

Le TAVI quand et pour qui?

03/02/2018

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L'INSTITUT
MUTUALISTE
MONTSORIS

Le rétrécissement aortique calcifié: Aspect anatomique



Valve normale



Valve calcifiée

Prévalence

- Prevalence²:
 - 2% >65 ans
 - 3% >75 ans
 - 4% >85 ans
 - Plus fréquente des maladies valvulaires
- 500 000 personnes en France ont >90 ans
- Registre STS 16% des TAVI réalisés >90 ans

¹ Otto CM. *Circulation* 1994;90:844-853.

² Steward BF. *J Am Coll Cardiol* 1997;29:630-634.



CoreValve Medtronic

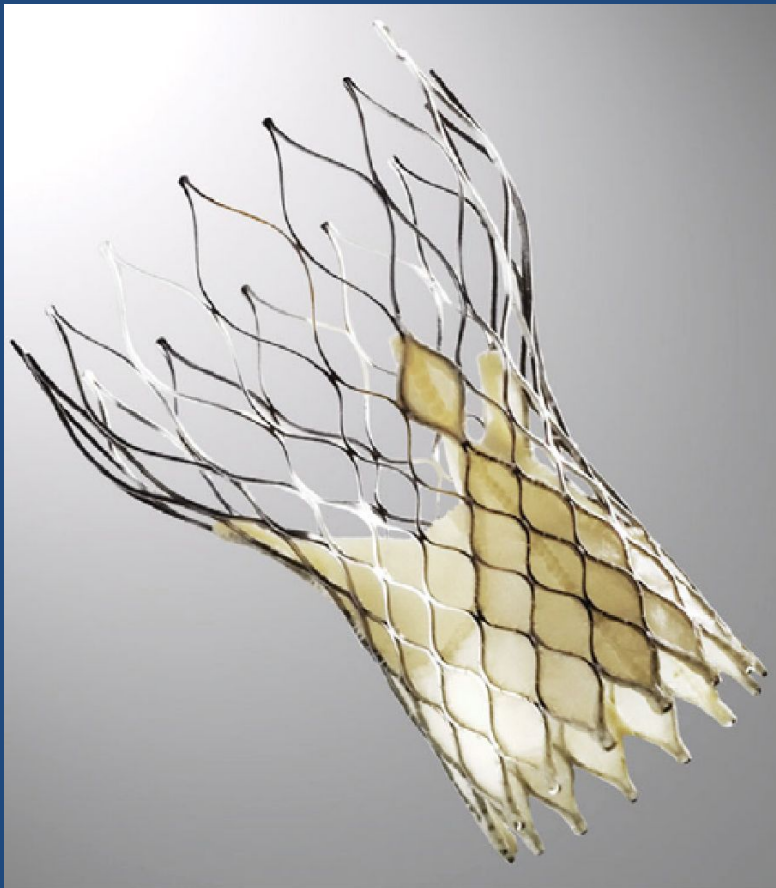


Figure 2 The CoreValve prosthesis.

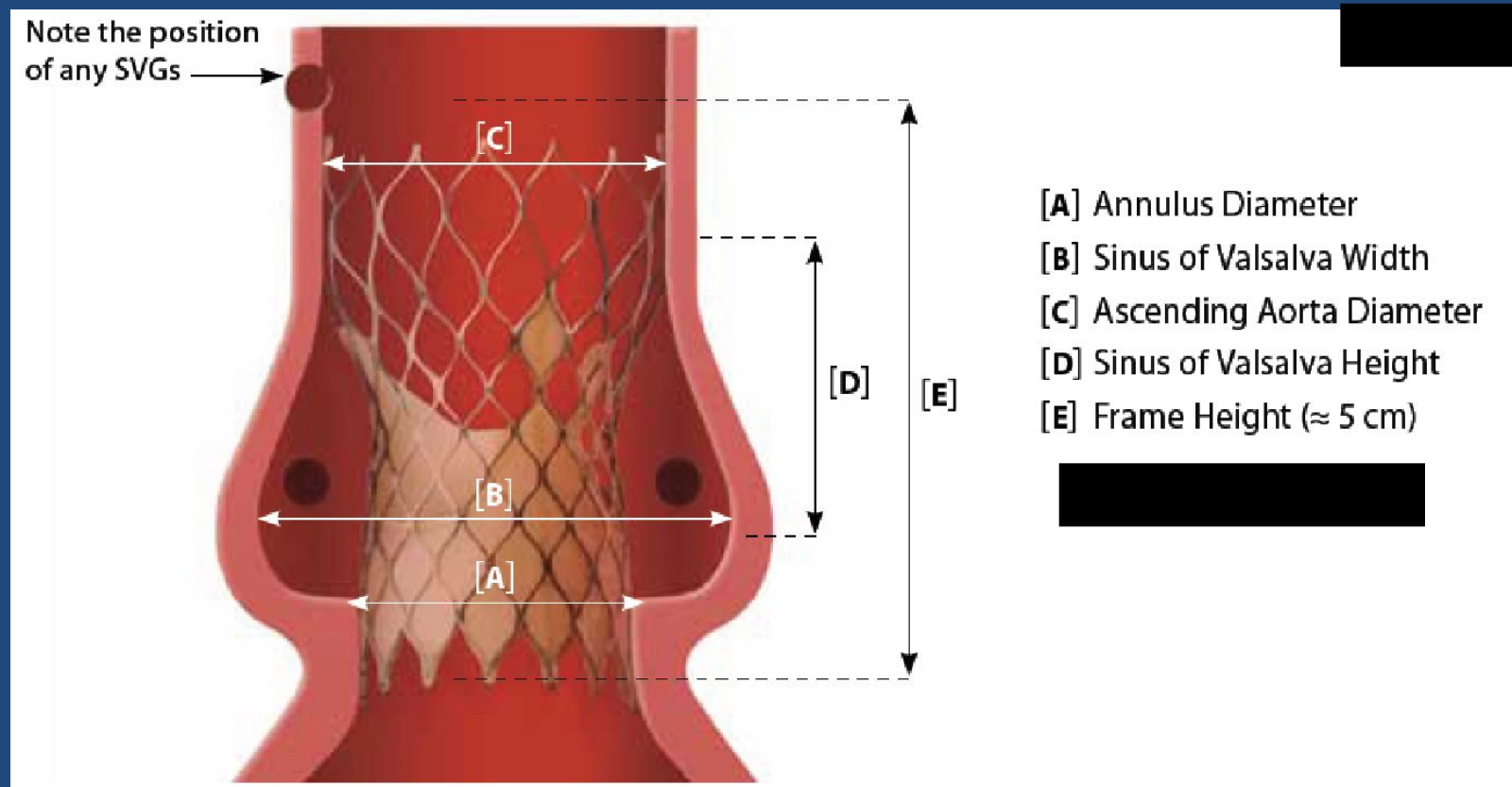
3 feuillets de péricarde porcine

Edwards Sapiens 3

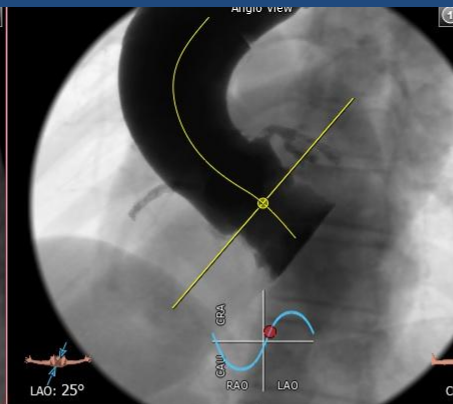
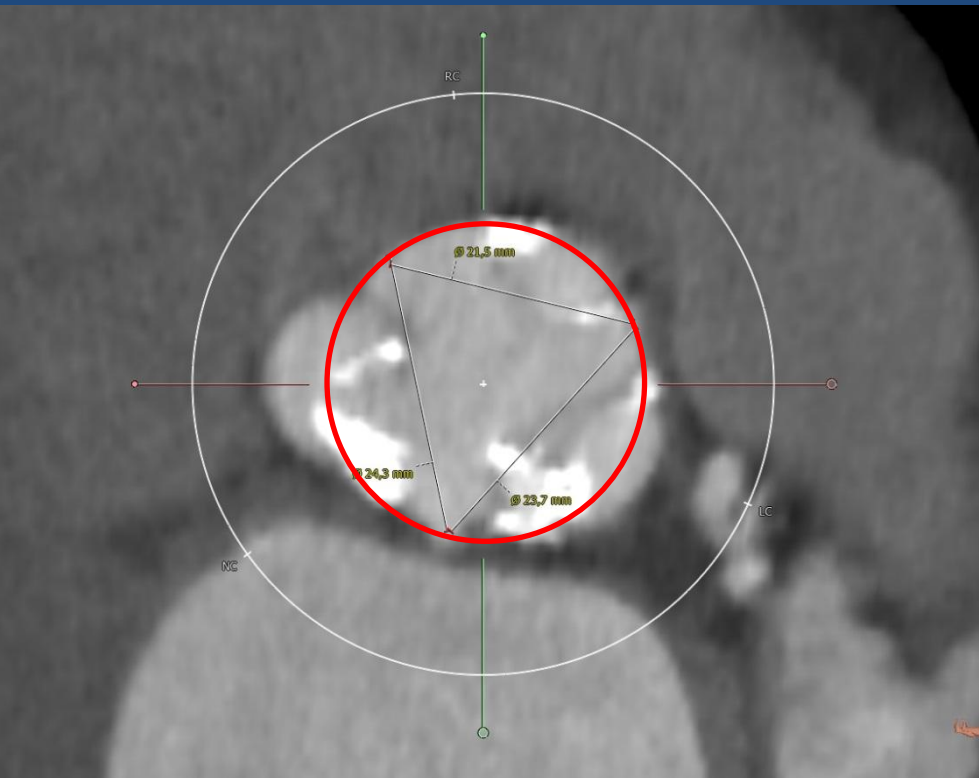


3 feuillets de péricarde bovin

CoreValve[®] Bioprosthesis In-situ



Evaluation Scanner: 1: Anneau

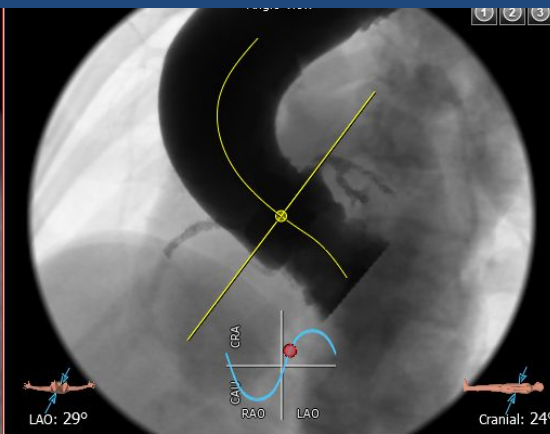


Diam=
 $(21.5+24.3+23.7)/3 \times 1.155 = 26.3 \text{ mm}$

Evaluation Scanner:

2: coronaires

3: incidence



Compass: 50,0 mm
Distance: 10,9 mm
PEDE, SIMONE
14/01/1928
109403

Vessel View

Vessel View

Aorte T
13/05
Phase:



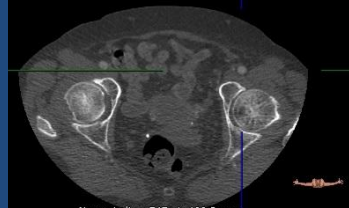
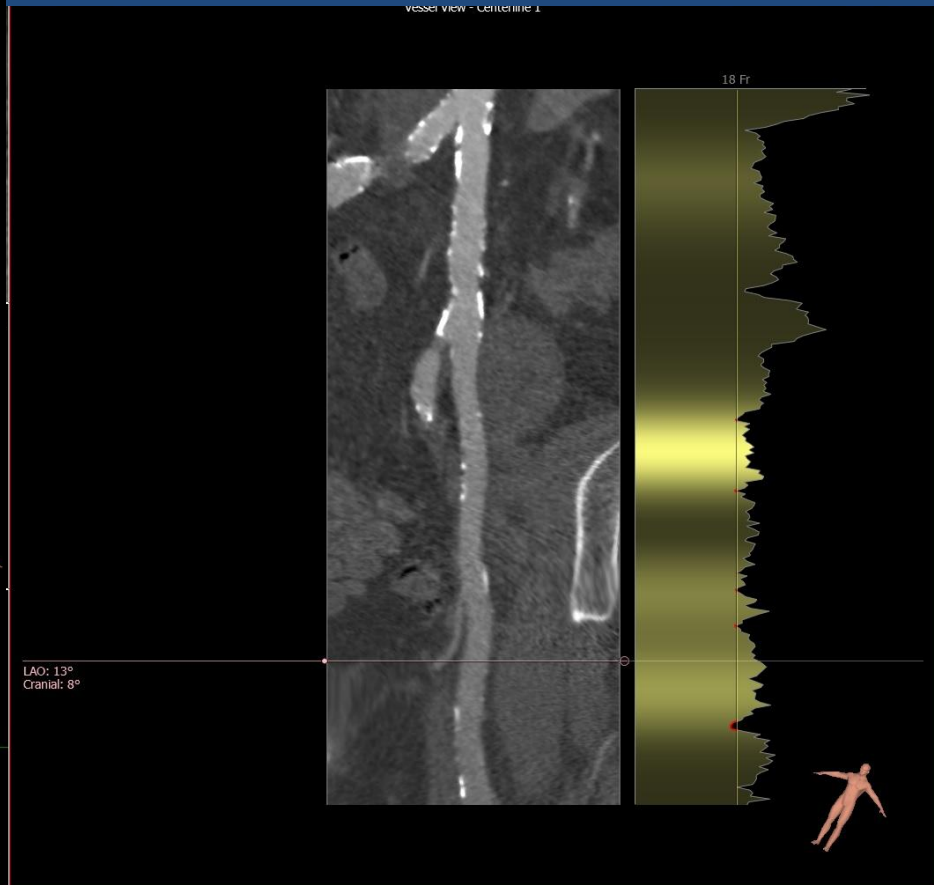
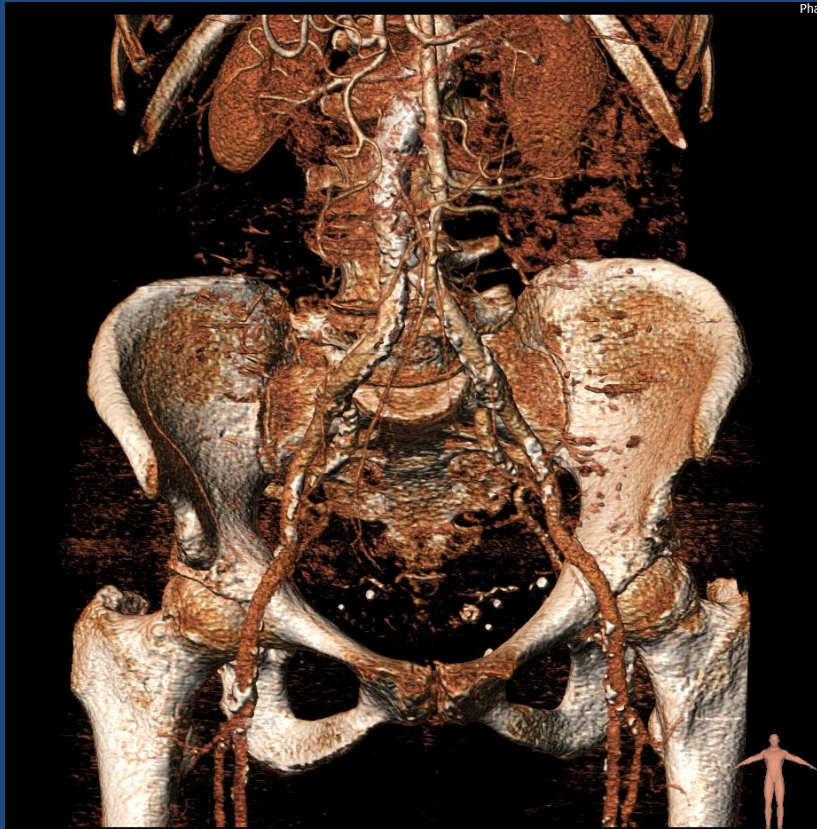
Basal plane



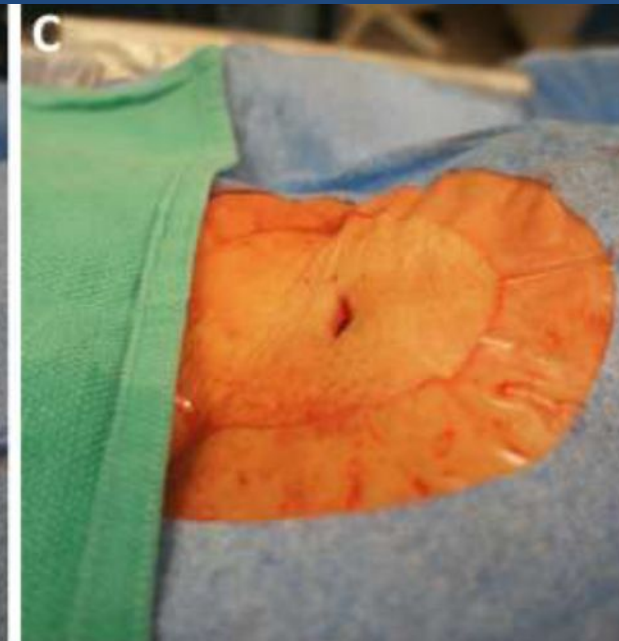
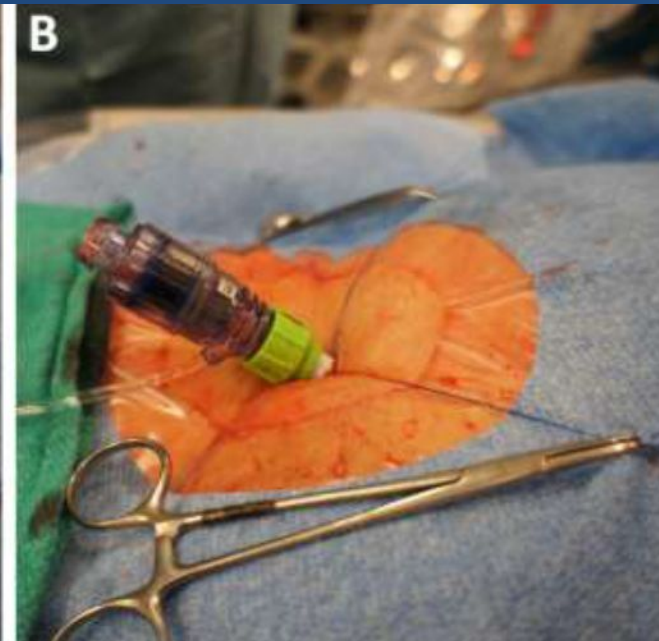
Basal pl

Evaluation scanner

4: Voie d'abord



Systeme de fermeture percutané



GE MEDICAL SYSTEMS
INSTITUT MUTUALISTE MONSIEUR
CHRISTOPHE CAUSSIN

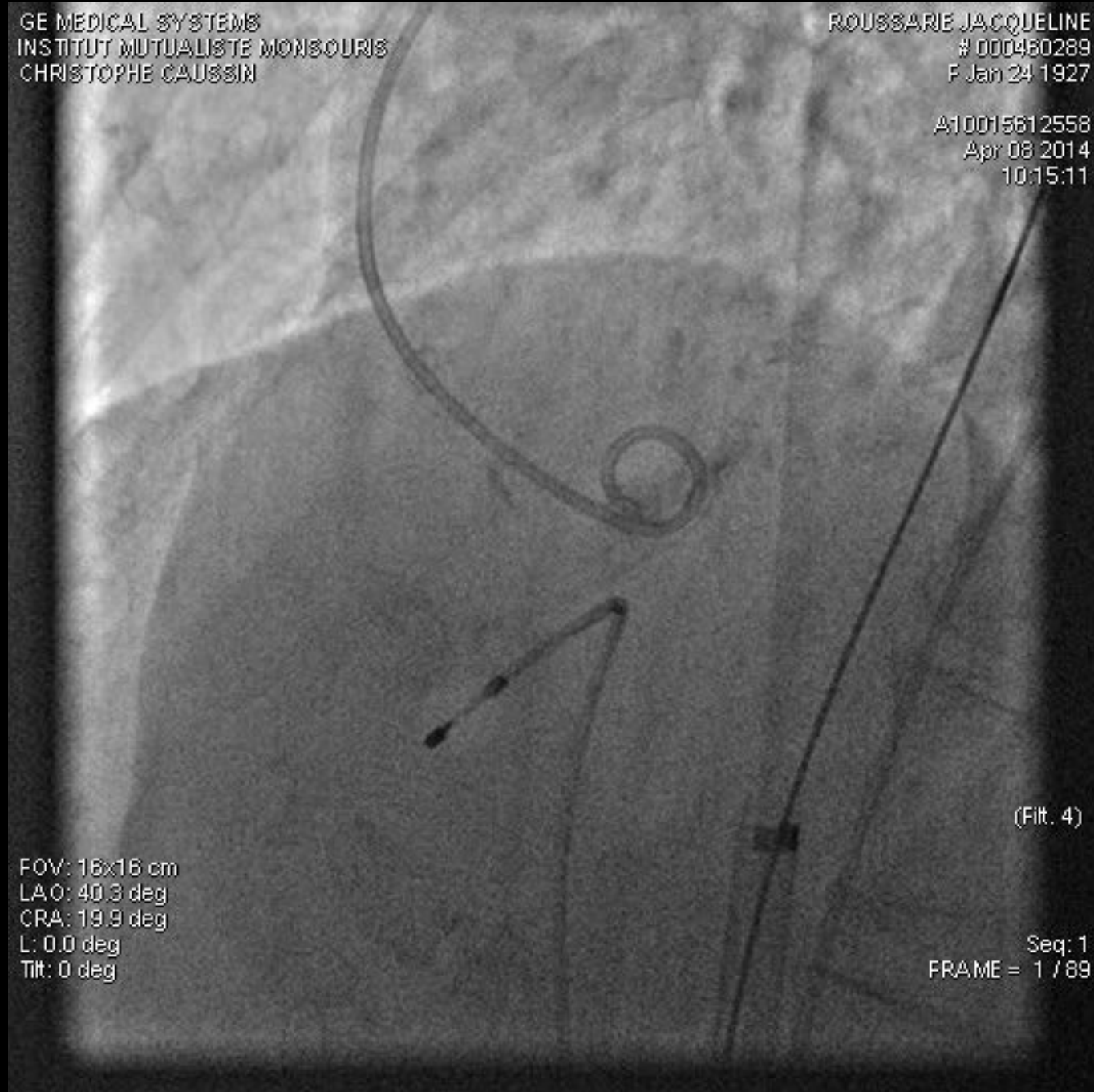
ROUSSARE JACQUELINE
000480289
F Jan 24 1927

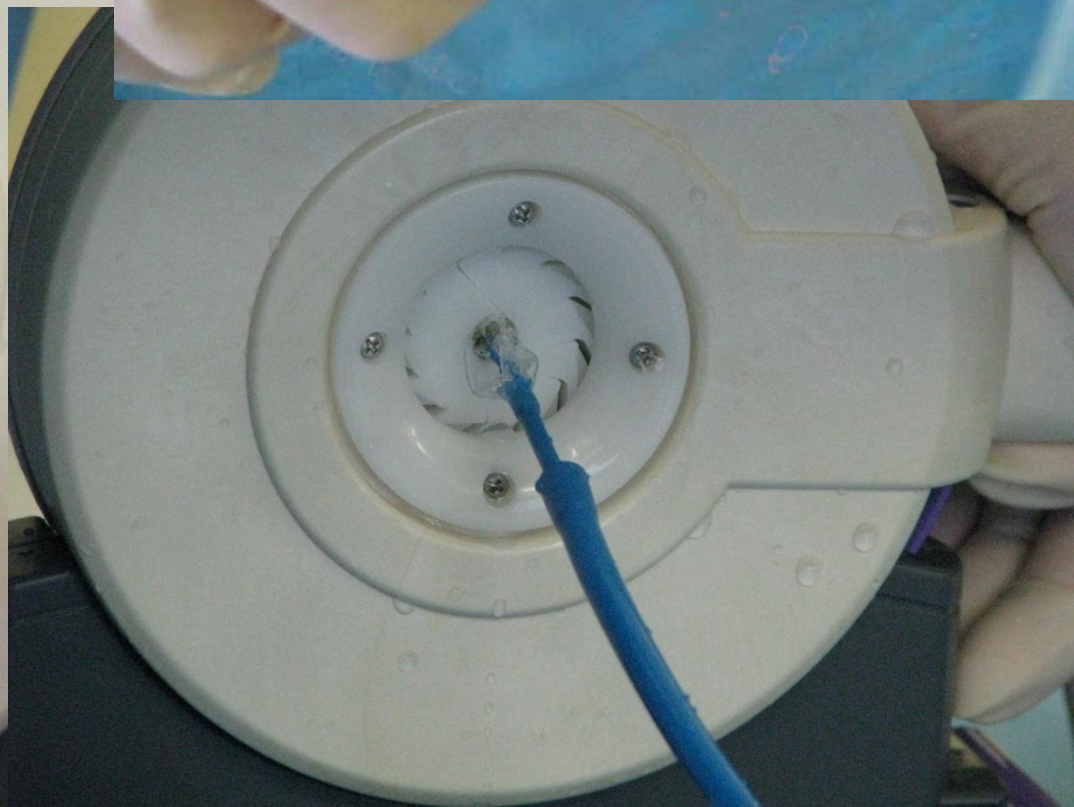
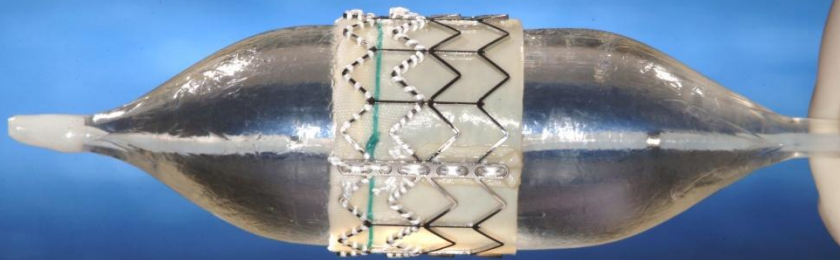
A10015612558
Apr 08 2014
10:15:11

FOV: 16x16 cm
LAO: 40.3 deg
CRA: 19.9 deg
L: 0.0 deg
Tilt: 0 deg

(Flt. 4)

Seq: 1
FRAME = 1 / 89





GE MEDICAL SYSTEMS
INSTITUT MUTUALISTE MONSIEURIS
CHRISTOPHE CAUSSIN

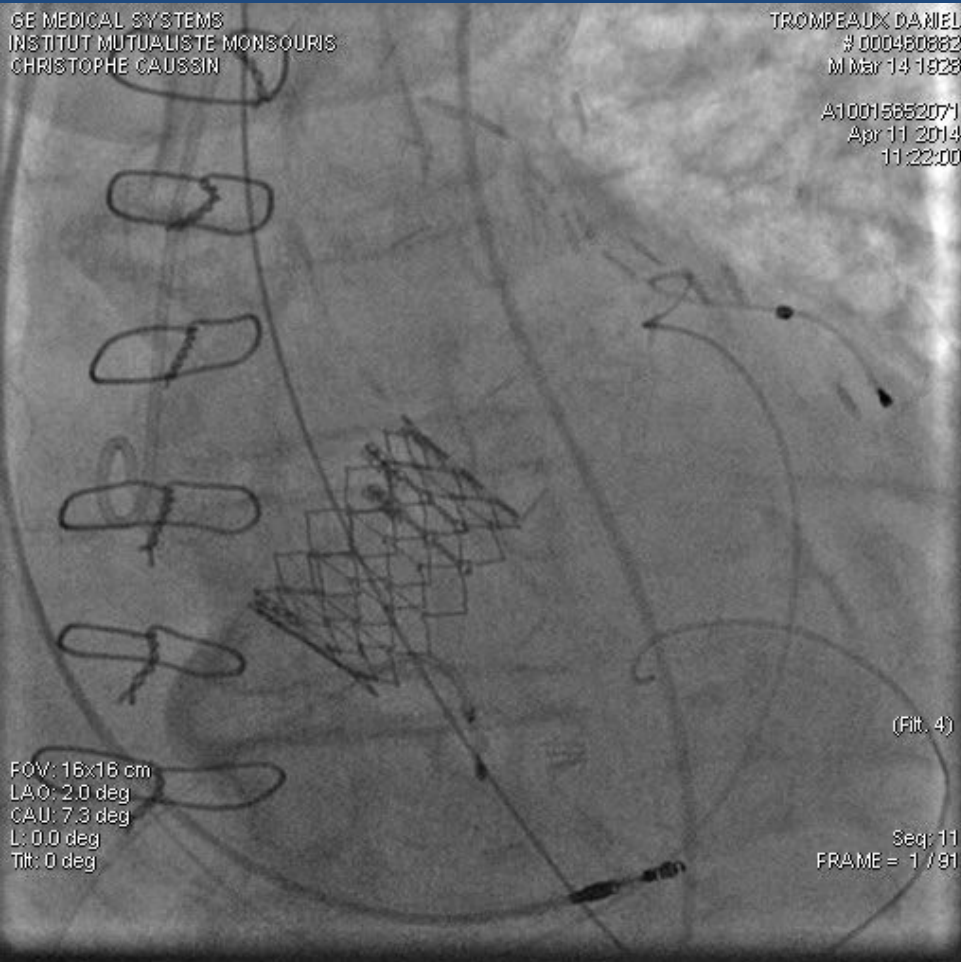
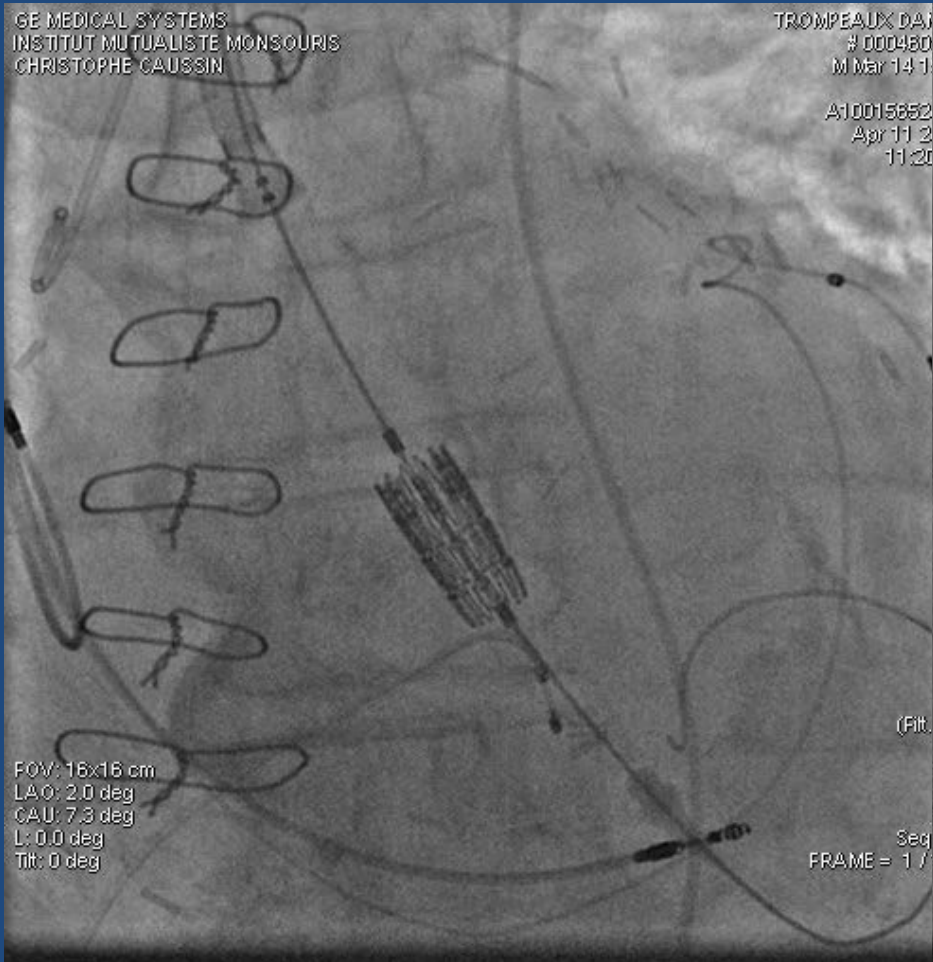
TROMPEAUX DANIEL
000480
M Mar 14 11

GE MEDICAL SYSTEMS
INSTITUT MUTUALISTE MONSIEURIS
CHRISTOPHE CAUSSIN

TROMPEAUX DANIEL
000480882
M Mar 14 1928

A10015852
Apr 11 2014
11:20

A10015852071
Apr 11 2014
11:22:00



FOV: 16x16 cm
LAO: 2.0 deg
CAU: 7.3 deg
L: 0.0 deg
Tilt: 0 deg

FOV: 16x16 cm
LAO: 2.0 deg
CAU: 7.3 deg
L: 0.0 deg
Tilt: 0 deg

Seq
FRAME = 1 / 91

Seq: 11
FRAME = 1 / 91

(Fit

(Fit. 4)

GE MEDICAL SYSTEMS
INSTITUT MUTUALISTE MONSOURIS
CHRISTOPHE CAUSSIN

SIMON JACQUELINE
000464367
F Mar 05 1929

A10015972362
May 22 2014
09:45:40

FOV: 16x16 cm
LAO: 26.9 deg
CAU: 0.3 deg
L: 0.0 deg
Tilt: 0 deg

(Filt. 4)

Seq: 1
FRAME = 1 / 107

GE MEDICAL SYSTEMS
INSTITUT MUTUALISTE MONSOURS
CHRISTOPHE CAUSSIN

SIMON JACQUELINE
000464367
F Mar 05 1929

A10015972362
May 22 2014
10:01:32

FOV: 18x18 cm
LAO: 26.6 deg
CAU: 0.5 deg
L: 0.0 deg
Tilt: 0 deg

(Fit. 4)

Seq: 3
FRAME = 1 / 71

GE MEDICAL SYSTEMS
INSTITUT MUTUALISTE MONSIEURIS
CHRISTOPHE CAUSSIN

SIMON JACQUELINE
000484367
F Mar 05 1928

A10015972382
May 22 2014
10:08:05

FOV: 16x16 cm
LAO: 28.6 deg
CAU: 0.5 deg
L: 0.0 deg
Tilt: 0 deg

(Flt. 4)

Seq: 4
FRAME = 1 / 60

GE MEDICAL SYSTEMS
INSTITUT MUTUALISTE MONSOURS
CHRISTOPHE CAUSSIN

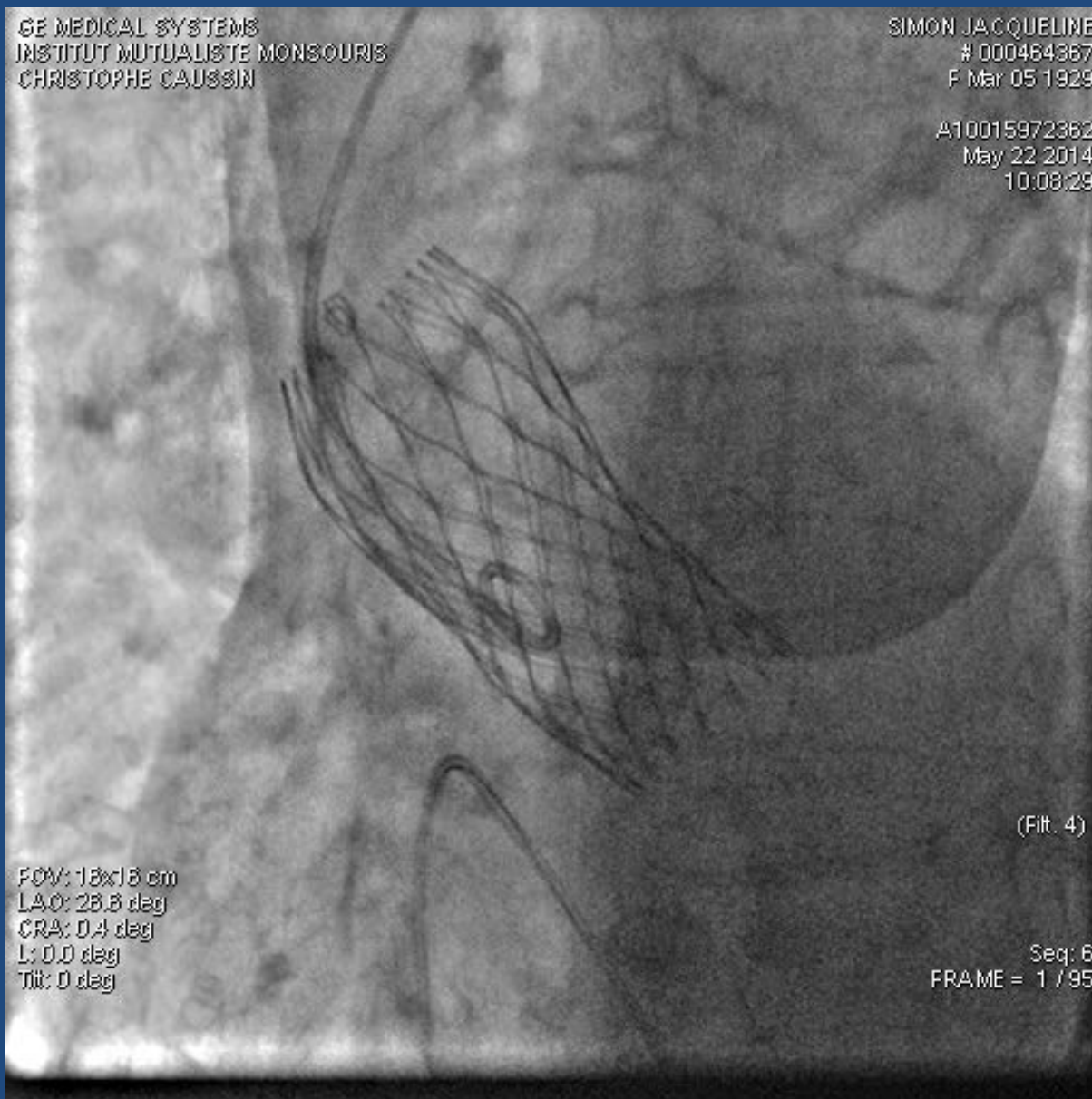
SIMON JACQUELINE
000464367
F Mar 05 1929

A10015972362
May 22 2014
10:08:29

FOV: 18x18 cm
LAO: 26.8 deg
CRA: 0.4 deg
L: 0.0 deg
Tilt: 0 deg

(Flt. 4)

Seq: 6
FRAME = 1 / 95



TAVI

- Nouvelles recommandations européennes

2017 ESC/EACTS Guidelines for the management of valvular heart disease

The Task Force for the Management of Valvular Heart Disease of the European Society of Cardiology (ESC) and the European Association for Cardio-Thoracic Surgery (EACTS)

Authors/Task Force Members: Helmut Baumgartner* (ESC Chairperson) (Germany), Volkmar Falk*¹ (EACTS Chairperson) (Germany), Jeroen J. Bax (The Netherlands), Michele De Bonis¹ (Italy), Christian Hamm (Germany), Per Johan Holm (Sweden), Bernard Iung (France), Patrizio Lancellotti (Belgium), Emmanuel Lansac¹ (France), Daniel Rodriguez Muñoz (Spain), Raphael Rosenhek (Austria), Johan Sjögren¹ (Sweden), Pilar Tornos Mas (Spain), Alec Vahanian (France), Thomas Walther¹ (Germany), Olaf Wendler¹ (UK), Stephan Windecker (Switzerland), Jose Luis Zamorano (Spain)

RAC serré symptomatique

B) Choice of intervention in symptomatic aortic stenosis

Aortic valve interventions should only be performed in centres with both departments of cardiology and cardiac surgery on site and with structured collaboration between the two, including a Heart Team (heart valve centres).

I

C

The choice for intervention must be based on careful individual evaluation of technical suitability and weighing of risks and benefits of each modality (aspects to be considered are listed in Table 7). In addition, the local expertise and outcomes data for the given intervention must be taken into account.

I

C

SAVR is recommended in patients at low surgical risk (STS or EuroSCORE II < 4% or logistic EuroSCORE I < 10%^d and no other risk factors not included in these scores, such as frailty, porcelain aorta, sequelae of chest radiation).⁹³

I

B

TAVI is recommended in patients who are not suitable for SAVR as assessed by the Heart Team.^{91,94}

I

B

In patients who are at increased surgical risk (STS or EuroSCORE II ≥ 4% or logistic EuroSCORE I ≥ 10%^d or other risk factors not included in these scores such as frailty, porcelain aorta, sequelae of chest radiation), the decision between SAVR and TAVI should be made by the Heart Team according to the individual patient characteristics (see Table 7), with TAVI being favoured in elderly patients suitable for transfemoral access.^{91,94–102}

I

B

Balloon aortic valvotomy may be considered as a bridge to SAVR or TAVI in haemodynamically unstable patients or in patients with symptomatic severe aortic stenosis who require urgent major non-cardiac surgery.

IIb

C

Balloon aortic valvotomy may be considered as a diagnostic means in patients with severe aortic stenosis or other potential causes for symptoms (i.e. lung disease) and in patients with severe myocardial dysfunction, pre-renal insufficiency or other organ dysfunction that may be reversible with balloon aortic valvotomy when performed in centres that can escalate to TAVI.

IIb

C

Discussion Heart Team

	Favours TAVI	Favours SAVR
Clinical characteristics		
STS/EuroSCORE II <4% (logistic EuroSCORE I <10%) ^a		+
STS/EuroSCORE II ≥4% (logistic EuroSCORE I ≥10%) ^a	+	
Presence of severe comorbidity (not adequately reflected by scores)	+	
Age <75 years		+
Age ≥75 years	+	
Previous cardiac surgery	+	
Frailty ^b	+	
Restricted mobility and conditions that may affect the rehabilitation process after the procedure	+	
Suspicion of endocarditis		+

Anatomical and technical aspects

Favourable access for transfemoral TAVI	+	
Unfavourable access (any) for TAVI		+
Sequelae of chest radiation	+	
Porcelain aorta	+	
Presence of intact coronary bypass grafts at risk when sternotomy is performed	+	
Expected patient–prosthesis mismatch	+	
Severe chest deformation or scoliosis	+	
Short distance between coronary ostia and aortic valve annulus		+
Size of aortic valve annulus out of range for TAVI		+
Aortic root morphology unfavourable for TAVI		+
Valve morphology (bicuspid, degree of calcification, calcification pattern) unfavourable for TAVI		+
Presence of thrombi in aorta or LV		+

Cardiac conditions in addition to aortic stenosis that require consideration for concomitant intervention

Severe CAD requiring revascularization by CABG		+
Severe primary mitral valve disease, which could be treated surgically		+
Severe tricuspid valve disease		+
Aneurysm of the ascending aorta		+
Septal hypertrophy requiring myectomy		+

Patient asymptomatique

C) Asymptomatic patients with severe aortic stenosis (refers only to patients eligible for surgical valve replacement)

SAVR is indicated in asymptomatic patients with severe aortic stenosis and systolic LV dysfunction (LVEF <50%) not due to another cause.

I

C

SAVR is indicated in asymptomatic patients with severe aortic stenosis and an abnormal exercise test showing symptoms on exercise clearly related to aortic stenosis.

I

C

SAVR should be considered in asymptomatic patients with severe aortic stenosis and an abnormal exercise test showing a decrease in blood pressure below baseline.

IIa

C

SAVR should be considered in asymptomatic patients with normal ejection fraction and none of the above-mentioned exercise test abnormalities if the surgical risk is low and one of the following findings is present:

- Very severe aortic stenosis defined by a $V_{max} > 5.5$ m/s
- Severe valve calcification and a rate of V_{max} progression ≥ 0.3 m/s/year
- Markedly elevated BNP levels (>threefold age- and sex-corrected normal range) confirmed by repeated measurements without other explanations
- Severe pulmonary hypertension (systolic pulmonary artery pressure at rest >60 mmHg confirmed by invasive measurement) without other explanation.

IIa

C

Resultats TAVI de l'équipe IMM

Table 5 Recommended requirements of a heart valve centre (modified from Chambers et al.³²)

Requirements
Multidisciplinary teams with competencies in valve replacement, aortic root surgery, mitral, tricuspid and aortic valve repair, as well as transcatheter aortic and mitral valve techniques including reoperations and reinterventions. The Heart Teams must meet on a regular basis and work with standard operating procedures.
Imaging, including 3D and stress echocardiographic techniques, perioperative TOE, cardiac CT, MRI, and positron emission tomography-CT.
Regular consultation with community, other hospitals, and extracardiac departments, and between non-invasive cardiologists and surgeons and interventional cardiologists.
Back-up services including other cardiologists, cardiac surgeons, intensive care and other medical specialties.
Data review: <ul style="list-style-type: none"> • Robust internal audit processes including mortality and complications, repair rates, durability of repair, and reoperation rate with a minimum of 1-year follow-up. • Results available for review internally and externally. • Participation in national or European quality databases.

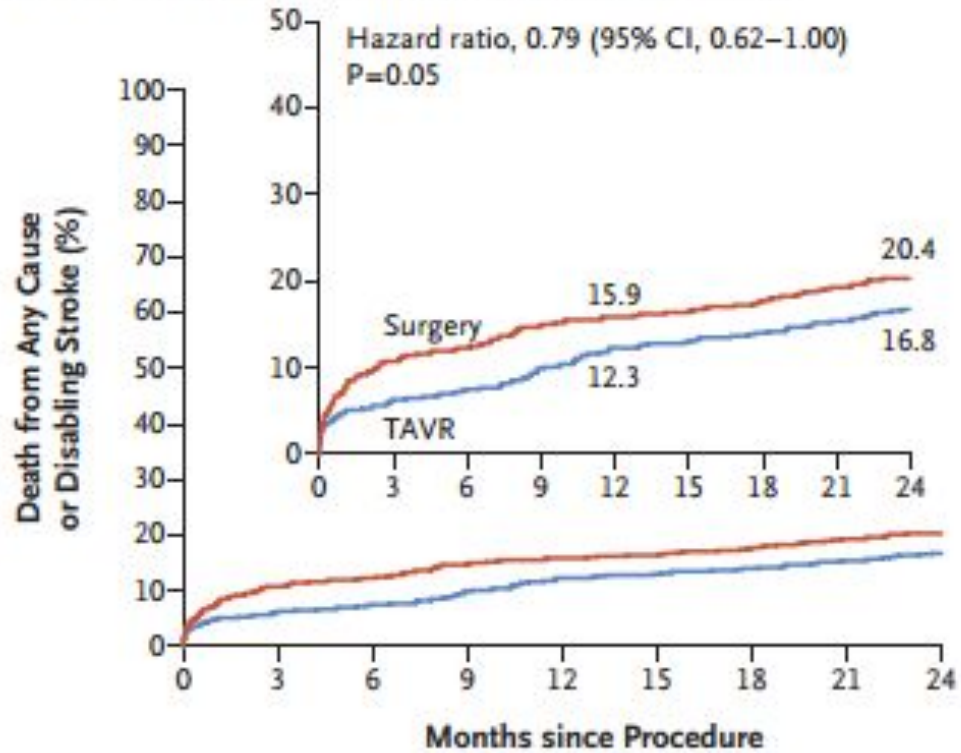
3D = three-dimensional; CT = computed tomography; MRI = magnetic resonance imaging; TOE = transoesophageal echocardiography.

	n	Mortalité J30
2013 (ccml)	139	7(5.0%)
2014 -2015	265	10(3.8%)
2016	255	8 (3.2%)
2017	337	5 (1.9%)



Partner 2

C Transfemoral-Access Cohort, Intention-to-Treat Analysis

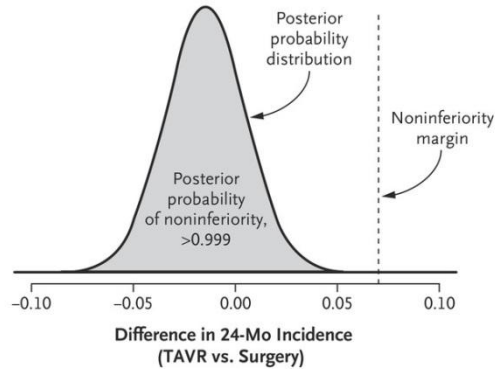


No. at Risk

TAVR	775	718	709	685	663	652	644	634	612
Surgery	775	643	628	604	595	577	569	557	538

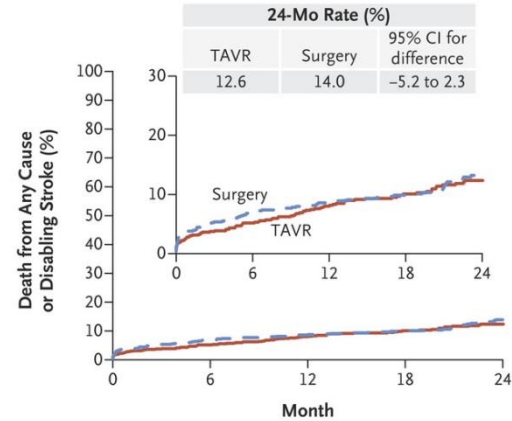
SURTAVI

A Noninferiority Margin of TAVR



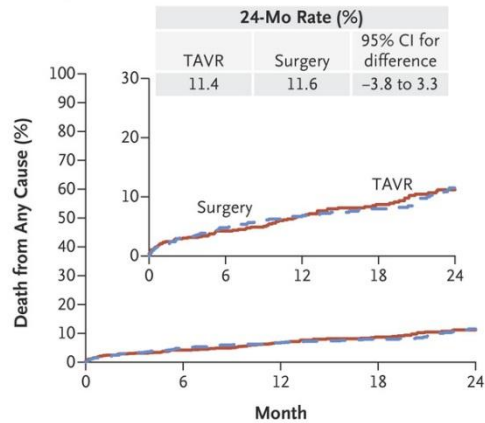
TAVR Posterior Median	Surgery Posterior Median	Difference Posterior Median
12.6 (10.2 to 15.3)	14.0 (11.4 to 17.0)	-1.4 (-5.2 to 2.3)

B Primary Outcome



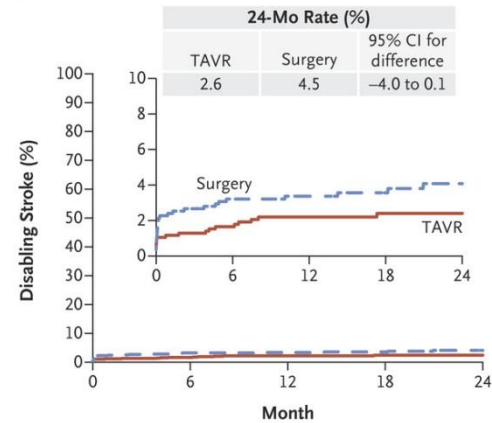
No. at Risk	0	6	12	18	24
TAVR	864	755	612	456	272
Surgery	796	674	555	407	241

C Death from Any Cause



No. at Risk	0	6	12	18	24
TAVR	864	762	621	465	280
Surgery	796	690	569	414	249

D Disabling Stroke



No. at Risk	0	6	12	18	24
TAVR	864	755	612	456	272
Surgery	796	674	555	407	241

CONCLUSION

