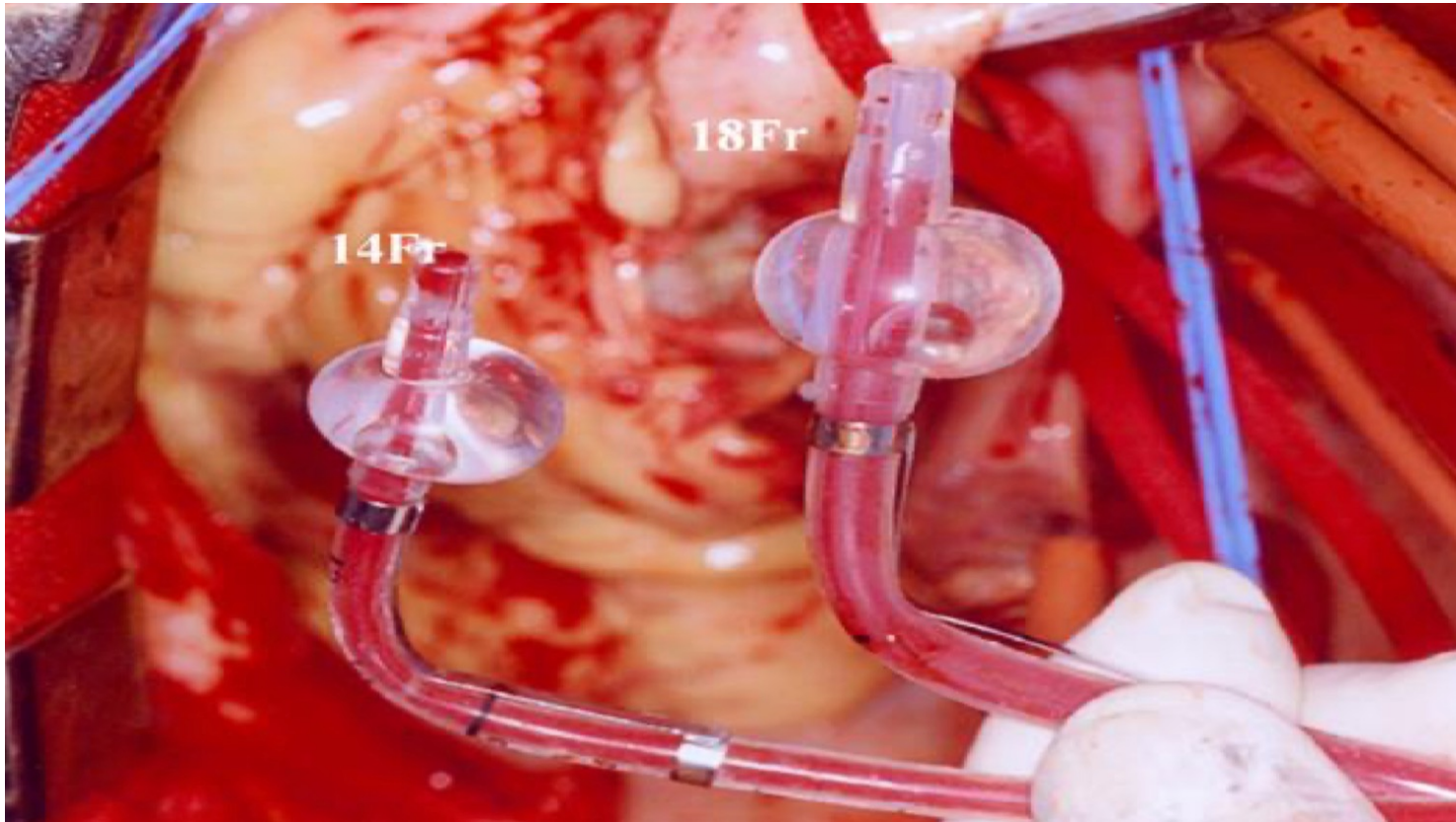




# Cerebral Perfusion



# Cerebral Perfusion



HOW I TEACH IT

# Valve-Sparing Aortic Root Replacement Using the Remodeling Technique With Aortic Annuloplasty: Tricuspid Valves With Repair of Specific Lesion Sets: How I Teach It



Pouya Youssefi, FRCS(CTh), PhD, Pavel Zacek, MD, PhD, Mathieu Debauchez, MD, and Emmanuel Lansac, MD, PhD

Department of Cardiac Surgery, Institut Mutualiste Montsouris, Paris, France; and Department of Cardiac Surgery, Charles University, Faculty of Medicine and University Hospital, Hradec Kralove, Czech Republic

## SURGICAL APPROACH TO AORTIC INSUFFICIENCY ACCORDING TO AORTA PHENOTYPE

### DILATED ROOT

(Sinuses of Valsalva  $\geq 45\text{mm}$ )



Remodeling & Annuloplasty



### DILATED ASCENDING AORTA

(Asc Aorta  $\geq 40\text{-}45\text{mm}$  with normal root)



Asc Aorta Replacement & Annuloplasty



### ISOLATED AORTIC INSUFFICIENCY

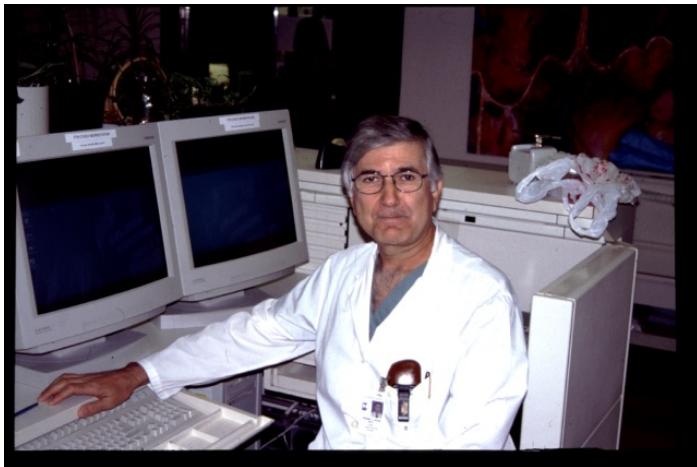
(All aorta  $\leq 40\text{-}45\text{mm}$ )



Double Annuloplasty



# David I Procedure

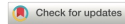


David-Operation (1988)  
„reimplantation“



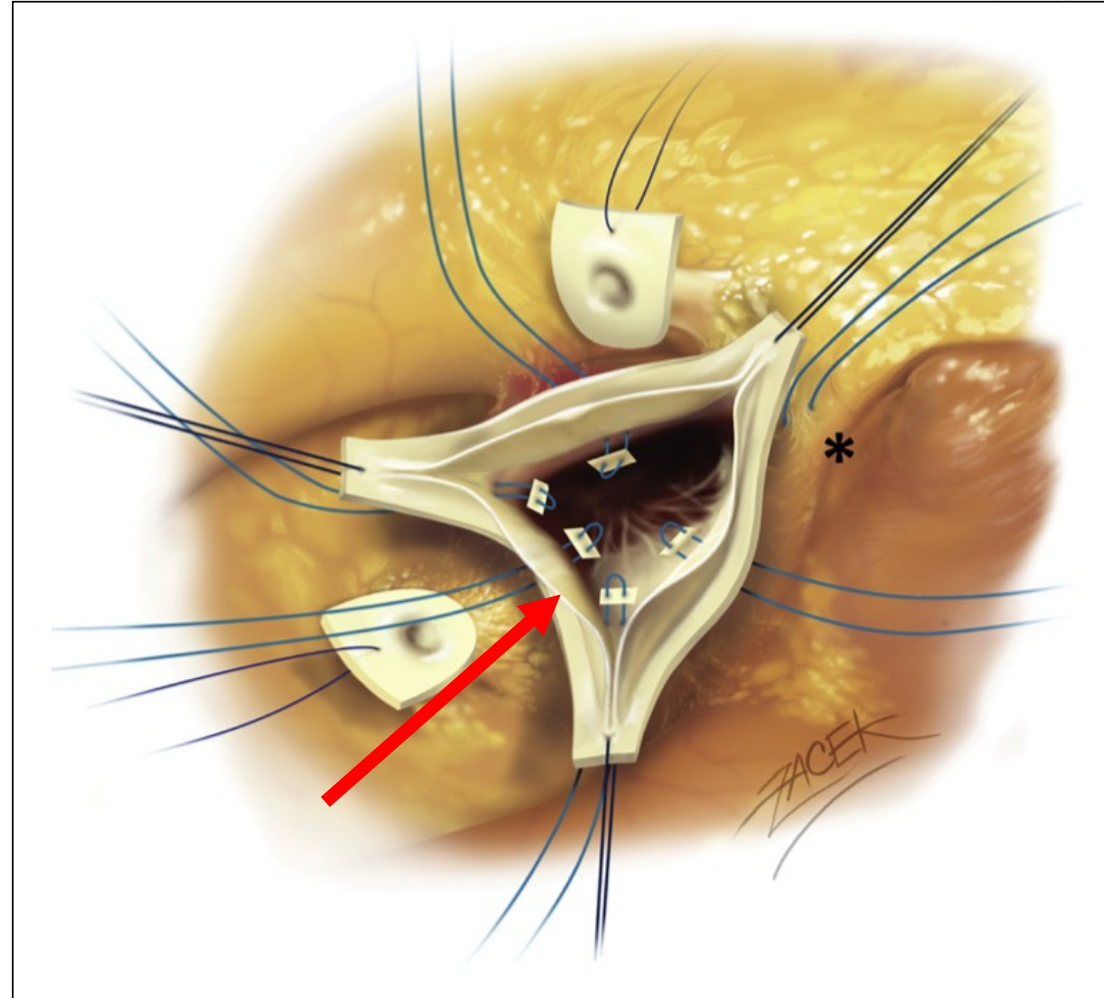
HOW I TEACH IT

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# David Procedure



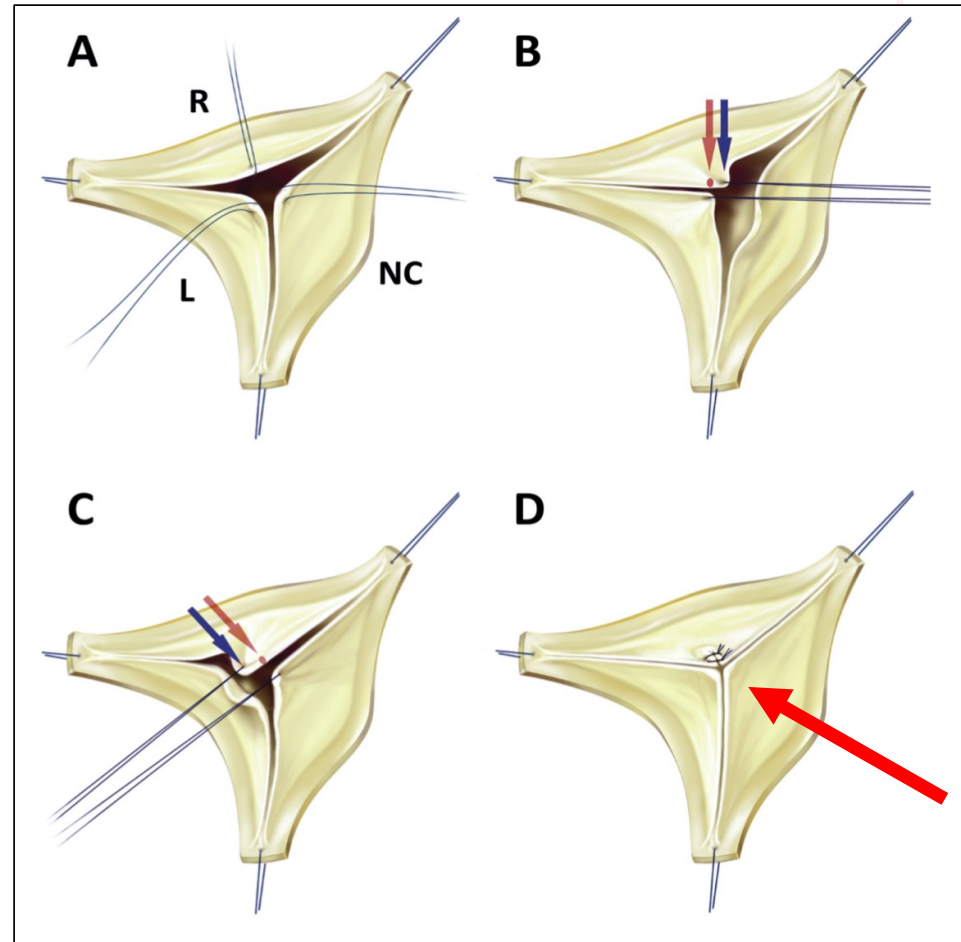
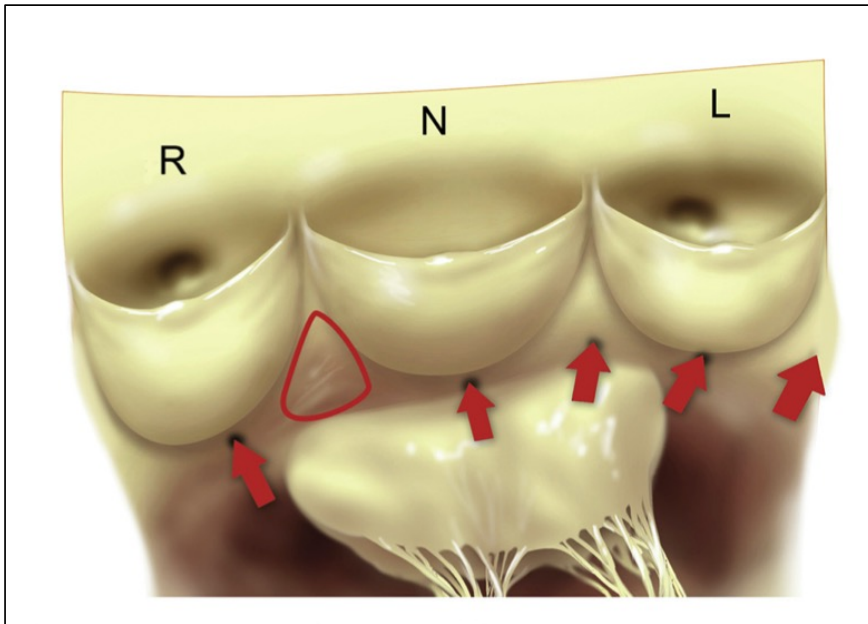
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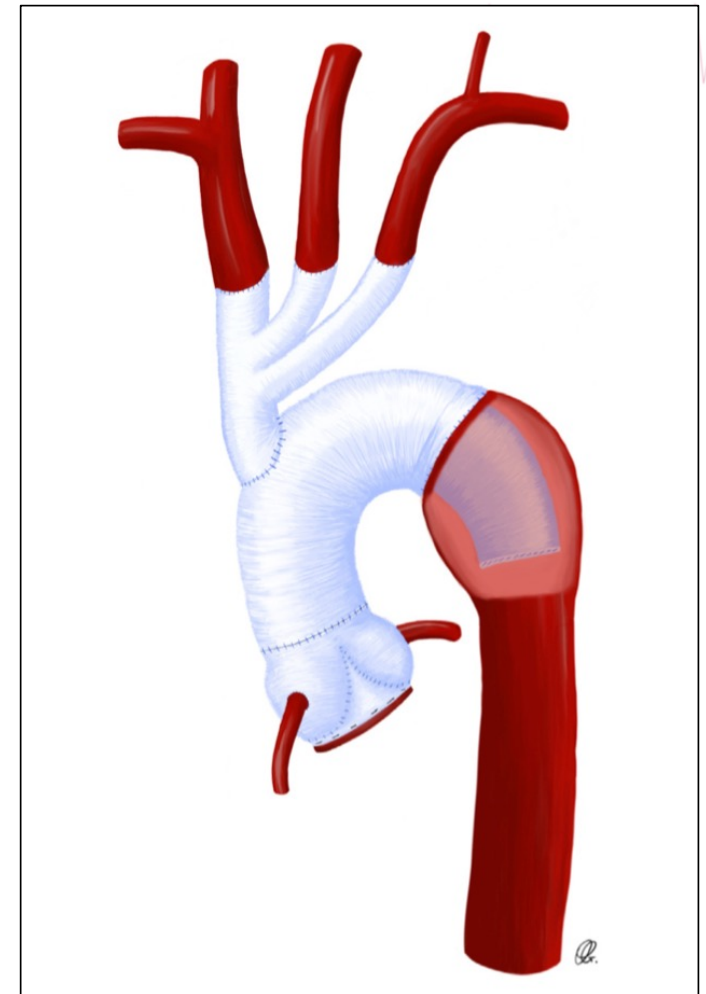
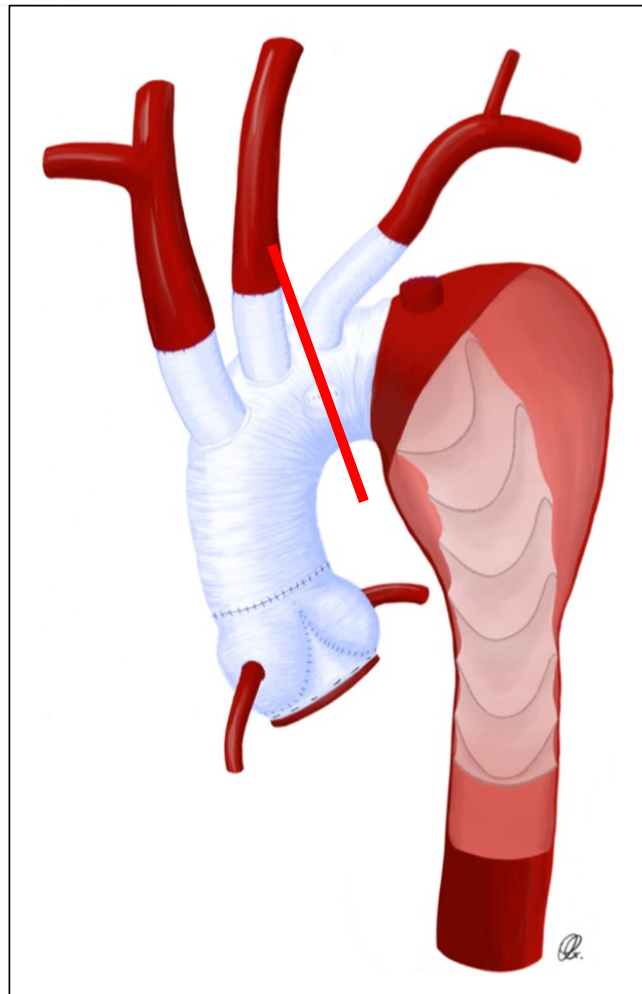
HOW I TEACH IT

### Aortic Arch Replacement: How I Teach It

 Check for updates

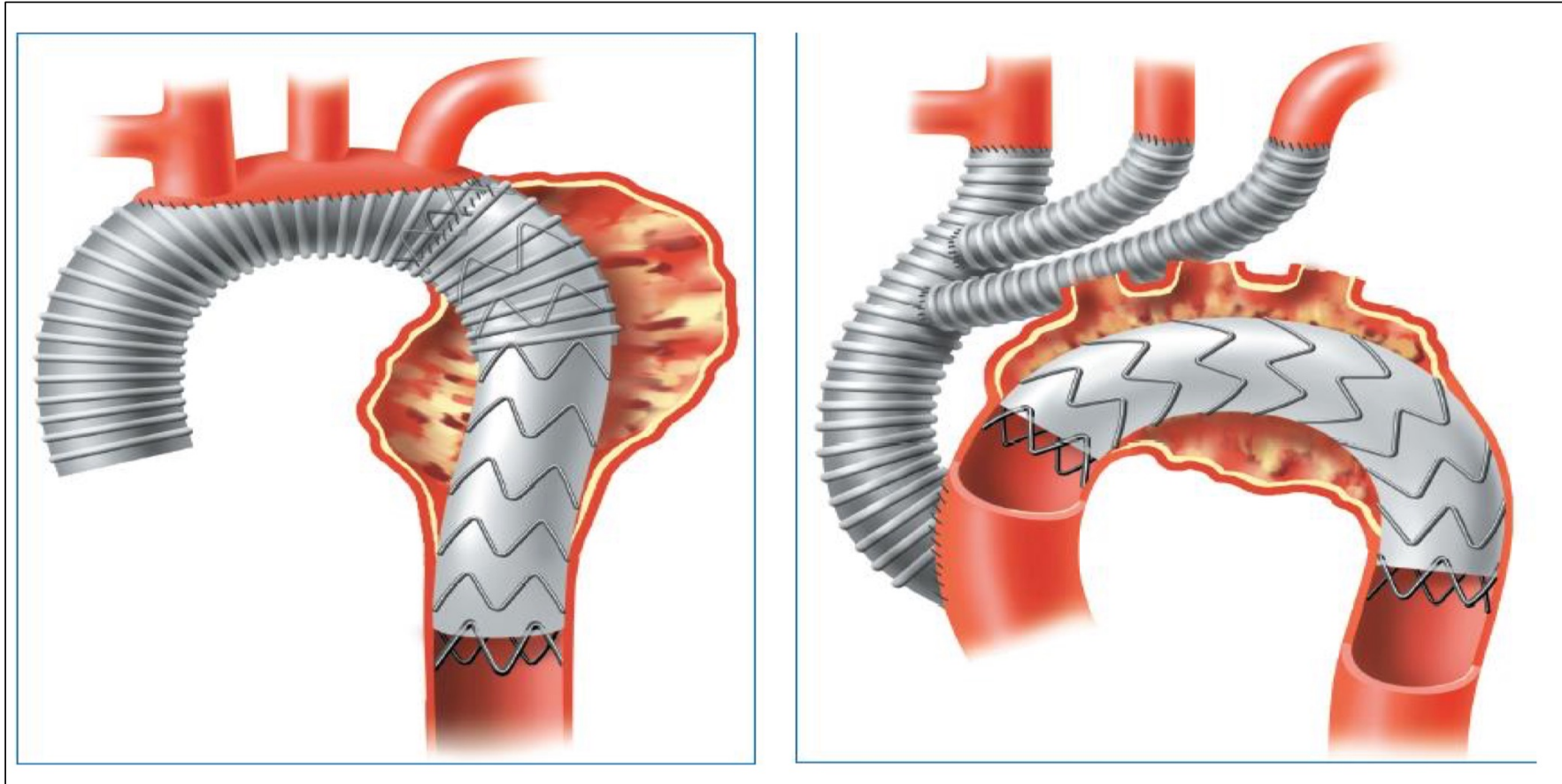
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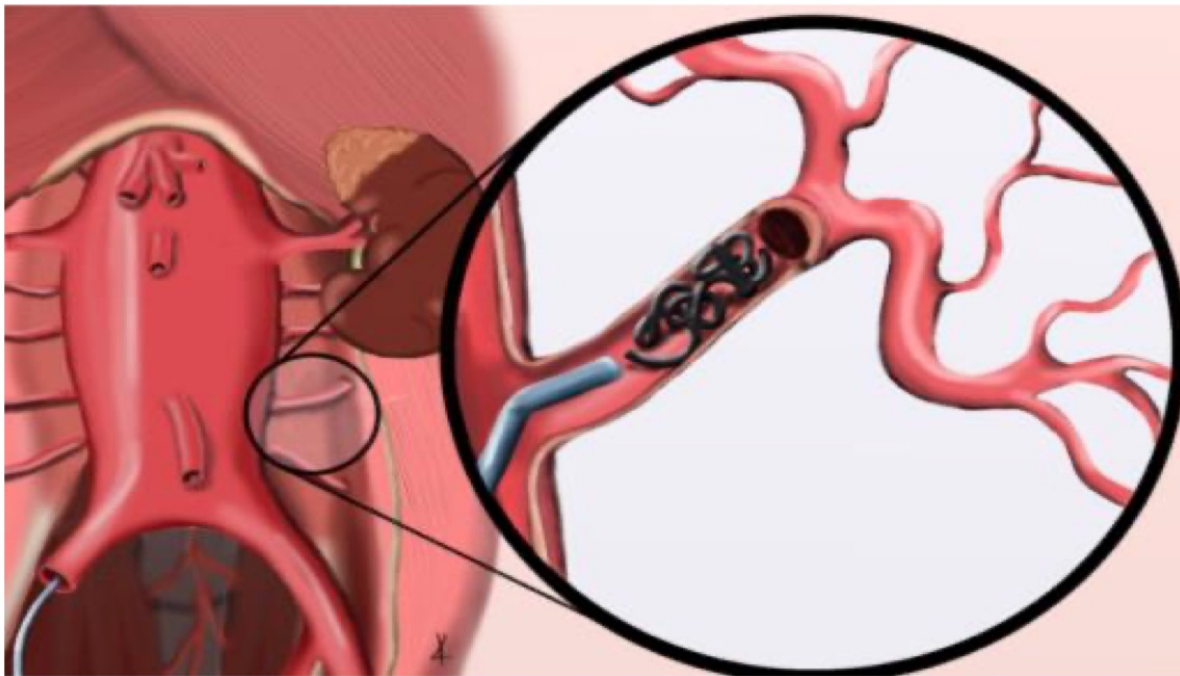


# Aortic Surgery

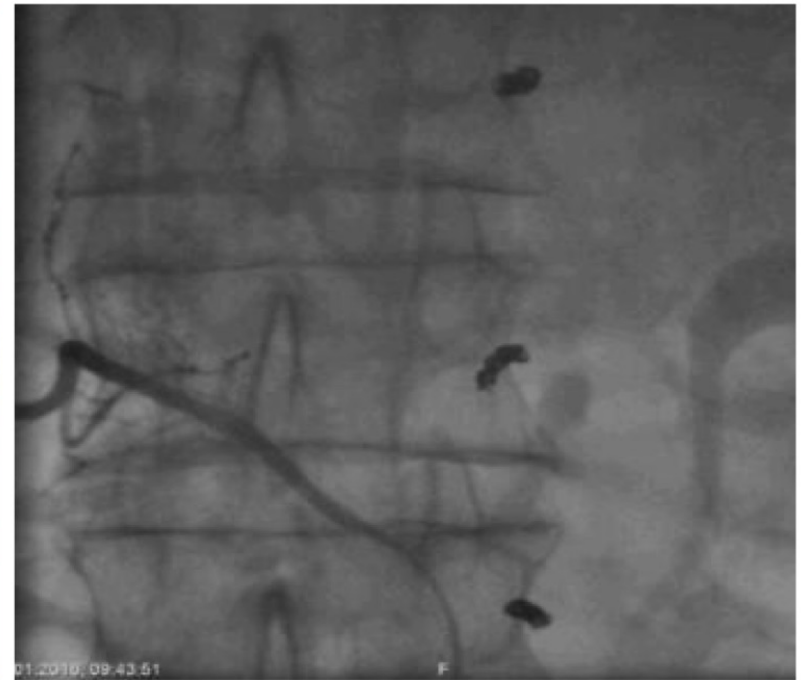


# Minimally invasive staged segmental artery coil or plug embolization

## MIS<sup>2</sup>ACE



Minimally invasive coil deployment - schematically



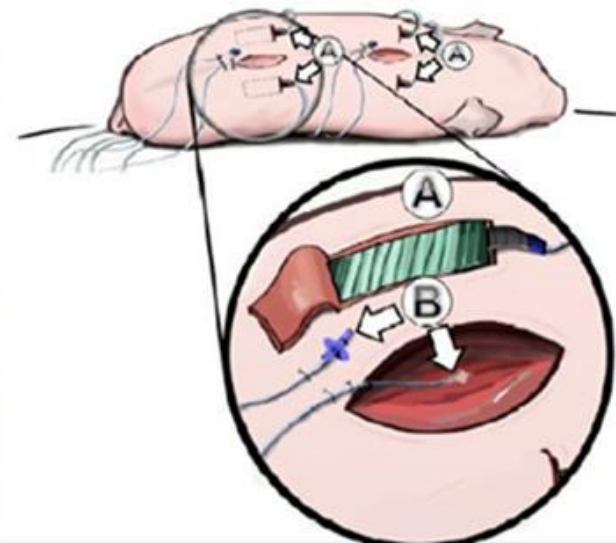
Coil-occluded (right) / patent SA (left)

# Spinal chord protection

Non-invasive, clinical real-time monitoring



Pilot series<sup>1</sup>

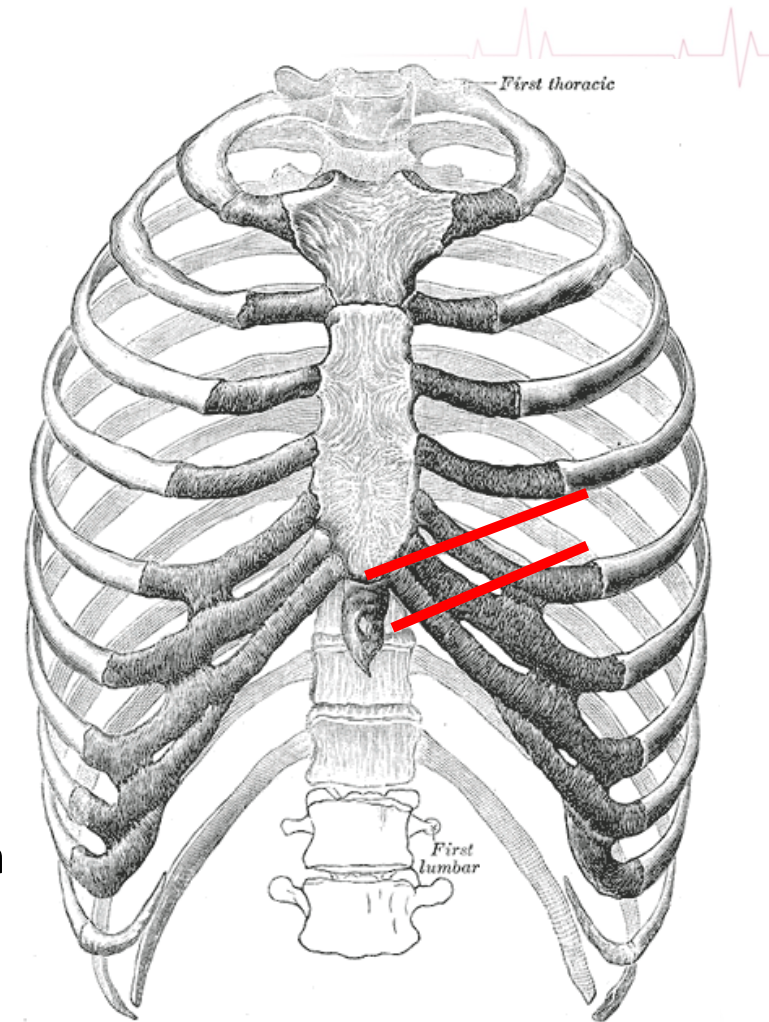


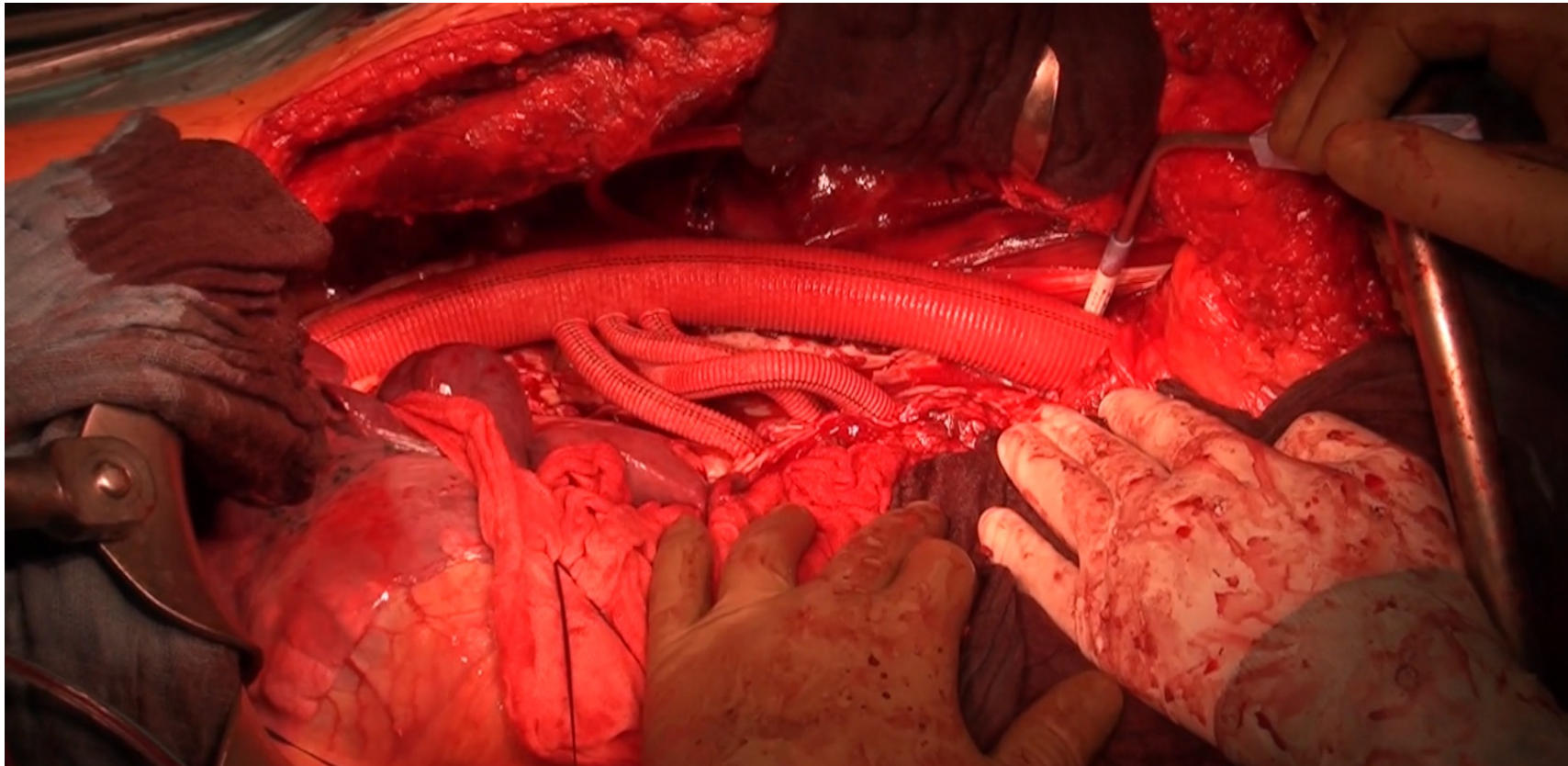
Validation<sup>2</sup>

1. [Etz et al., Eur J Vasc Endovasc Surg. 2013 Dec;46\(6\):651-6](#)
2. [Etz et al., Eur J Cardiothorac Surg. 2015 Jun;47\(6\):943-57](#)

# TAAR

- minimizing dissection
- partial resection of 4th rib
- straight opening of lower thoracic apertur
- partial stapling of the diaphragm
- no dissection of viszeral arteries before reimplantation
- intercostal kryo-ablation







## Conclusions

- Teaching basic surgical techniques
- Understanding disease specific pathology/pathophysiology
- Stepwise approach with regard to complexity of disease
- Watch other surgeons / visit centers of expertise

**„Develop your own technique!“**



# Leipzig Heart Center



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