

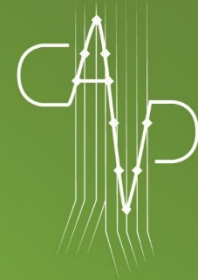


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CONTROVERSES ET ACTUALITES EN CHIRURGIE VASCULAIRE

CONTROVERSIES & UPDATES IN VASCULAR SURGERY

**JANUARY 23-25 2020**



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MARRIOTT RIVE GAUCHE & CONFERENCE CENTER | PARIS | FRANCE

Arch repair : Reducing the off-pump time

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**Disclosure**

Speaker name:

..SENAGE Thomas.....

I have the following potential conflicts of interest to report:

Consulting

Employment in industry

Shareholder in a healthcare company

Owner of a healthcare company

Other(s)

I do not have any potential conflict of interest



- Background:
  - Open technique for aortic arch repair needs body circulatory arrest
  - Solution: deep (<math><20^{\circ}\text{C}</math>) to moderate (<math>27^{\circ}\text{C}</math>) hypothermia
  - Deep Hypothermic Circulatory Arrest (DHCA) and Anterograde Selective Cerebral Perfusion (ASCP) disadvantages:
    - Prolonged CPB with increased occurrence of pulmonary, renal, cardiac and endo-thelial dysfunction
    - Reperfusion injury
    - Clotting complications



- Background:
  - Alternative?

Shortening of the body circulatory arrest time

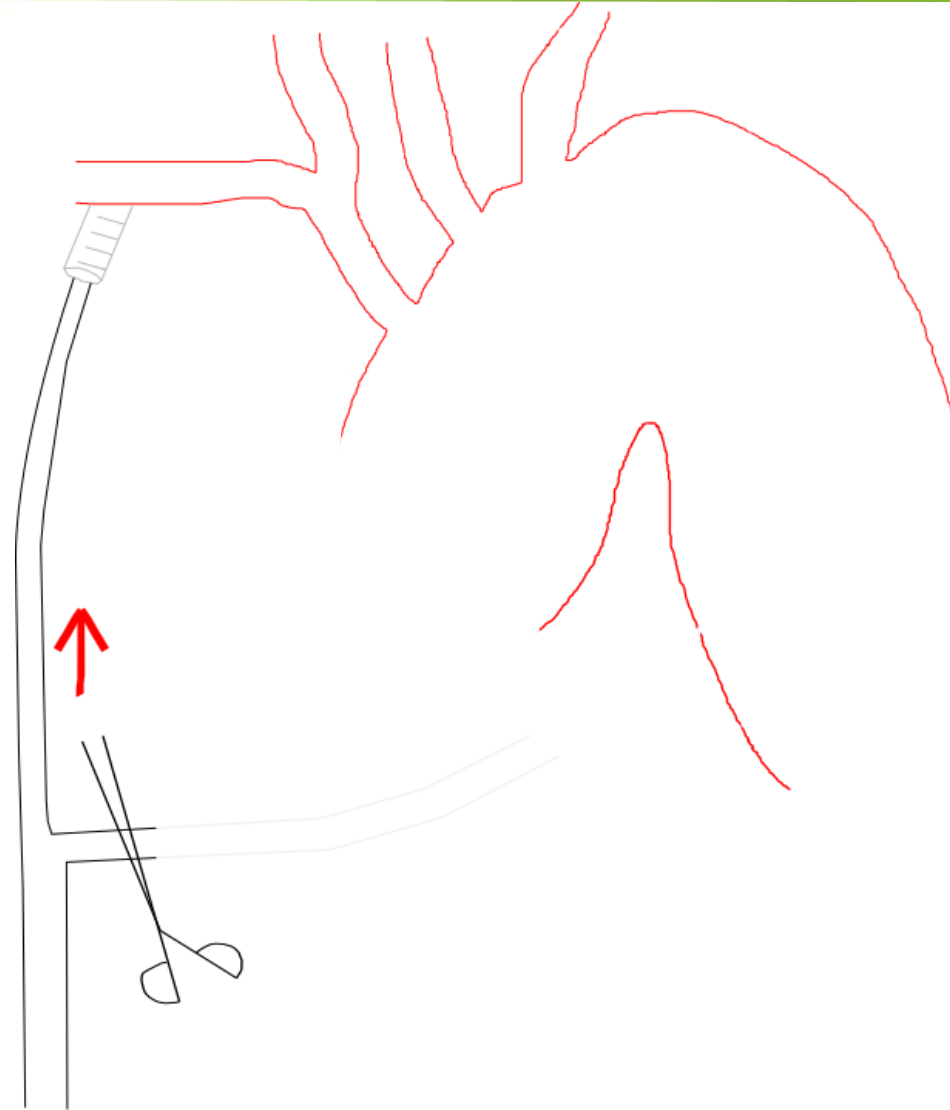


Mild hypothermia (33°C)



- Surgical steps:

CPB: Right Axillary artery  
—  
Right Atrium



Bonnet Surgical Procedure  
(SFCTCV 2017)

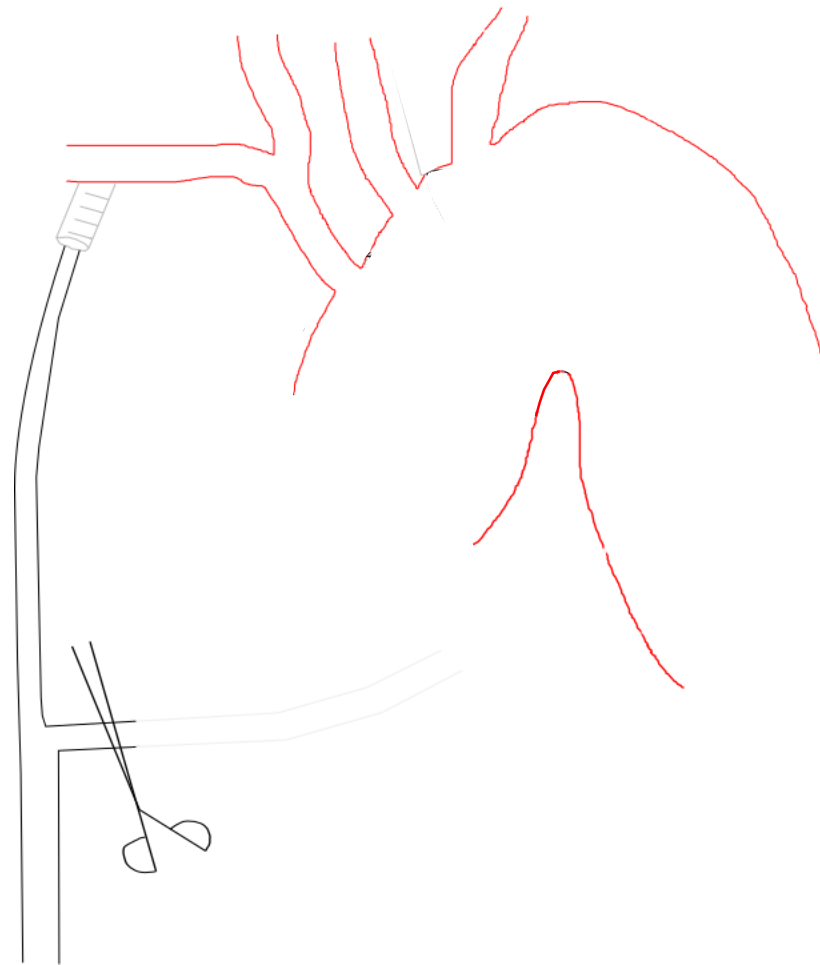


- Surgical steps :

5 mm nylon tapes around  
the aortic arch:

- one after the Brachiocephalic artery
  - one after the Commun Carotid artery
- on snuggers

Aortic clamp

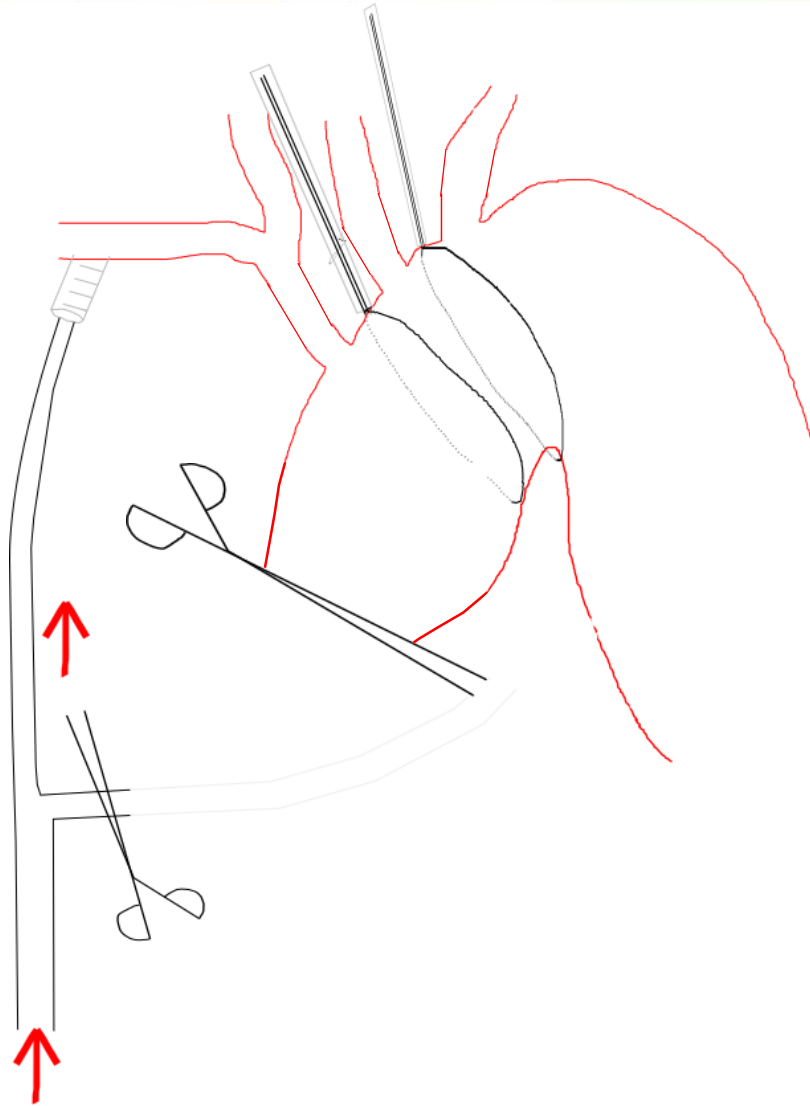




- Surgical steps :

Separation and clamping of the  
Supra Aortic Trunk vessels

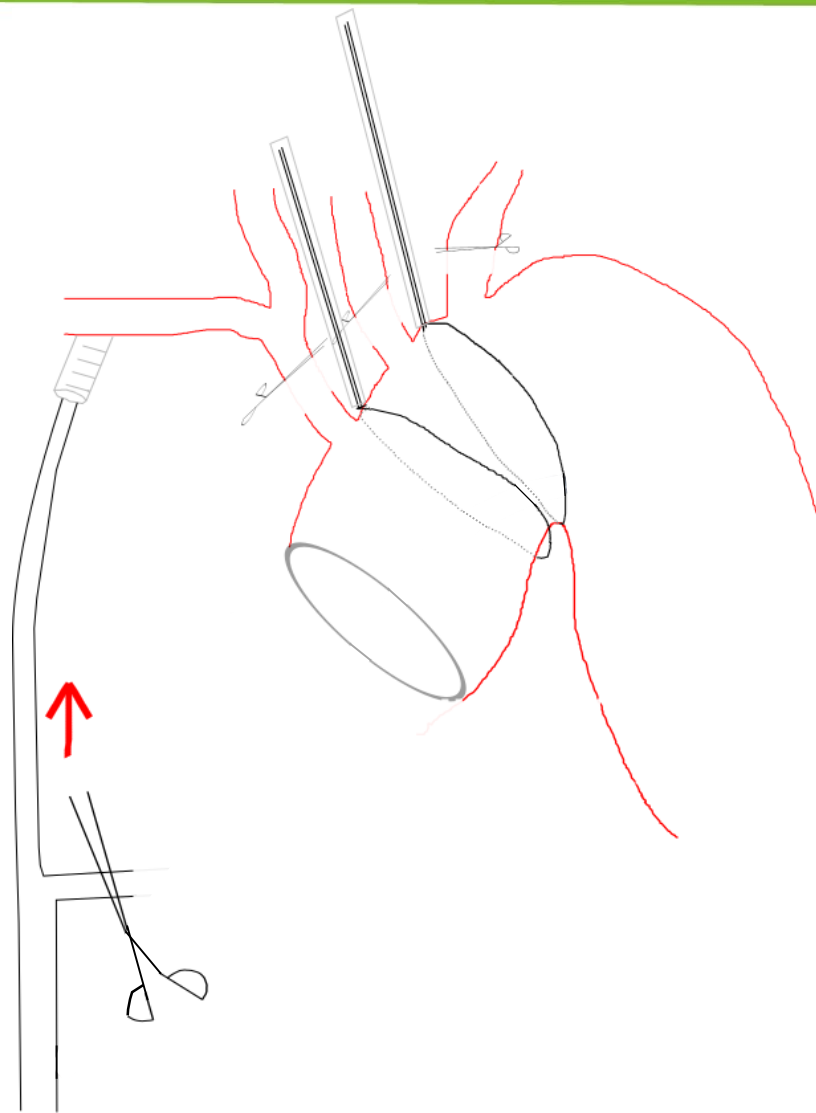
Circulatory arrest at 33°C with  
anterograd selective cerebral  
perfusion via the right  
Axillary artery  
(monitoring the NIRS)





- Surgical steps :

Frozen Elephant Trump  
insertion  
(FET)



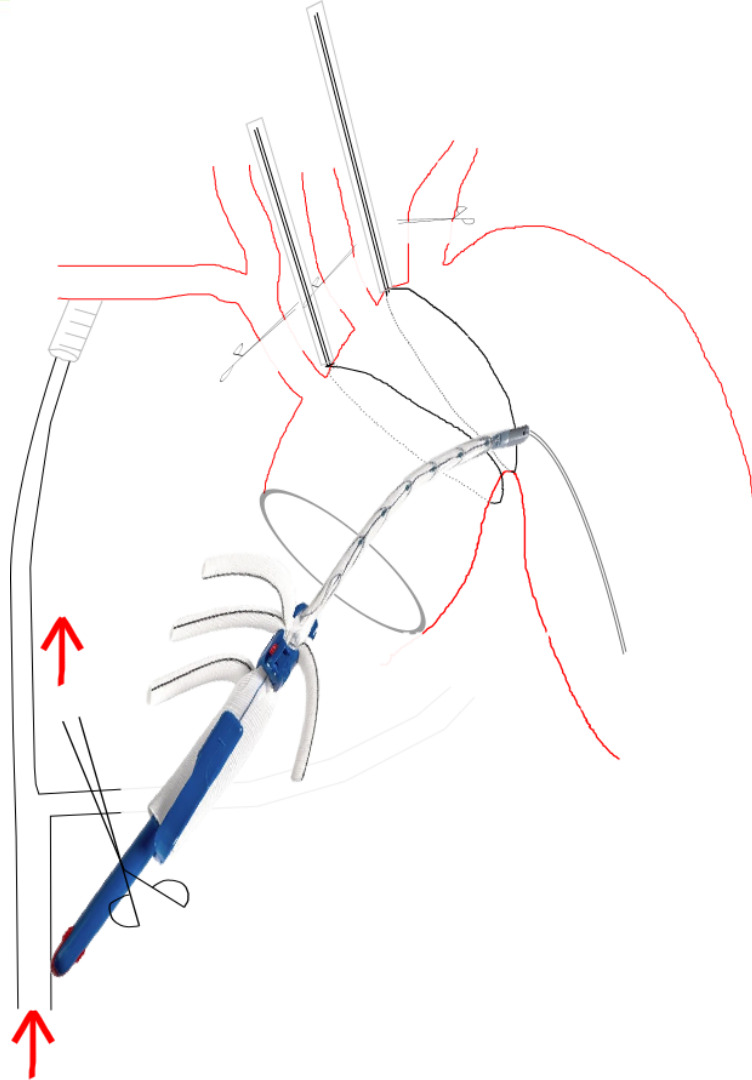




- Surgical steps :

FET deployment

Restart on the body perfusion  
via the lateral branch  
of the FET

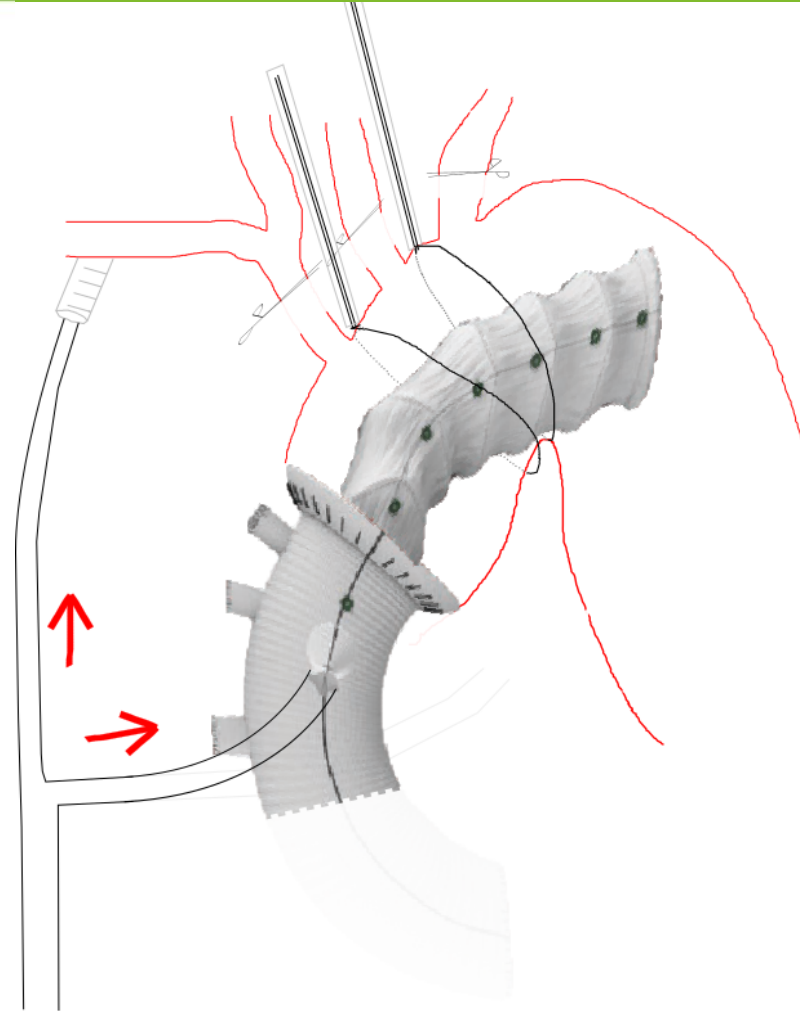




- Surgical steps :

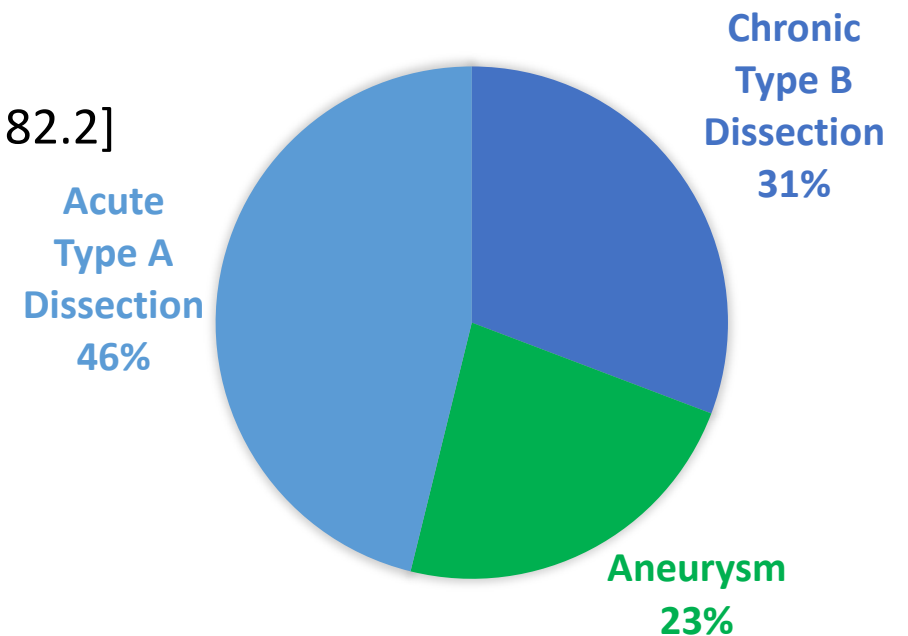
Snugging the two nylon tapes

Distal anastomosis on bypass





- Multicentric cohort (CCN Saint-Denis / La Réunion / Nantes)
- Preliminary Results (Nantes):
  - 13 patients between Jan 2018 and Jan 2020
    - 10 Male / 3 Female
    - Median operative Age: 65.6 [Min – Max: 54.0 – 82.2]
    - Indication :





- Preliminary Results : n=13
  - Surgery:
    - Medium CPB time: 253 min [Min – Max: 145 - 273]
    - 2 redo cases
    - Body Temperature: 11 patients at 32/33°C – 2 patients at 27°C
    - Circulatory Arrest with Anterograd selective cerebral perfusion:  
Median time: 9 min [Min – Max: 2 – 13]
    - Lactates at the end-CPB time: <2
  - Postoperative results:
    - 1 death (Sepsis)
    - Neurologic events: no stroke, 1 paraplegia (FET 15cm)



- Surgical steps : Specific aspects:

Two nylon tapes (carefully secured in acute dissection)

10 cm stent (spinal injury)

The left subclavian artery reimplantation

False / True Lumen

To stabilize the distal anastomosis on bypass: aneurysm / dissection



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- Conclusion:
  - Short body circulatory arrest time for Aortic arch repair is safe and reproducible
  - Improved End-CPB hemodynamic and biological results
  - Impact on postoperative morbidity?