Transcarotid transcatheter aortic valve implantation: multicenter experience in France

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Conflict of interest

- Consultant: Sorin, Xeltis
- Speakers fees: Edwards

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TAVI Transcarotid
Sapien 3

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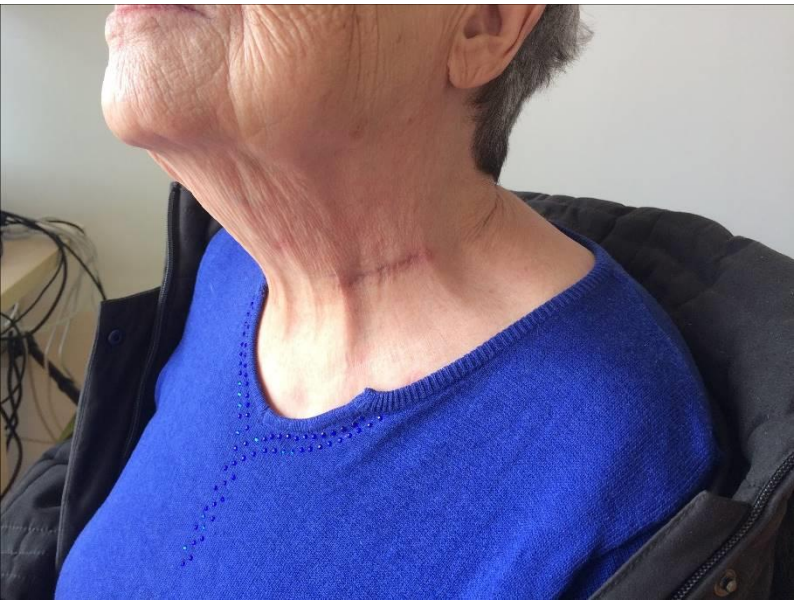
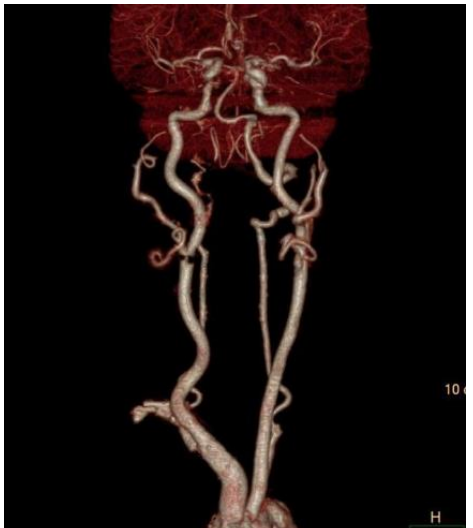
Why Carotid artery?

- The femoral approach is possible only in 80% of cases.
- Apical:problematic in respiratory insufficiency, higher †
- Trans aortic: chest opening, indirect access
- Subclavian: fragility and tuortuosity of the vessel

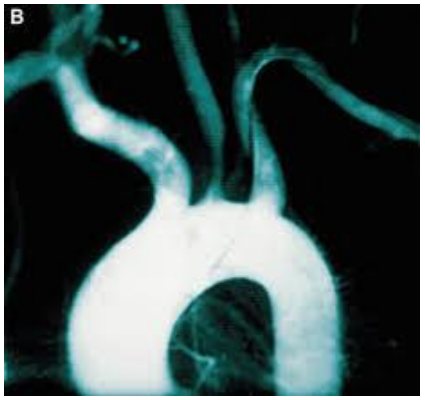
- The carotid approach offers a direct vascular access to the aortic valve, easily accessible, well known approach





Transcarotid Evaluation

- Importance of the preopertaive screening of patients:
  - Echodoppler of Carotid arteries
  - Multi detector CT of the great vessels



- CT Scan:
  - annulus aortic diameter
  - Type of aortic valve (bicuspid)
  - Coronaries implantation (height)
  - Vascualr anatomy :
    - ✓ Diameter of the vessels
    - ✓ Tortuosity
    - ✓ Calcifications
    - ✓ Angulation : between the aortic arch and the carotid arteries

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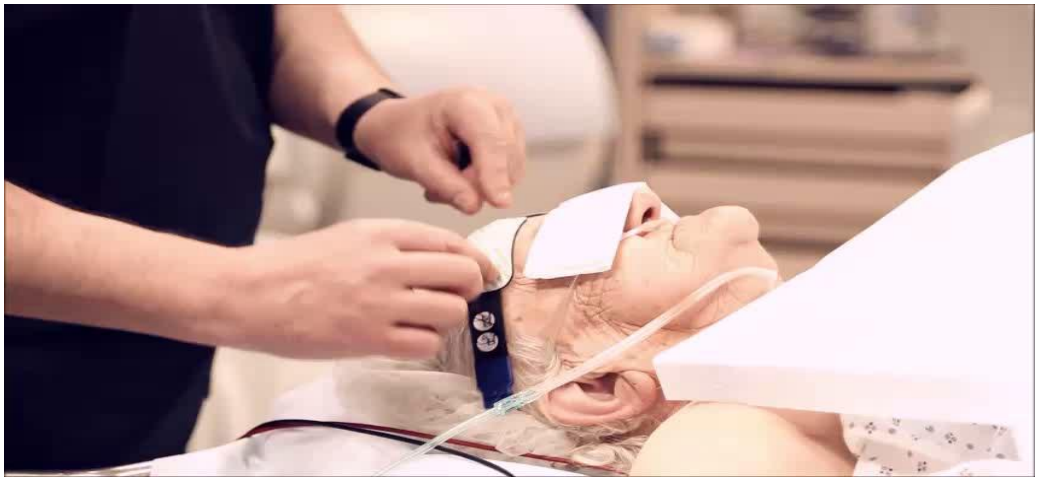
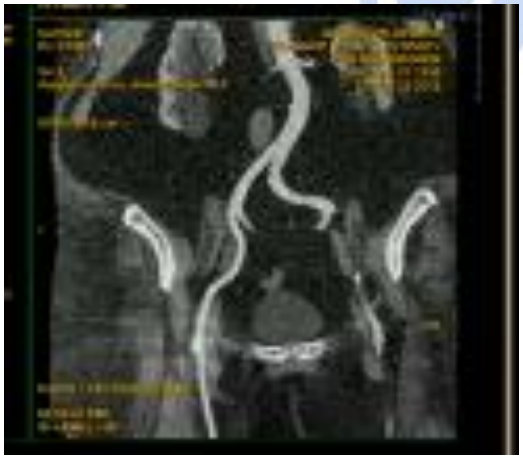
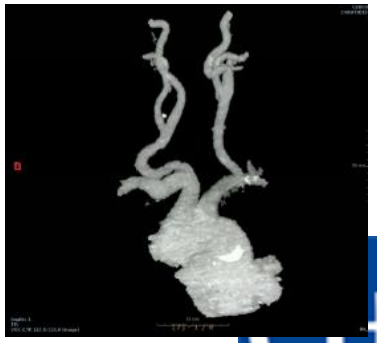
Indications of transcarotid

- When femoral is not possible.





- Trancarotid is possible if:
  - ✓ Diameter internal common carotid artery at least 7mm
  - ✓ No significant stenosis or tortuosity
  - ✓ Absence of calcifications
  - ✓ Controlaterale carotid without stenosis
  - ✓ No prior stroke



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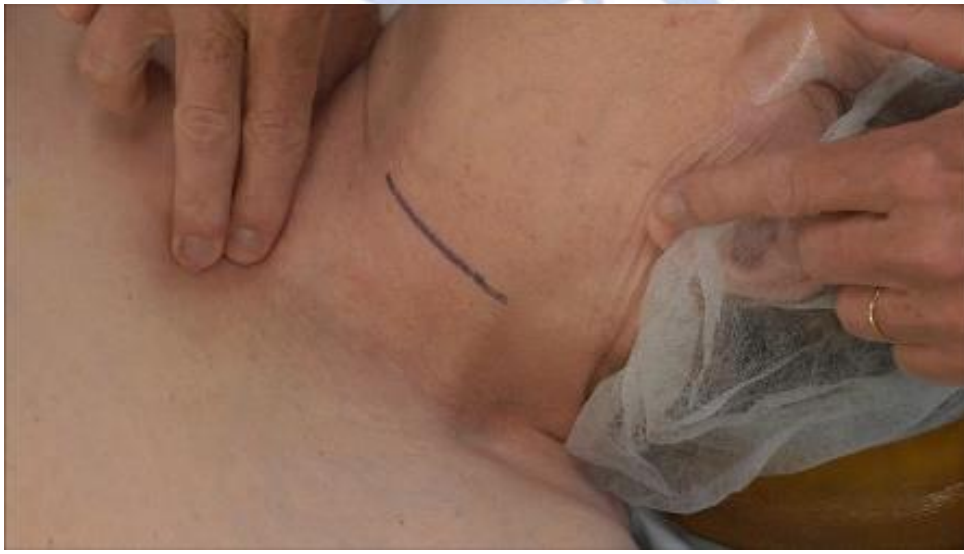
Transcarotid procedure/ Anesthesia

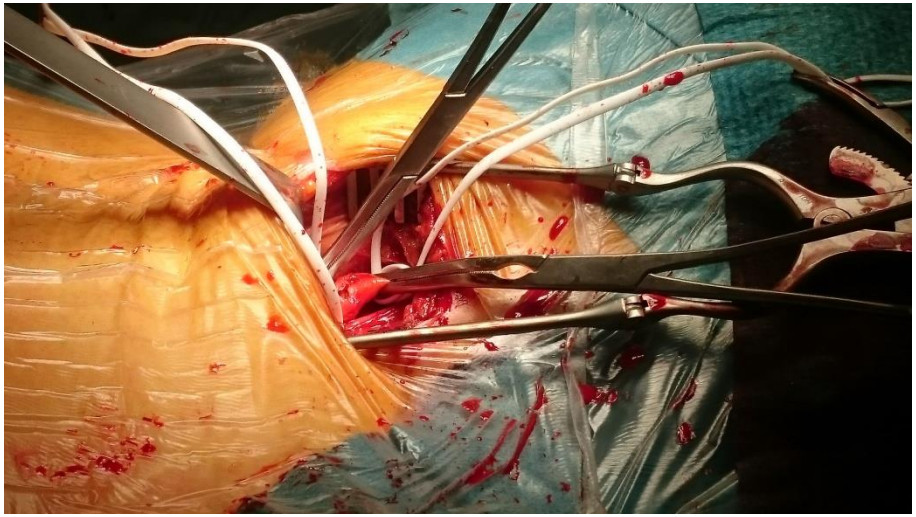


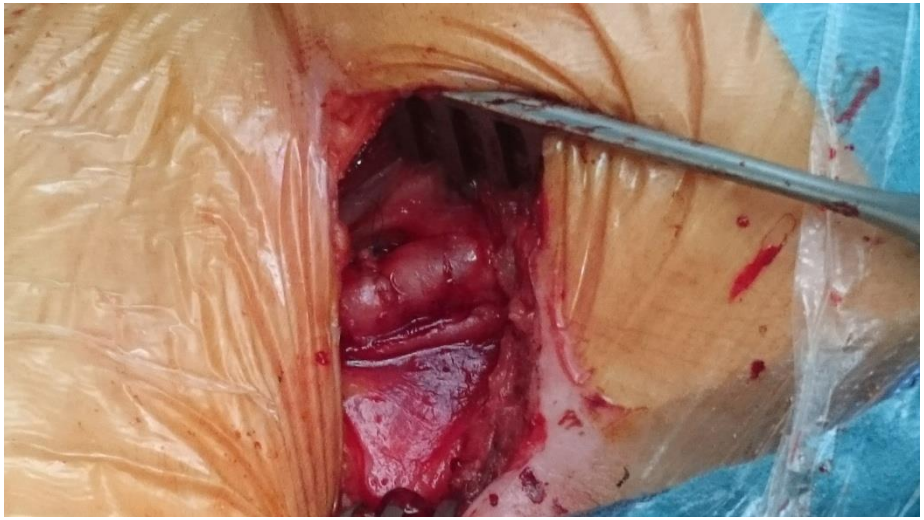
Anesthesia:

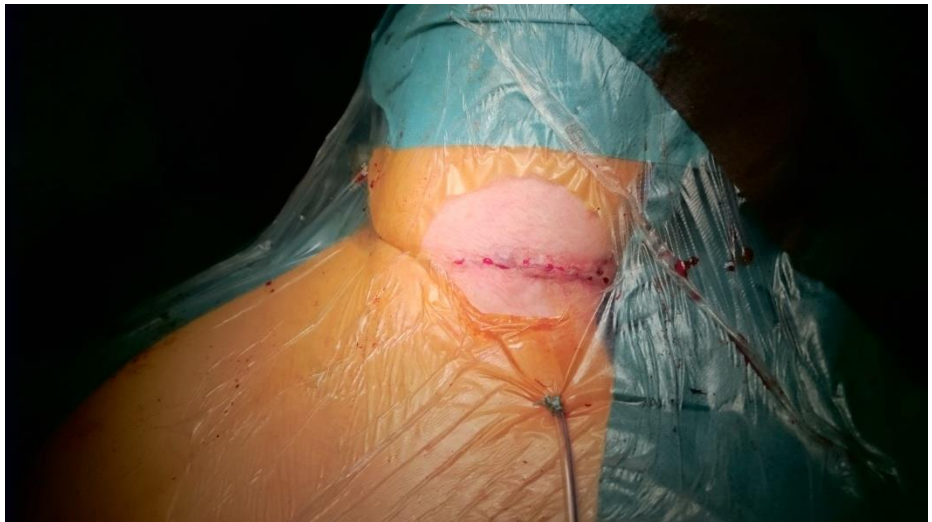
- General (can be done regional block)
- Radial catheter, and venous peripheral line
- NIRS
- Warming blanket
- 5 cm curvilinear incision 2 finger breaths from the manubrium

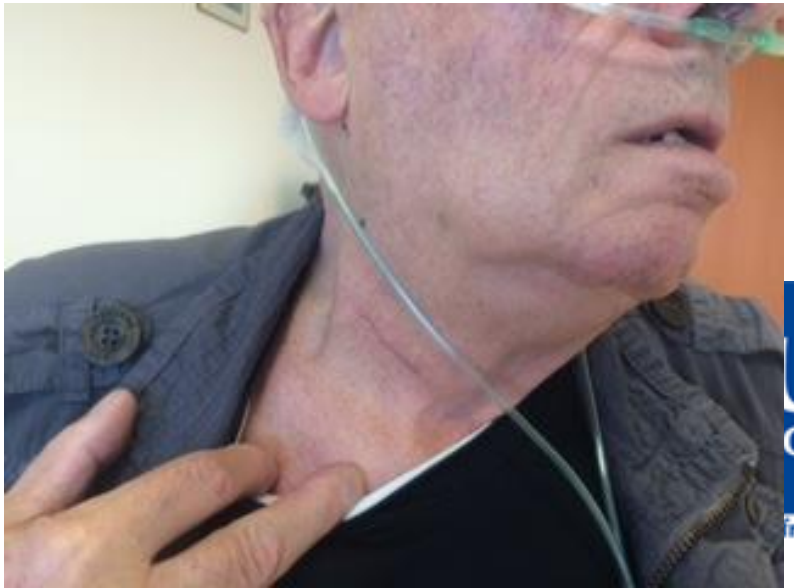
Transcarotid procedure/ Closure

- Removal of sheath, clamping of the carotid
- Vascular closure, carotid purging
- Closure on a small drain









Transcarotid Methods

All Patients were prospectively entered in France TAVI database

- All consecutive transcarotid patients done from January 2013 to November 2015 in three different centers in France (2 university, one university affiliated)
- TAVI scan showed: proximal segment of the CCA diameter(>7 mm) and without calcification, stenosis or severe tortuosity
- Transcranial doppler was done in the beginning of the experience or MRI
- **TWO TYPES OF PROSTHESIS USED:**

1. self-expandable *Medtronic CoreValve (MCV) (Medtronic, Minneapolis, Minnesota)*
2. balloon-expandable *Edwards SAPIEN XT valve (ESV) (Edwards Lifesciences, Irvine, California)*

OBJECTIVES

- **FIRST END-POINT: evaluation 30-day mortality**
- **SECOND END-POINT: evaluation TAVI**
- **results according VARC II criteria**

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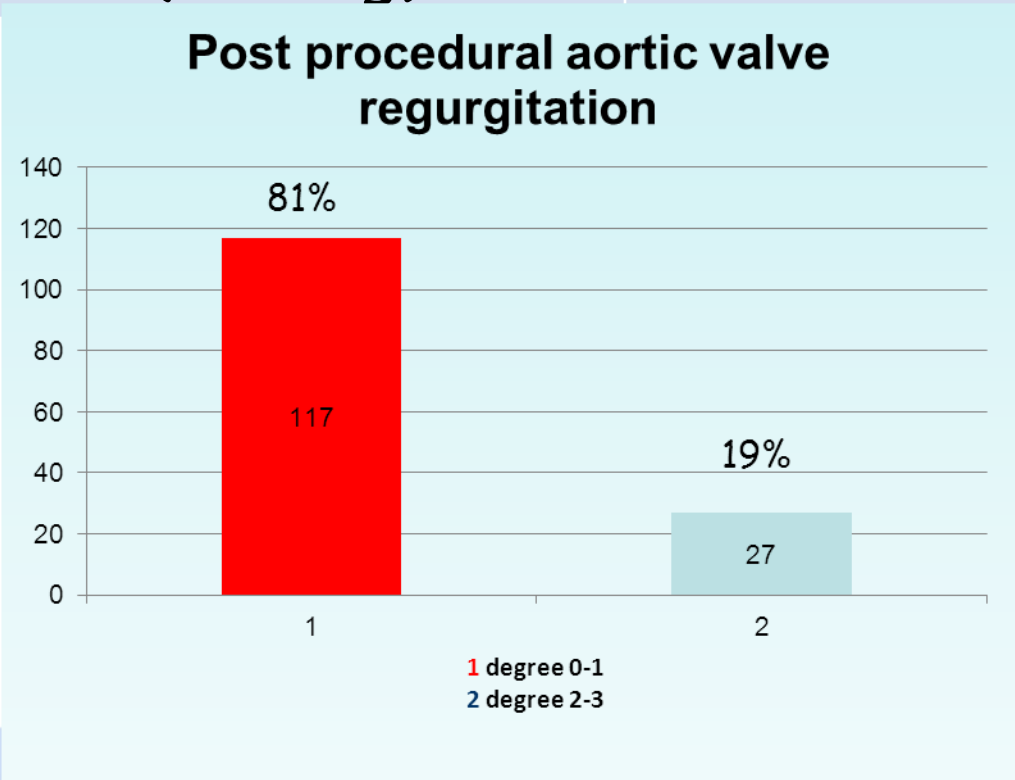
Multicenter data

Total Patients n=144			
Mean age (years)	79.8 ± 8.7	Respiratory Insufficiency	(59) 41%
Sex (female)	59.1%	Diabetes	(52) 36%
Logistic EuroSCORE	20.7% ± 12.6%	Chronic renal insufficiency	(79) 55%
Valve in valve	(4) 2.8%	EF (%)	51.9
Previous CABG	(32) 22.2%	Mean aortic gradient (mmhg)	45.7 ± 12.5
Peripheral vascular disease (PVD)	(82) 56%	Aortic Valvular mean Surface (cm^2)	0.76

- Contraindication for conventional aortic valve surgery
- The transfemoral approach and apical approach was not possible in these patients due
- to either respiratory insufficiency or PVD

Results 1

PROCEDURAL SUCCESS (144) 100%	
Post procedural mean gradient (mm Hg)	7.2 ± 4.9



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Results 2

30 DAYS SURVIVAL (N=135) 93.75%	
TIA/ cerebral stroke	(n=8) 5.5 %
Localized carotid dissection asymptomatic	(n=1) 0.6 %
PPM implantation	(n=32) 22.2 %
Infection complication	(n=6) 4.1 %
Bleeding complication	(n=37) 25,6 %
Hospital stay (days)	11.7 ±6.6

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France TAVI registry

- 1st January 2013 / 17 March 2016
- 14 633 patients = 400 patients Carotid TAVI
- Out of 2097 non-femoral (19%)

- Mortality/Stroke:
  - ❖ Transapical † 7,7% St 1,8%
  - ❖ Transaortic † 19% St 1,4%
  - ❖ Sub clavian † 3,4% St 4,2%
  - ❖ Carotid † 3,6% St 2,5%

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Conclusion

- **TAVI through the *CCA* approach is feasible and safe**
- ***CCA* approach offers a direct route to the aortic valve with a shorter distance between the arterial entry point and the aortic annulus**
- **It is an alternative for patients with PVD and respiratory insufficiency and/or poor EF**

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TAVI/University Diploma

Frais d'inscriptions

Droits pédagogiques : FC 2 000 € TTC
Droits pédagogiques : FI 1 500 € TTC

Droits administratifs 261,10 € TTC

Conditions d'admissions

Parcours médical et chirurgical :
- Médecin ou chirurgiens confirmés ou en formation (internat, post-internat…)

Parcours paramédical et ingénieur
- IDE, IBODE, ingénieurs diplômés ou équivalent Master 2, ingénieurs commerciaux.

Modalités d'inscription

Un CV et une lettre de motivation doivent être envoyés par mail à adresse suivante :
marion.bernard@univ-lorraine.fr

Contact secretariat: Marion BERNARD
Hôpital Virtuel
ECOLE DE CHIRURGIE
Faculté de Médecine
Bâtiment D - 2ème étage
9 avenue Forêt de Haye
54505 VANDOEUVRE-lès-NANCY
Tel : (+33) 3 83 68 33 93

Modalités d'enseignement

Les connaissances théoriques sont dispensées en ligne en enseignement à distance, pour un total de 180 heures de travail individuel réparti sur l'année (à raison de 4h/semaine).

Les enseignements pratiques de chirurgie sur simulateur et sur modèle animal ont lieu à l'Ecole de Chirurgie, Faculté de Médecine de Nancy (60 heures de travaux pratiques réparti en 3 sessions de 2 jours).

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UTOP

Diplôme Universitaire de PRATIQUES CHIRURGICALES ENDOVALVULAIRES CARDIAQUES

Responsables :
Pr. T. FOLLIGUET & Pr. P. MAUREIRA

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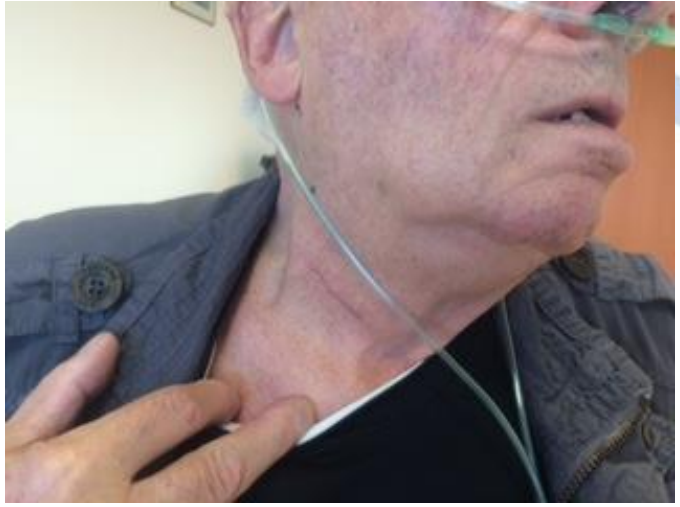

Thank You

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Service de chirurgie cardiovasculaire et transplantation

CHU Brabois

Vandoeuvre les nancy

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