TRAITEMENT CHIRURGICAL DES CIA, CAVP, RVPAP.

Anatomie chirurgicale

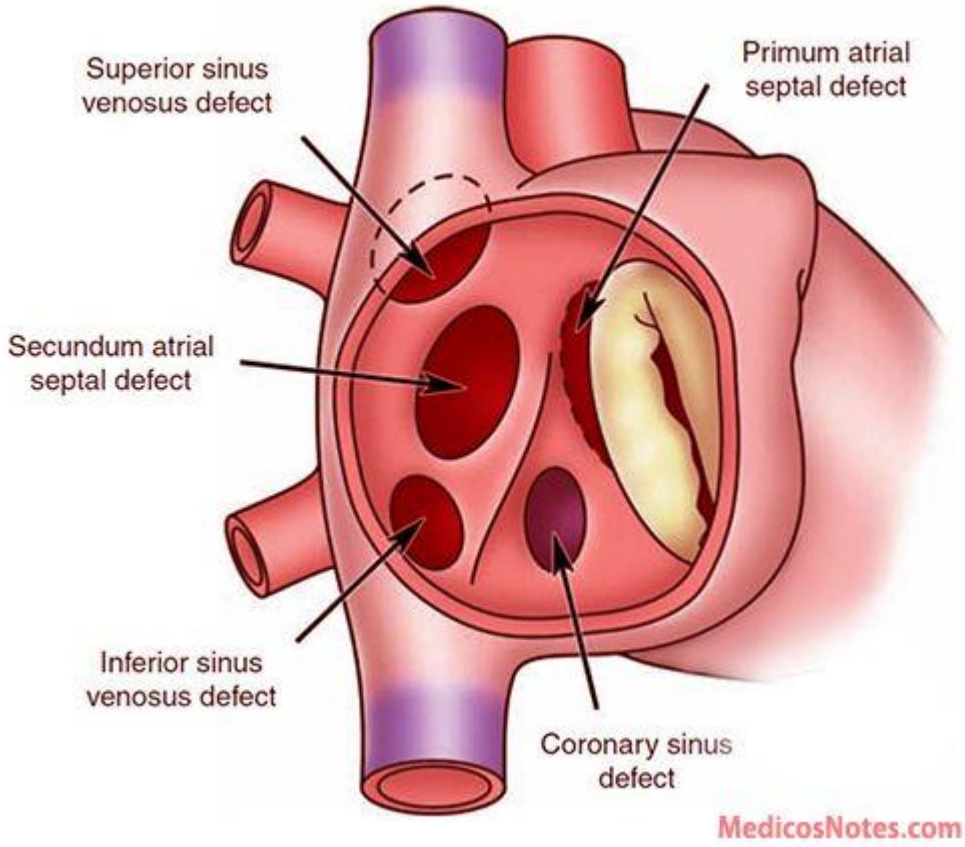
Traitement chirurgical

Problèmes chirurgicaux

Communications inter atriales

- Plus fréquente des CC
  - Isolée / associée (30%)
- **CIA OS (75%)**
- **CIA SV (10%)**
- **CIA SC (< 1%)**
- CIA associé à CAVP (15%)

ANATOMIE

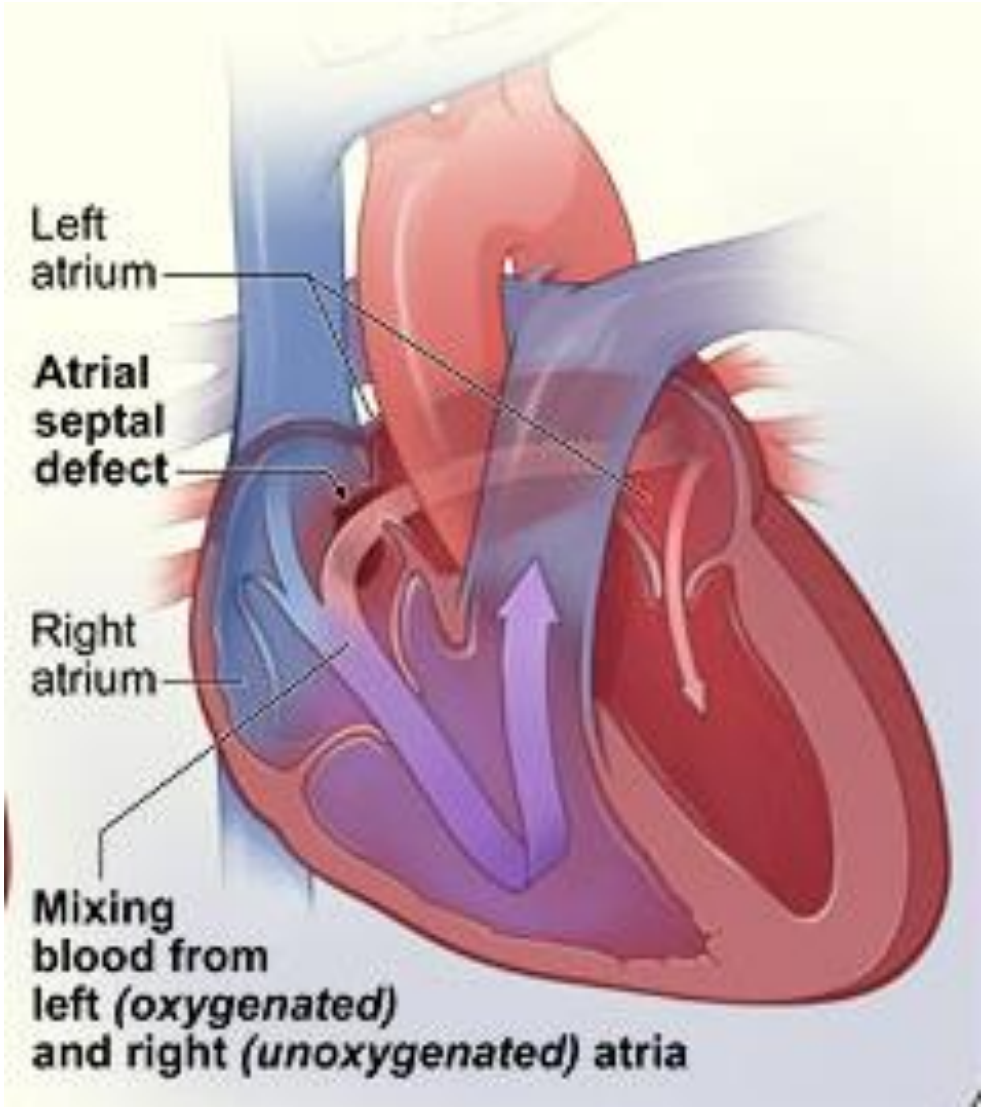


- CIA OSTIUM SECUNDUM: au centre du septum IA
- CIA OSTIUM PRIMUM:proche des valves AV (cf CAV)
- CIA du sinus coronaire
- CIA SINUS VENOSUS: proche VCS (RVPA partiel)

PHYSIOPATHOLOGIE

- Shunt G-D: surcharge du OD et VD proportionnelle au shunt: dilatation VD

- Augmentation de la vascularisation pulmonaire, mais pas d'HTAP (surcharge de volume pas de pression)

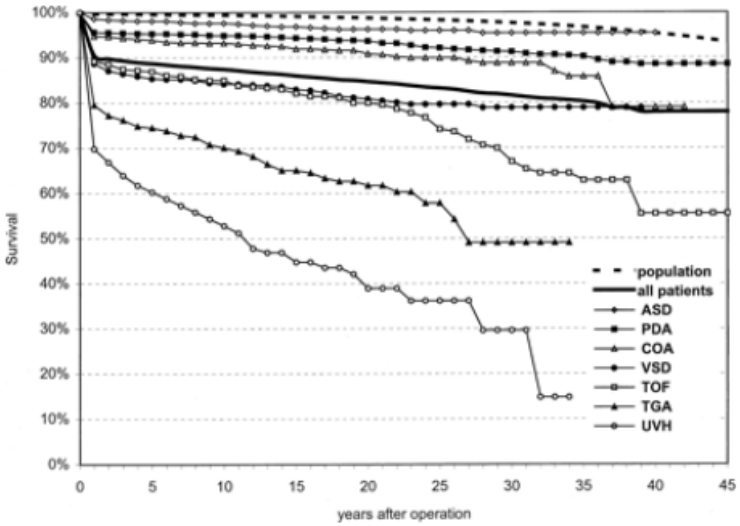


Rappel-généralités-résultats

- Histoire naturelle ?
  - 128 patients > 18 ans: KT droit
  - 75% symptomatiques
  - 25% PAPm augmentées
  - 15% PAPm très augmentées

*Craig RJ, Selzer A. Natural history and prognosis of atrial septal defect. Circulation 1968; **37**: 805–815.*

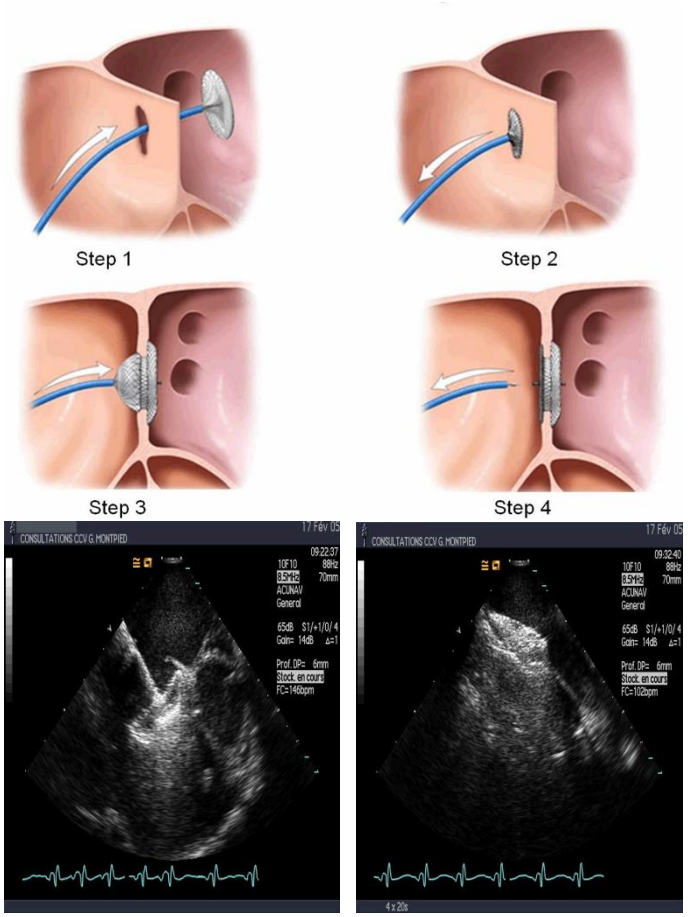
- Résultat: excellent !
  - Après chirurgie cardiaque
  - *Nieminen,Circulation. 2001*



Recommendations for intervention in atrial septal defect (native and residual)

Recommendations	Class[a]	Level[b]
In patients with evidence of RV volume overload[c] and no PAH (no non-invasive signs of PAP elevation or invasive confirmation of PVR <3 WU in case of such signs) or LV disease, ASD closure is recommended regardless of symptoms.[146,147]	I	B
Device closure is recommended as the method of choice for secundum ASD closure when technically suitable.	I	C
In elderly patients not suitable for device closure, it is recommended to carefully weigh the surgical risk against the potential benefit of ASD closure.	I	C
In patients with non-invasive signs of PAP elevation, invasive measurement of PVR is mandatory.	I	C
In patients with LV disease, it is recommended to perform balloon testing and carefully weigh the benefit of eliminating L–R shunt against the potential negative impact of ASD closure on outcome due to an increase in filling pressure (taking closure, fenestrated closure, and no closure into consideration).	I	C
In patients with suspicion of paradoxical embolism (exclusion of other causes), ASD closure should be considered regardless of size providing there is absence of PAH and LV disease.	IIa	C
In patients with PVR 3–5 WU, ASD closure should be considered when significant L–R shunt is present (Qp:Qs >1.5).	IIa	C
In patients with PVR ≥5 WU, fenestrated ASD closure may be considered when PVR falls below 5 WU after targeted PAH treatment and significant L–R shunt is present (Qp:Qs >1.5).	IIb	C
ASD closure is not recommended in patients with Eisenmenger physiology, patients with PAH and PVR ≥5 WU despite targeted PAH treatment, or desaturation on exercise.[d]	III	C

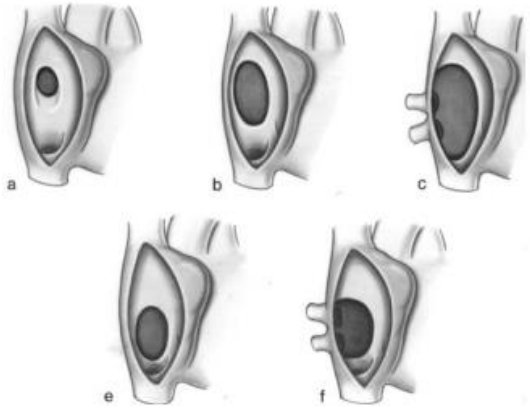
ASD = atrial septal defect; L–R = left-to-right; LV = left ventricle/ventricular; PAH = pulmonary arterial hypertension; PAP = pulmonary artery pressure; PVR = pulmonary vascular resistance; Qp:Qs = pulmonary to systemic flow ratio; RV = right ventricle/ventricular; WU = Wood units.
[a]Class of recommendation.
[b]Level of evidence.
[c]RV enlargement with increased stroke volume.
[d]There are limited data available for a precise cut-off, but by clinical experience, this would be given by a fall of arterial oxygen saturation <90%.



2020 ESC Guidelines for the management of Adult Congenital Heart Disease (previously Grown-Up Congenital Heart Disease)

Technique chirurgicale: CIA OS

- Sternotomie: gold standard



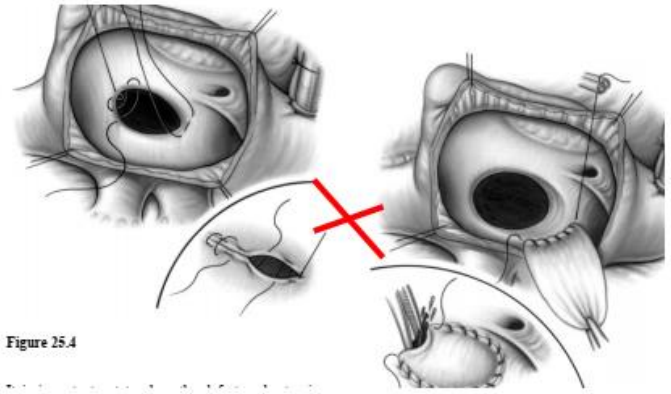
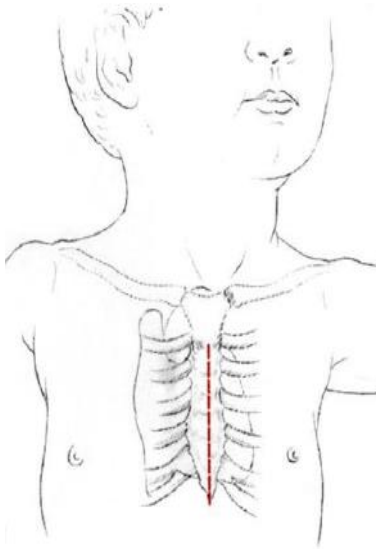


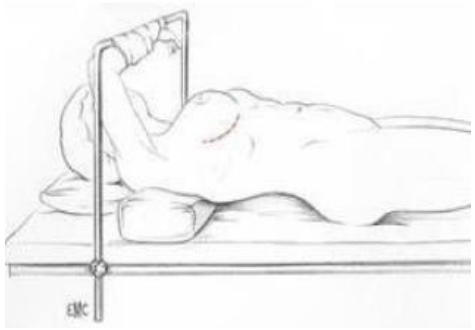
Figure 25.4

Voies d'Abord

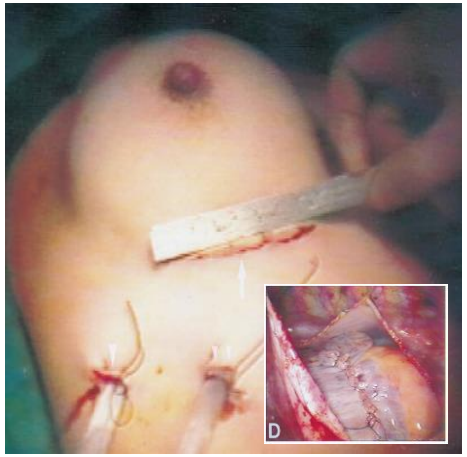


Sternotomie (mini)

Th. Postéro lat.
Th. Axillaire
(CEC centrale)

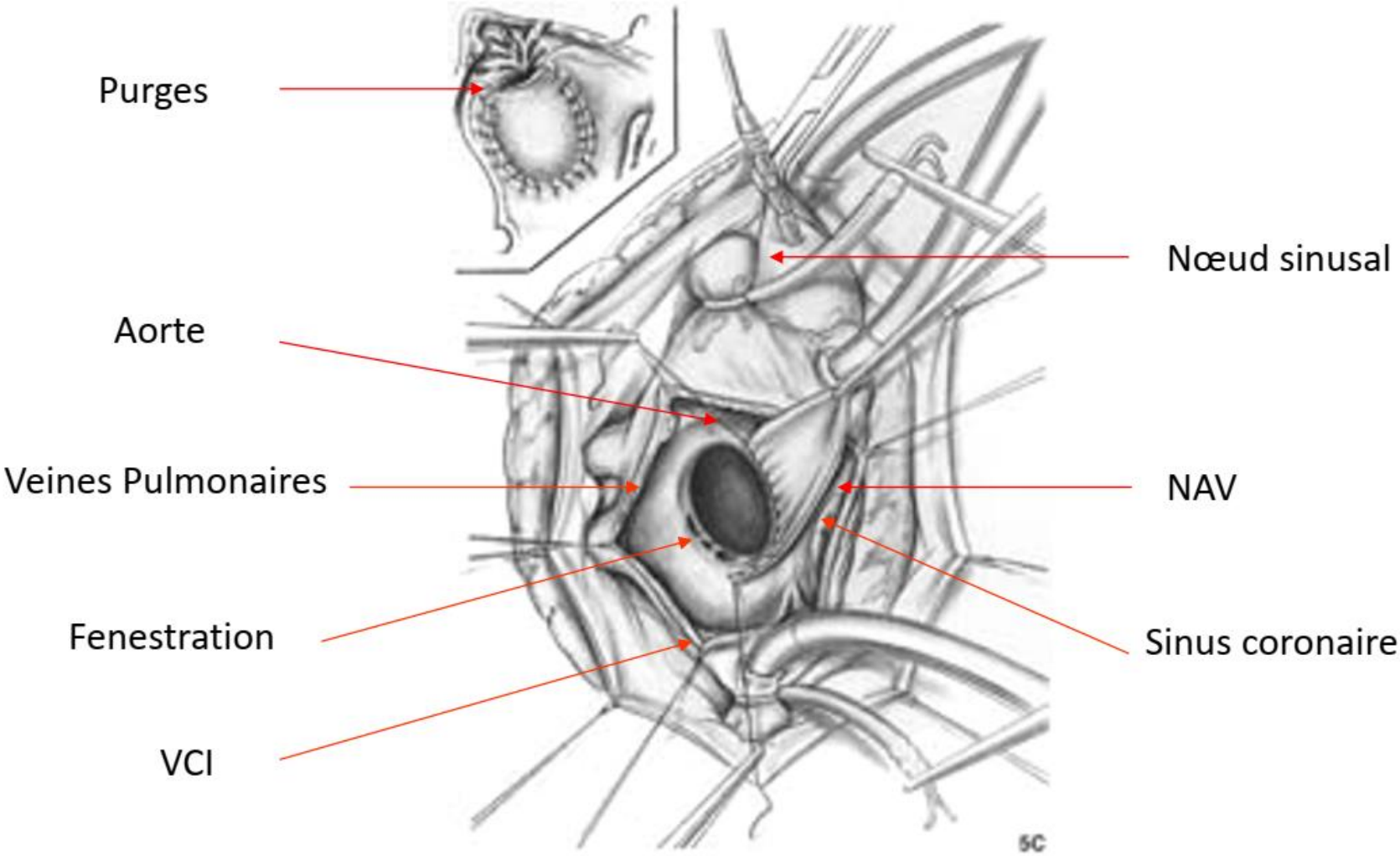


Th. Antéro lat.
Sous mammaire
(CEC périphérique)



Et Vidéo …

Complications rares: court terme



Procédures associées (adulte +++)

- **Sténose pulmonaire**
- **Prolapsus valvulaire mitral**
- **Fuite tricuspide**
- **Pontages?**
- **Arythmies:**
  - CIA « vieillie »
  - Insuffisant de se contenter de corriger le défect
    Brandenburg Am J Cardiol 1983
  - CLASS IIb (C

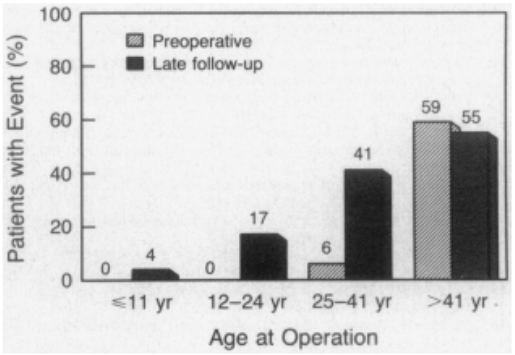
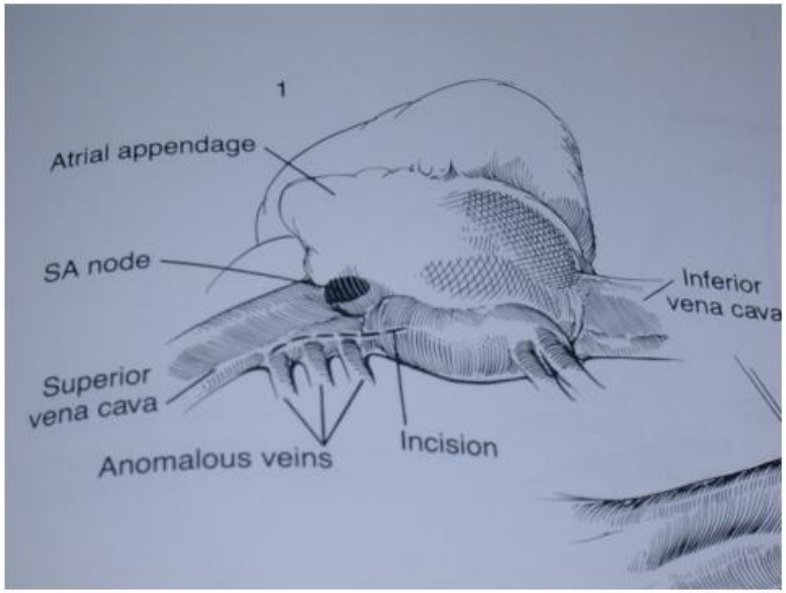
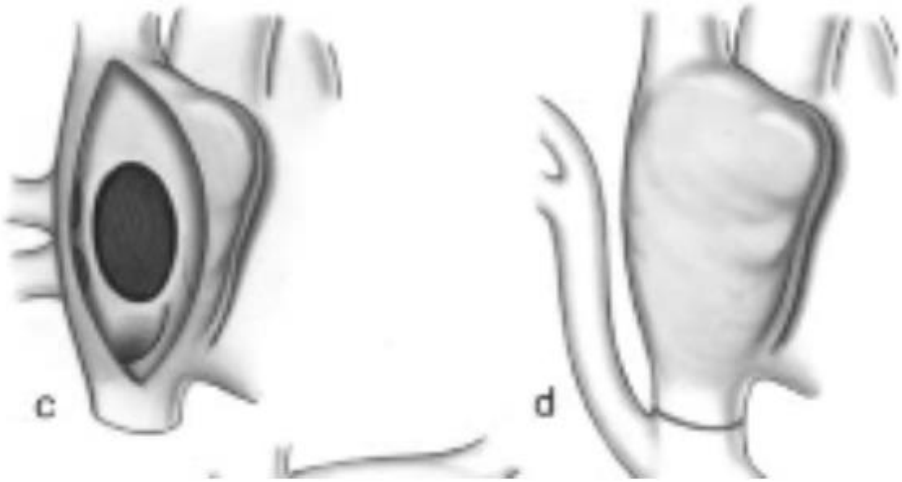


Figure 4. Incidences of Preoperative and Late Atrial Fibrillation or Flutter, According to Age at Operation.

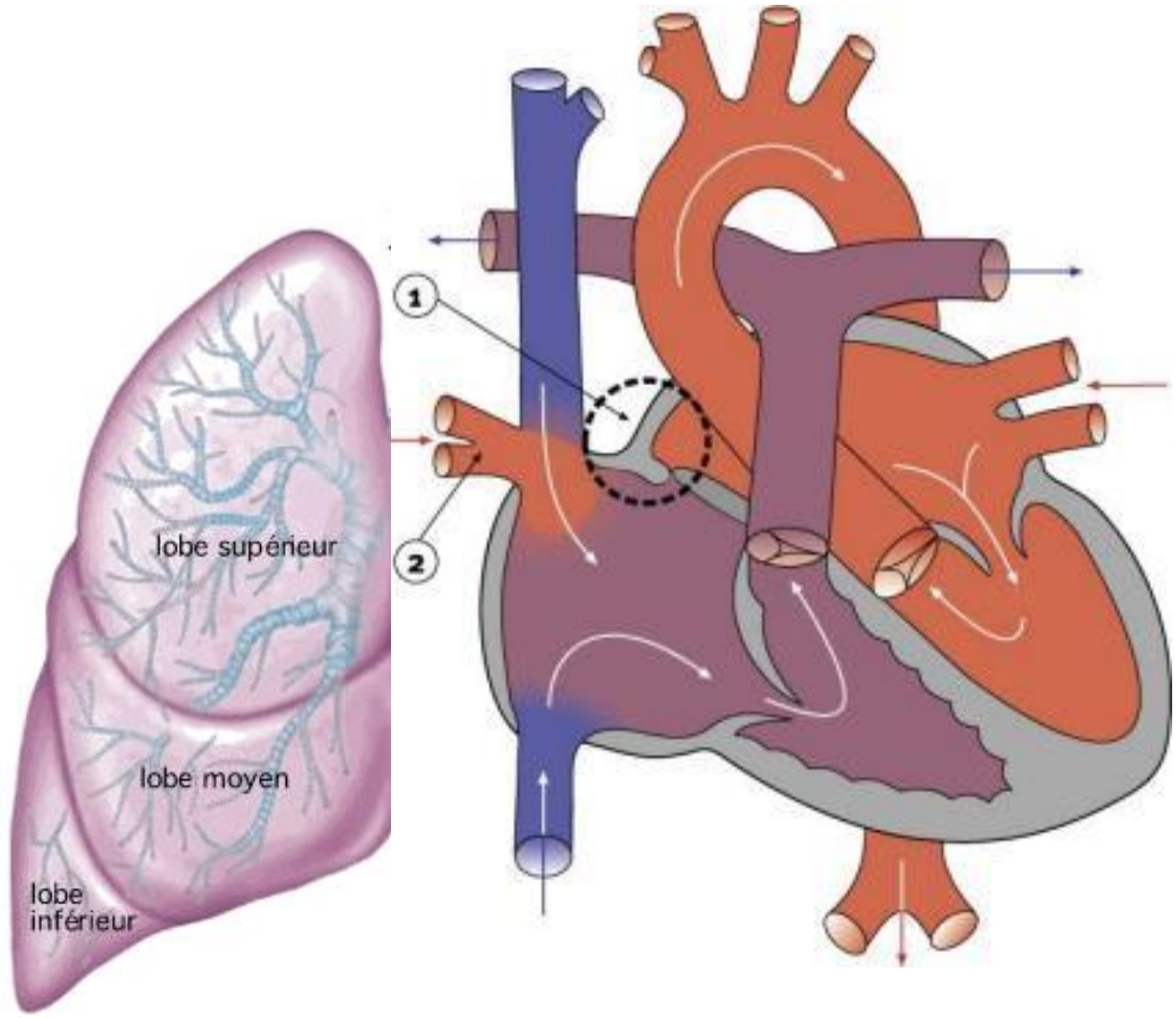
CIA SV
Association avec RVPAP





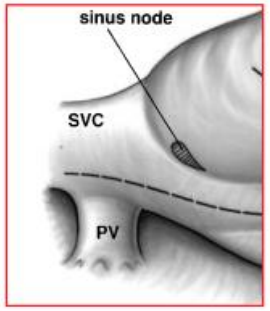
Haute Moyenne Basse

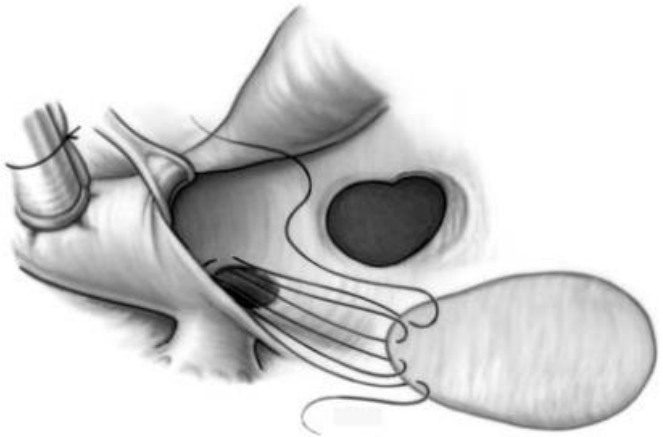
RVPA Partiel Physiopathologie



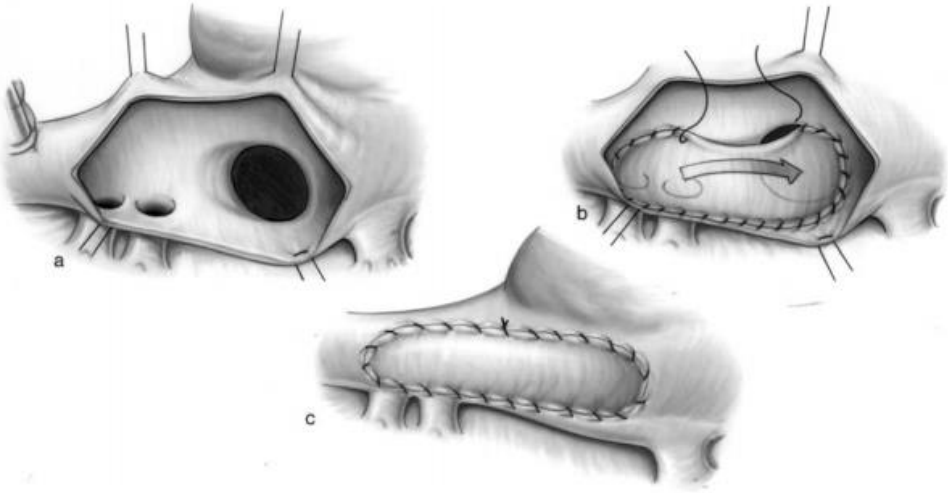
Technique chirurgicale: CIA SV

Technique classique





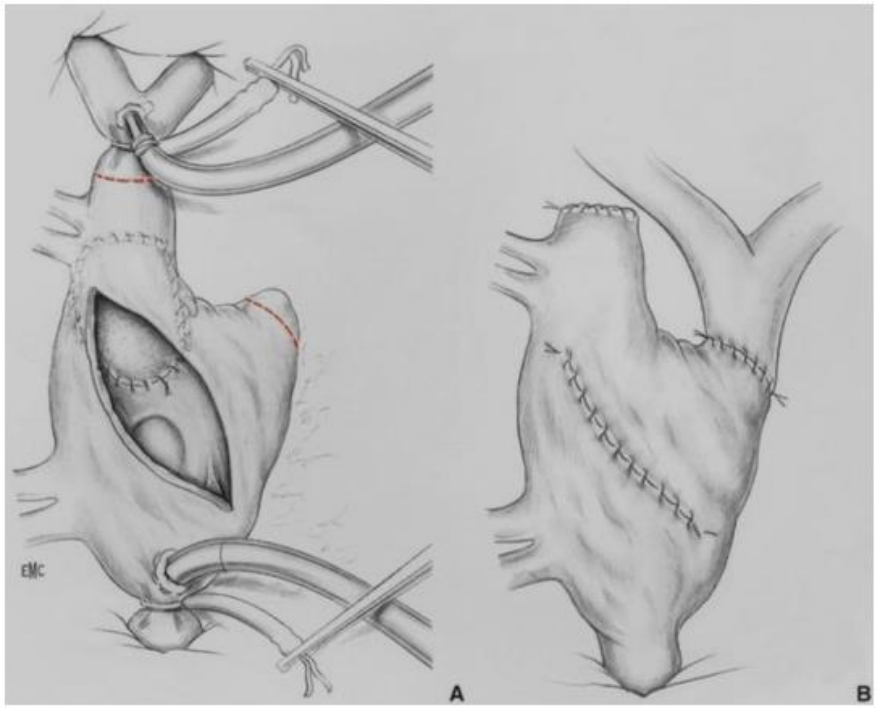
VP dte « basses »

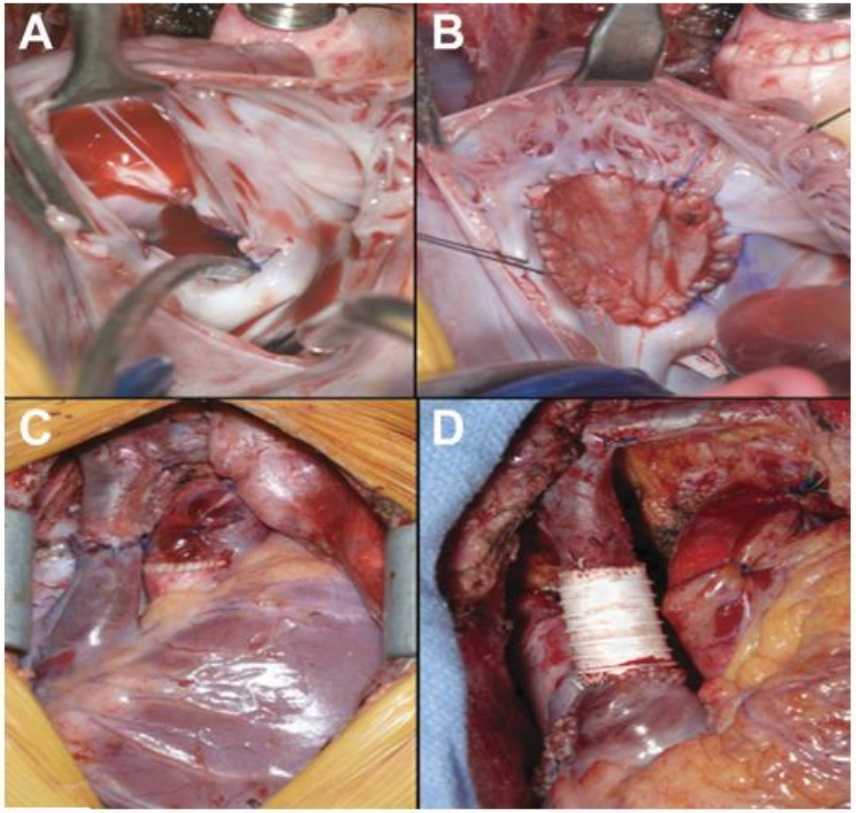


VP dte « hautes »

Technique chirurgicale: CIA SV

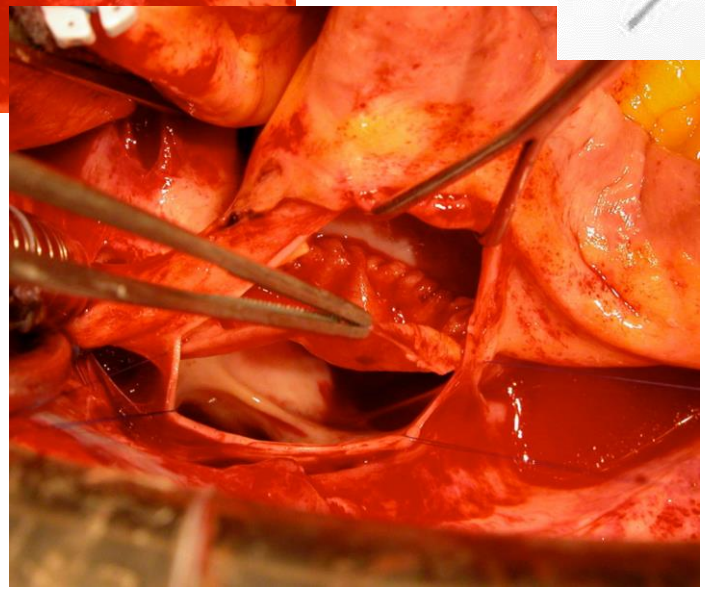
Technique de Warden

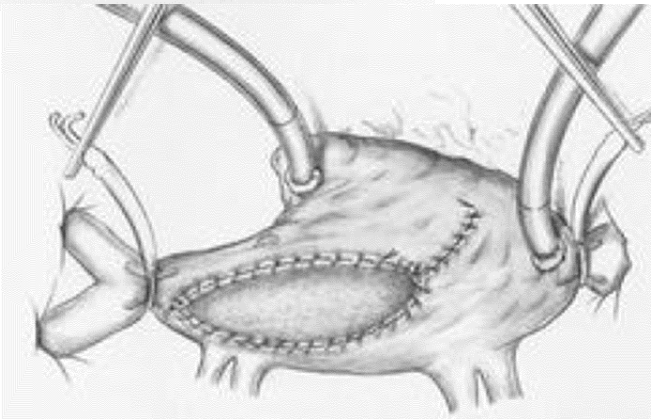




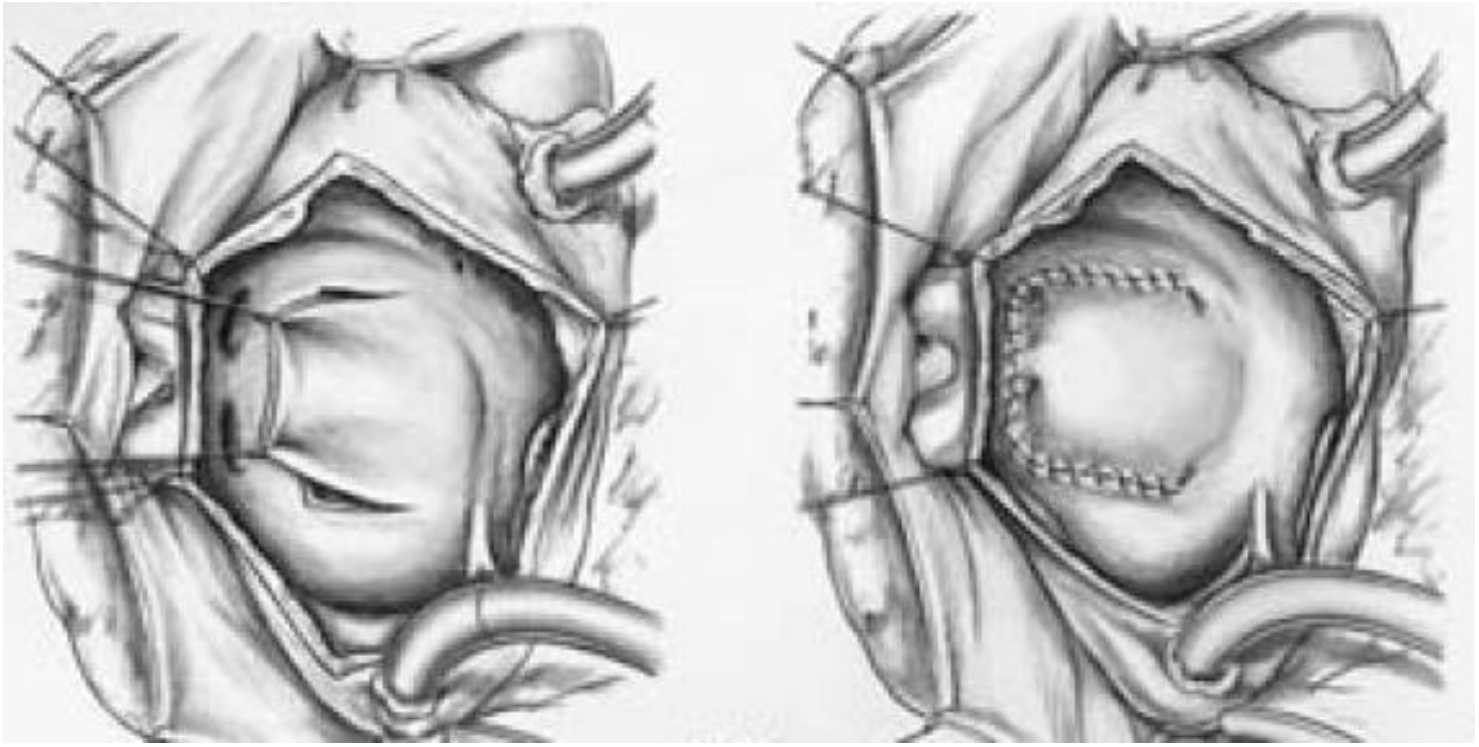
Technique chirurgicale: CIA SV

Technique trans-cave





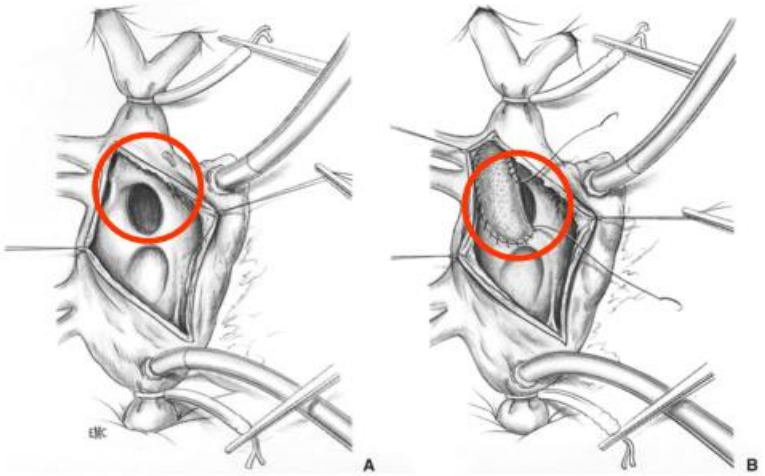
RVPAP intra



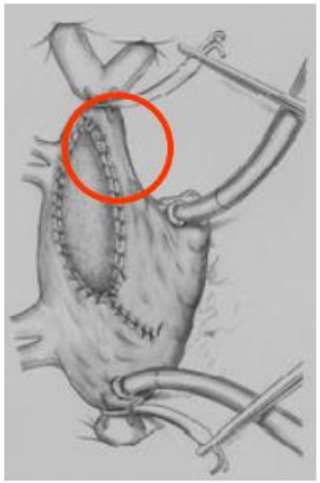
Avec ou sans CIA

Complications potentiels CIA SV

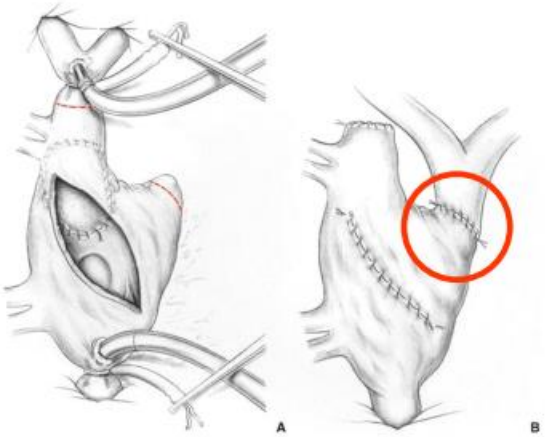
Taille de la CIA



Obstruction des
Veines Pulmonaires



Rythme



Obstruction VCS

Syndrome du Cimeterre

RVPAP isolé

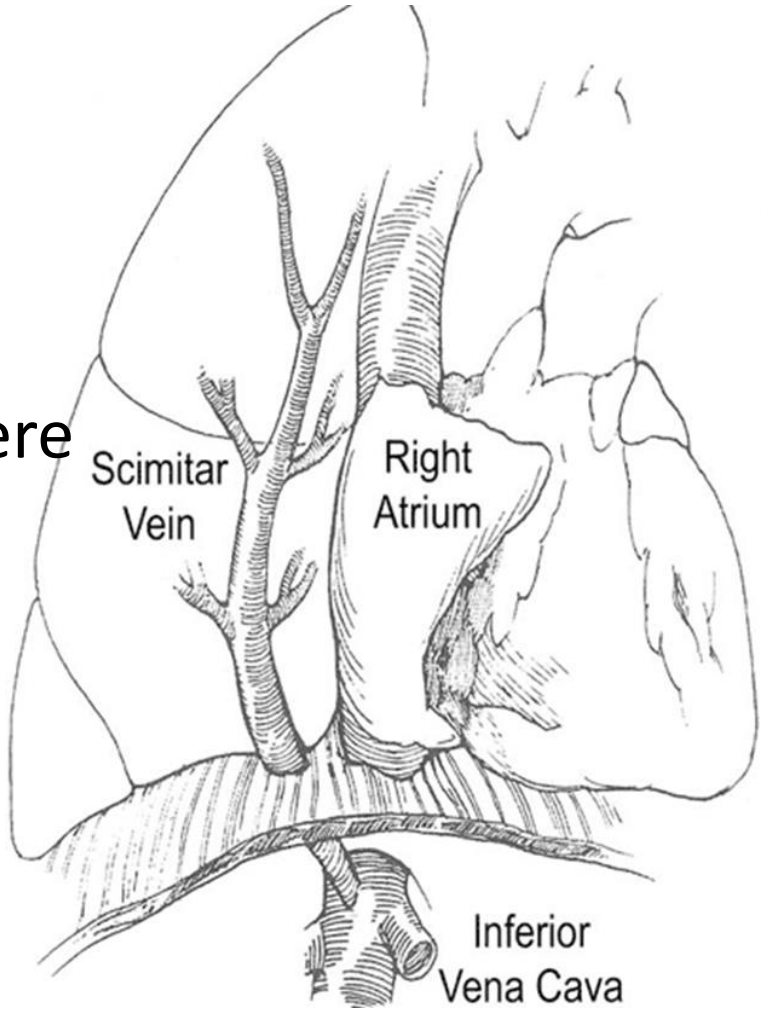
<u>ou</u>

Hypoplasie pulmonaire droite

HTAP

Sténose VP ou AP

Séquestration pulmonaire (artère systémique)



Correction RVPAP

<u>ou:</u>

Abstention

Embolisation (séquestre)

Lobectomie, pneumonectomie

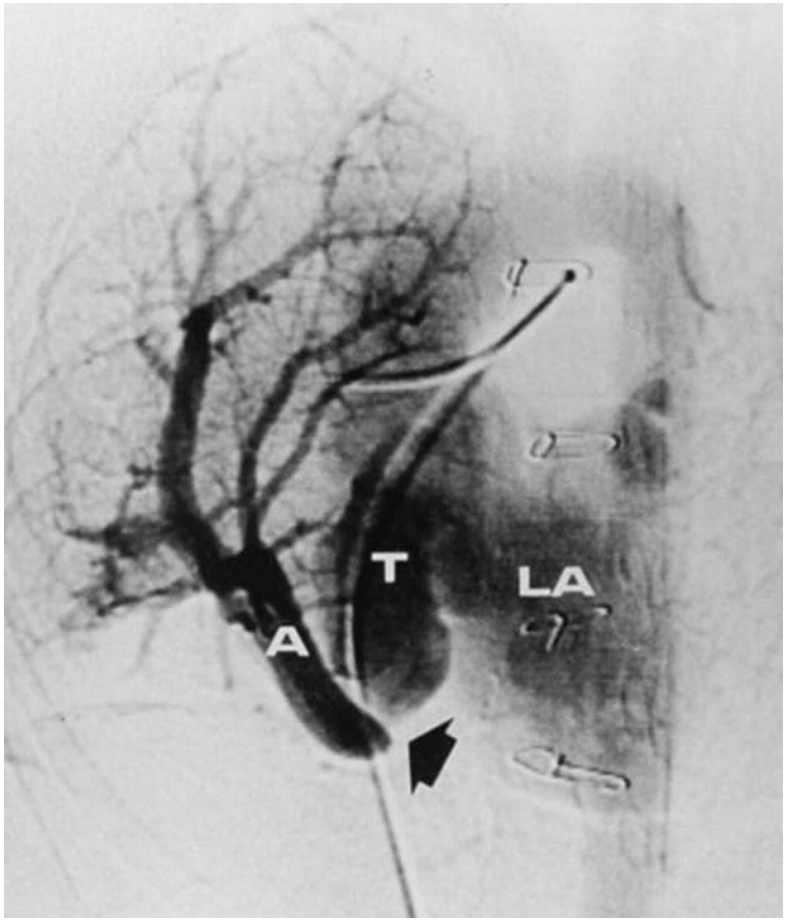
Syndrome du Cimeterre

Correction :

Tunellisation +++ (création CIA+/- élargissement VCI)

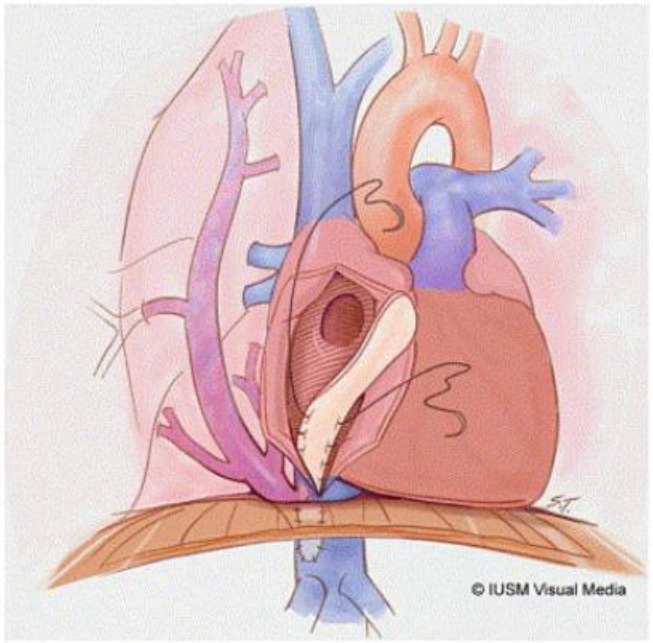
Ré implantation ?

gestes associés



Technique chirurgicale: Sd Cimeterre

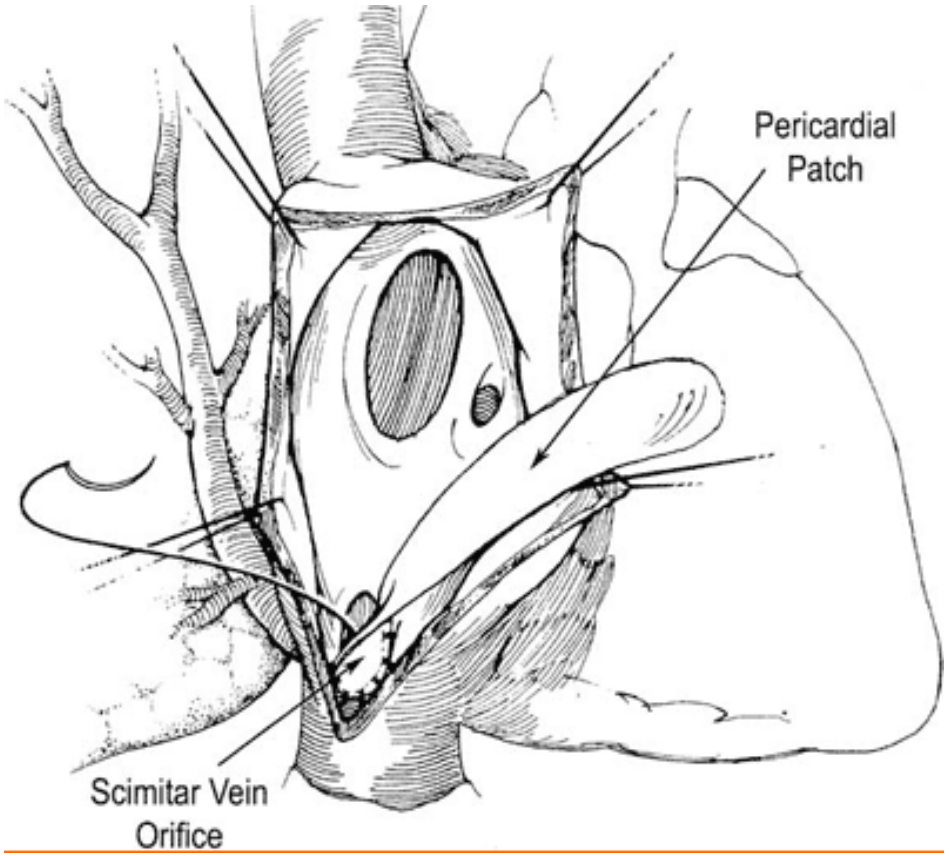
Pas de gold standard !



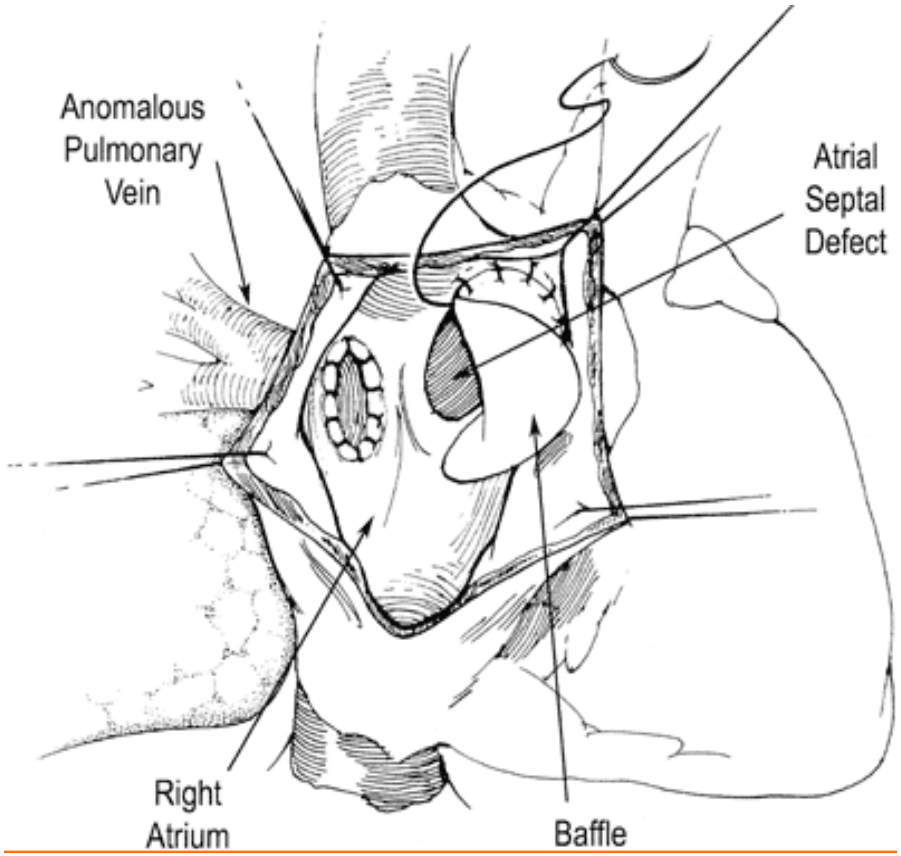
Longue tunnellisation (sténose?)

Ré implantation (sténose?)

Correction Cimeterre



Correction Cimeterre



Ré implantation (OG ou OD+CIA+patch)

Ann Thorac Surg
2014;97:353–5

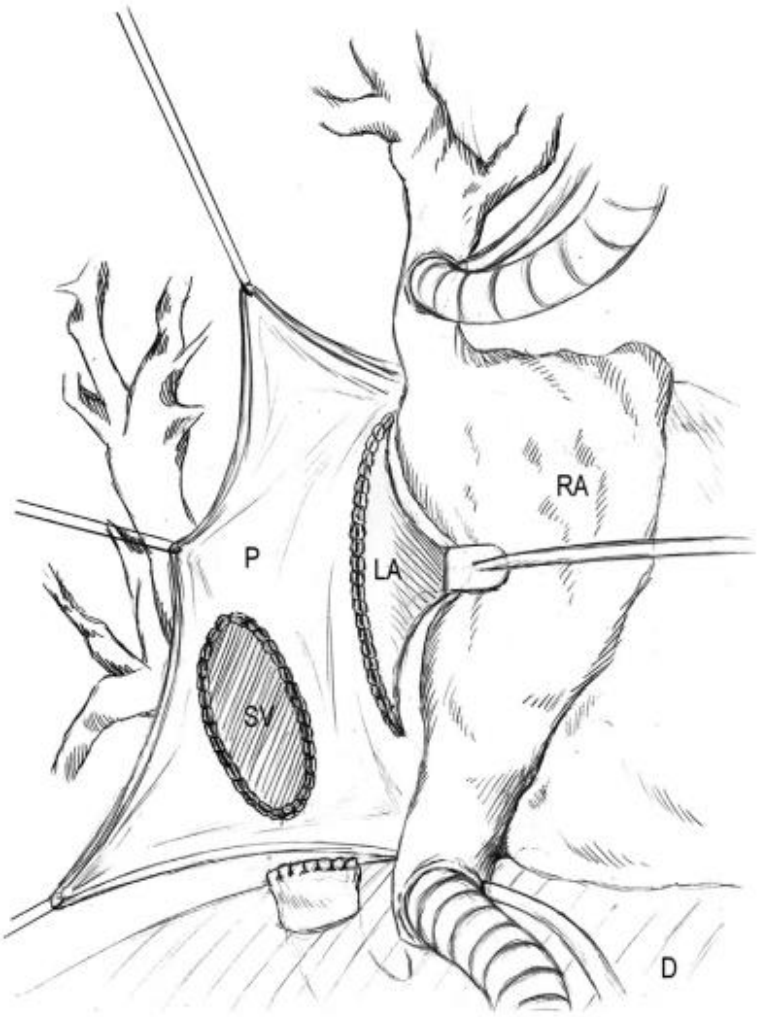


Fig 2. A large vertical left atriotomy is performed. Its left margin is sutured to the posterior pericardium. (D = diaphragm; LA = left atrium; P = pericardium; RA = right atrium; SV = scimitar vein.)

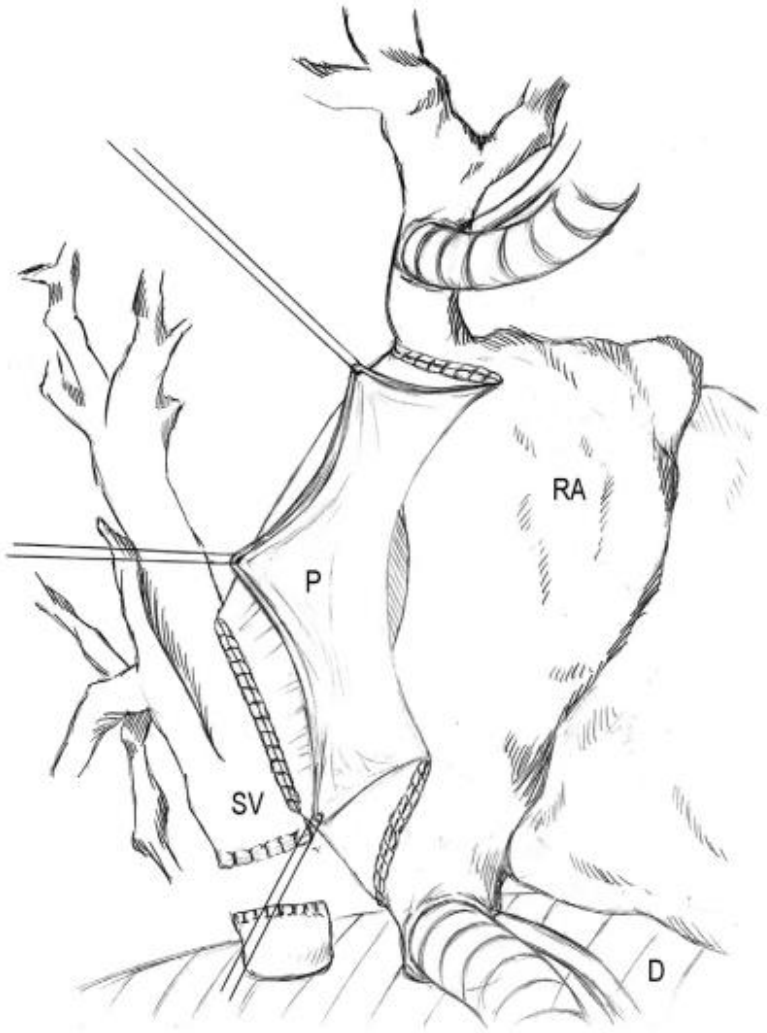
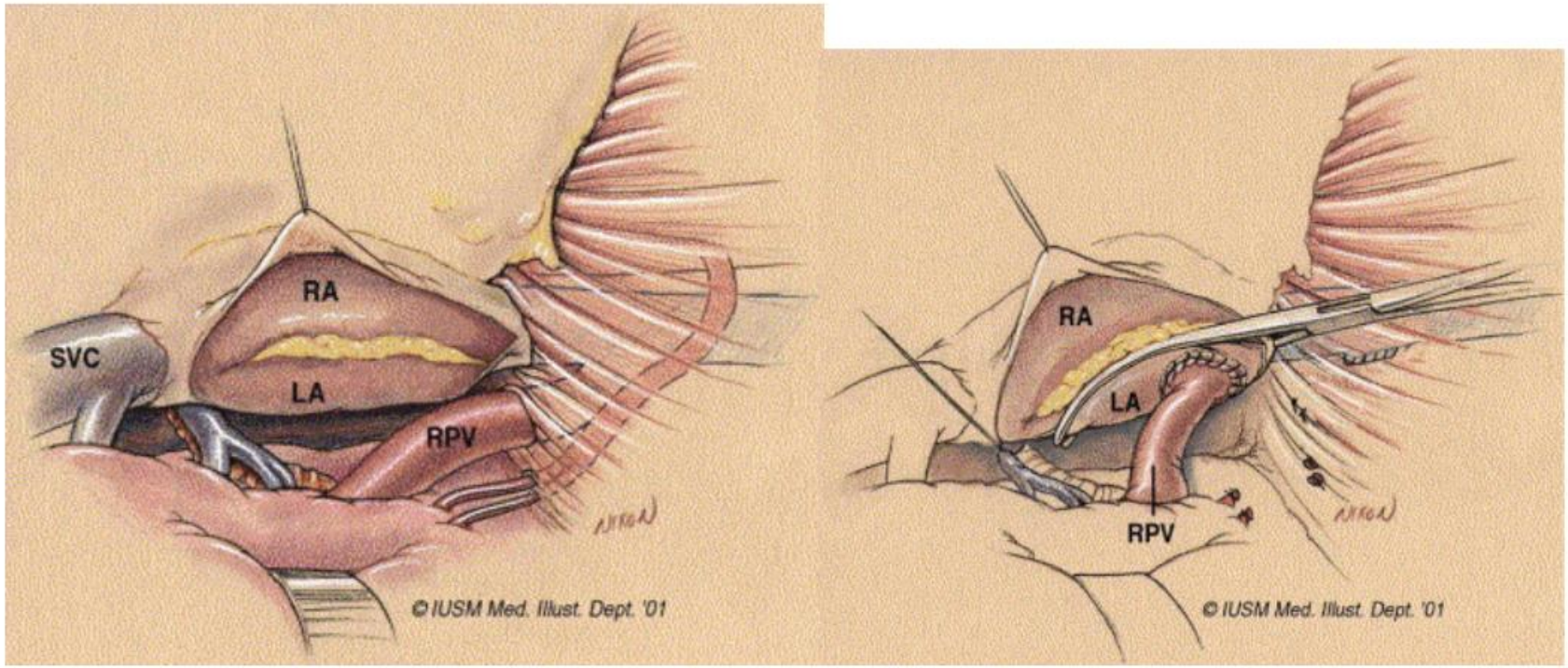


Fig 3. The pericardium is sutured to the right atrial wall. (D = diaphragm; P = pericardium; RA = right atrium; SV = scimitar vein.)

Technique chirurgicale: Sd Cimeterre

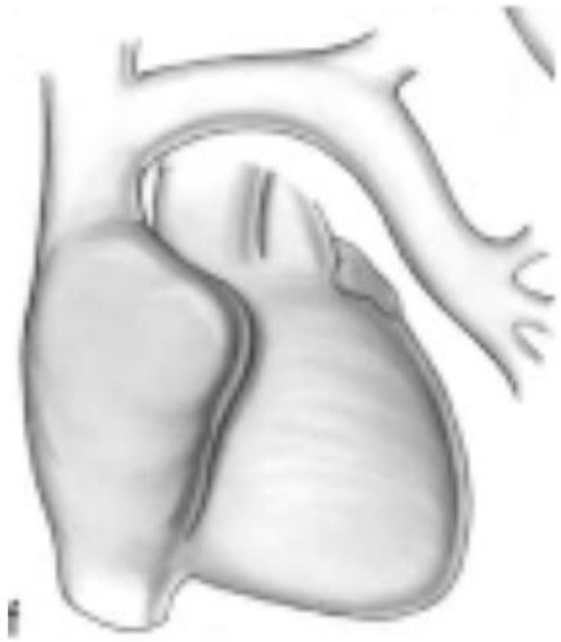


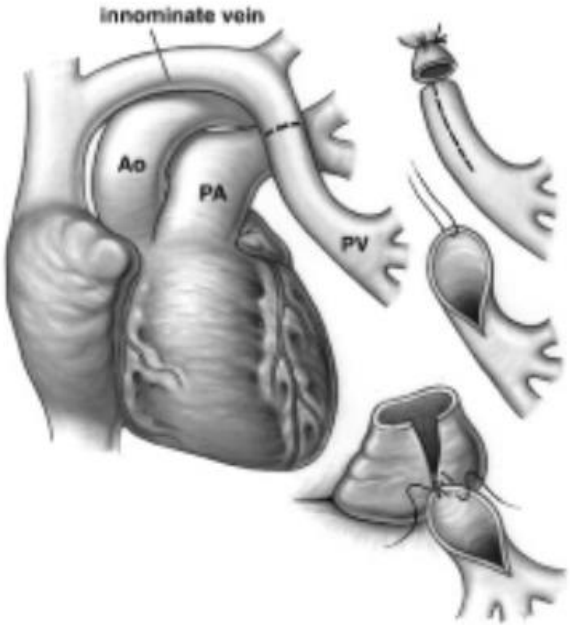
Alternative sans CEC: réimplantation directe/ thoraco droite

Brown JTCS 2003

Ou avec!

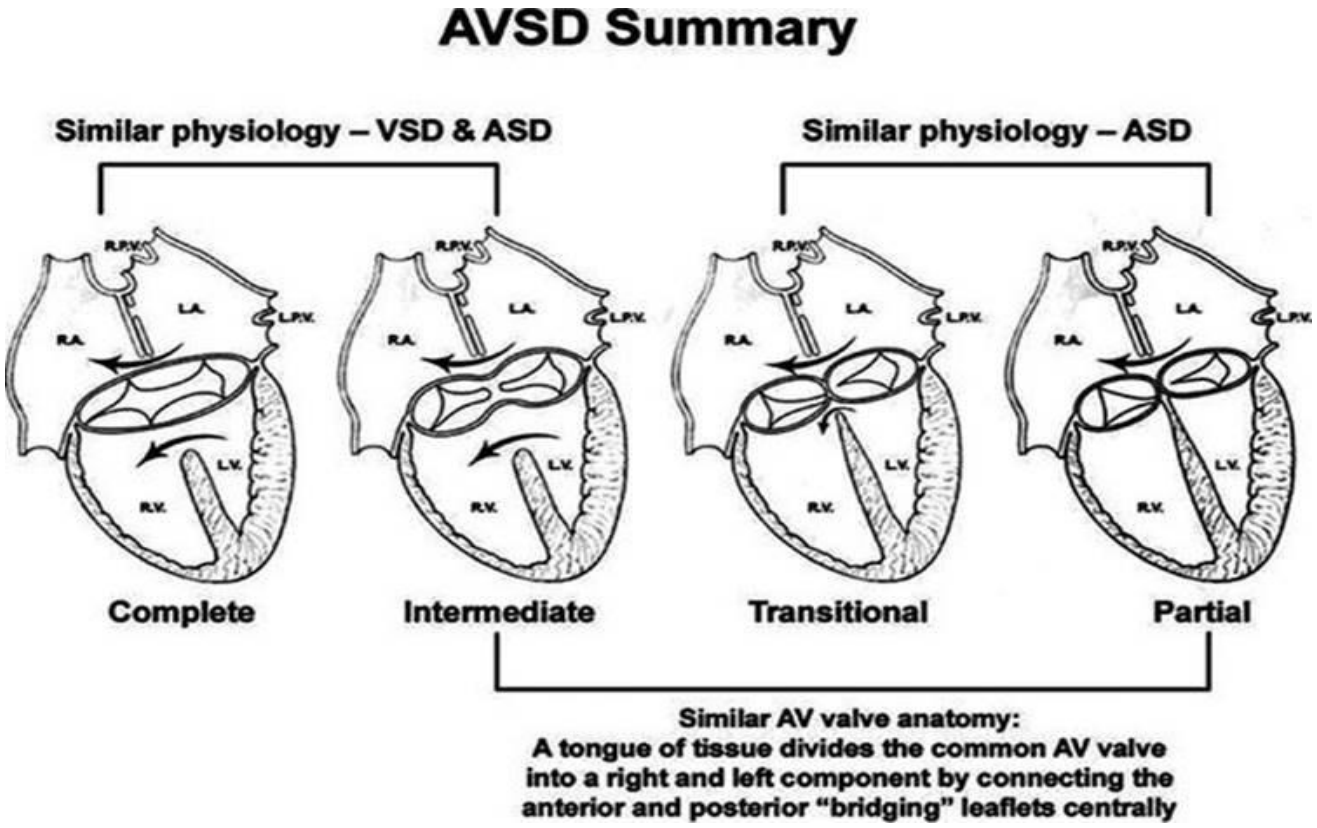
Et le RVPAP gauche?





Thoracotomie gauche ou sternotomie
Sans ou avec CEC (CIA)

CAVs



Partiel

Intermédiaire

Shunt (CIA OP)

Fuite (VAV)

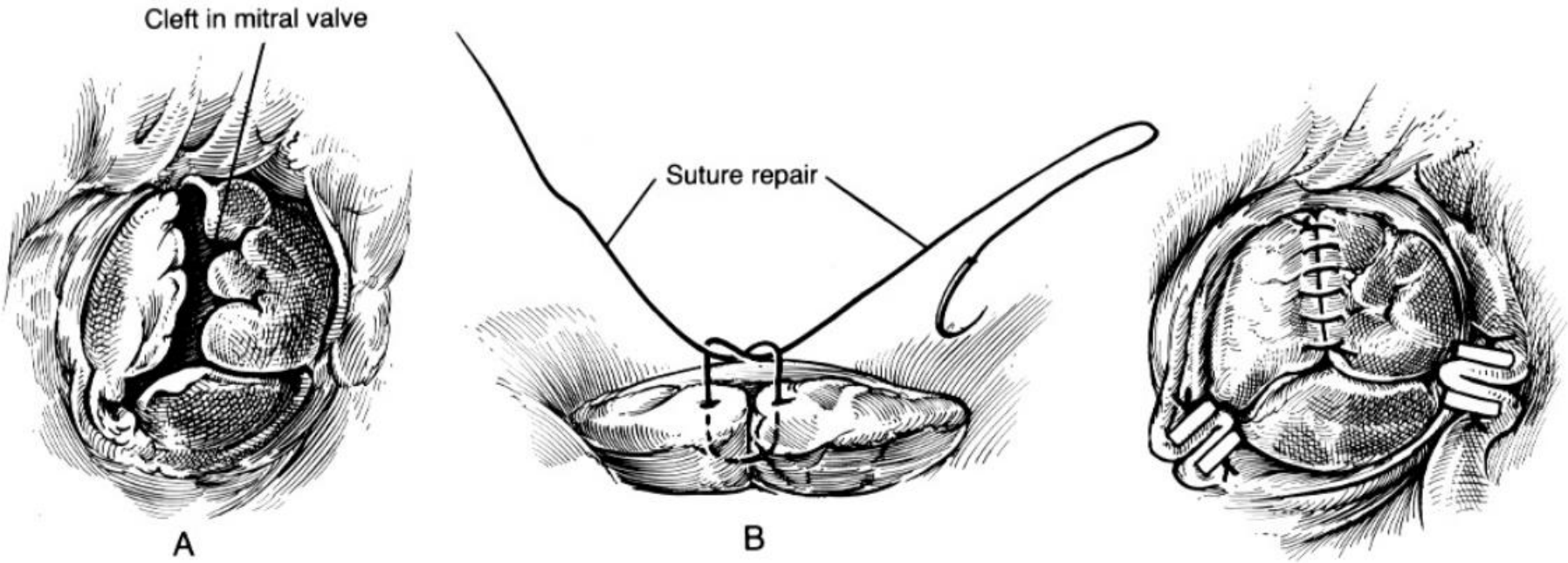
Complet

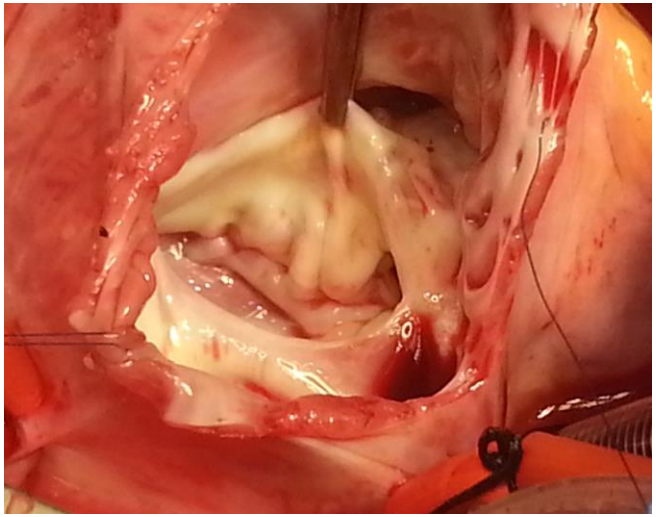
HTAP + IC

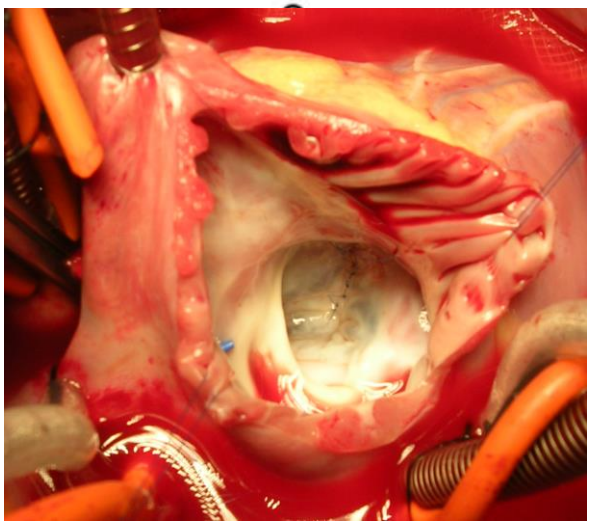
CAVP: buts de l'intervention chirurgicale

1. fermer la CIA
2. éviter les voies de conduction
3. créer deux valves AV fonctionnelles

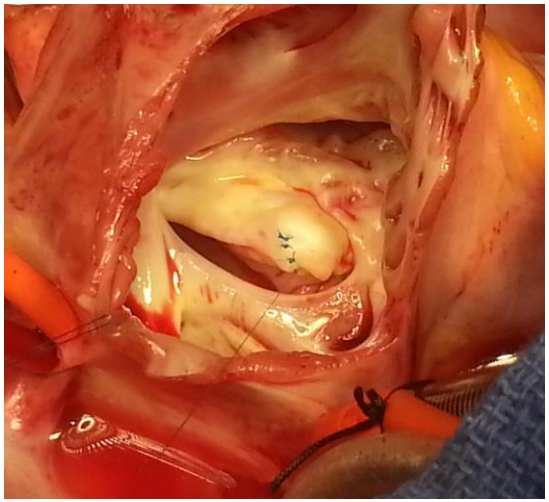
CAVP : VAV gauche

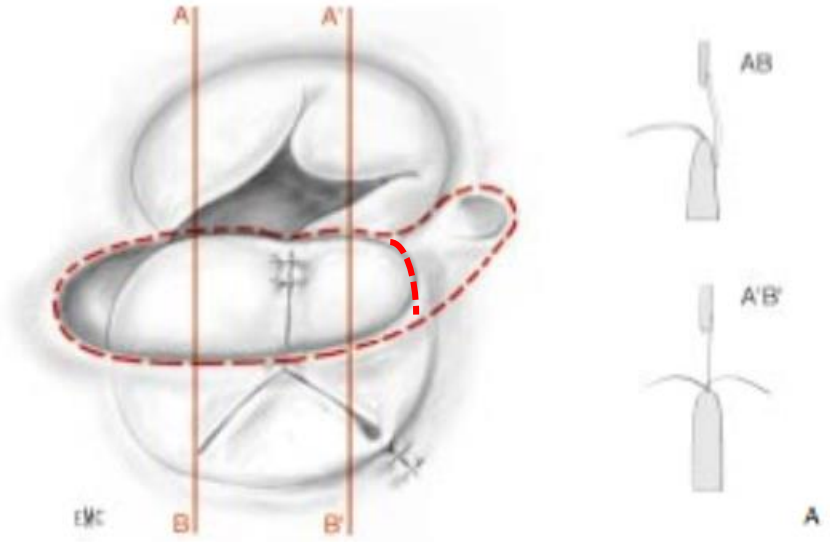


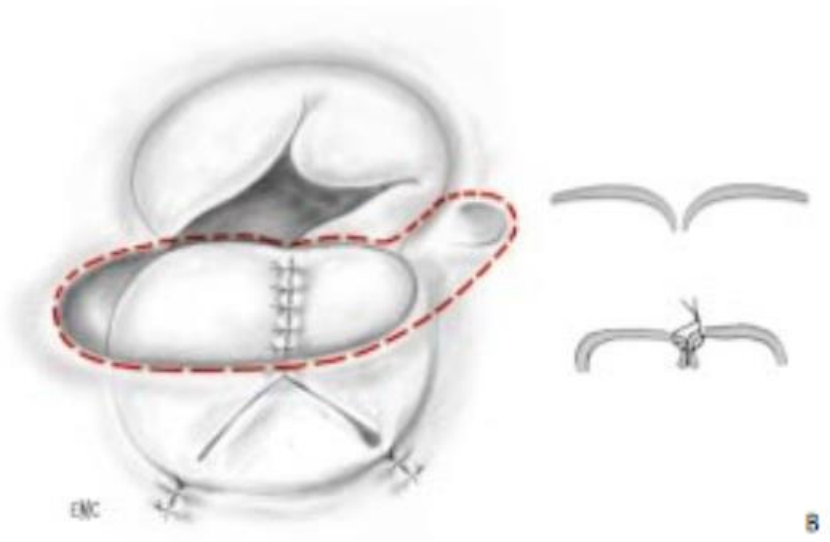


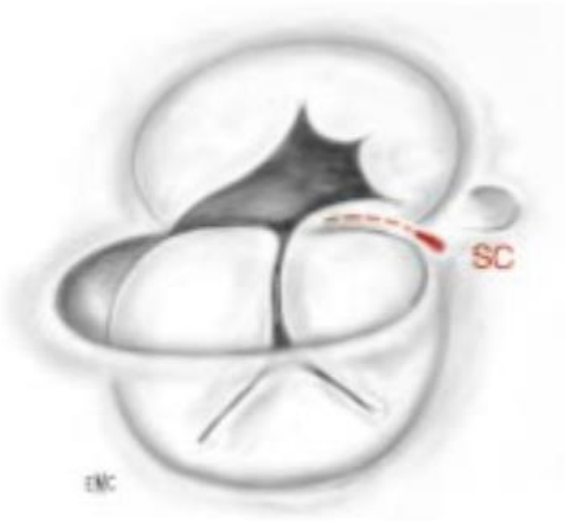


CIA : OP



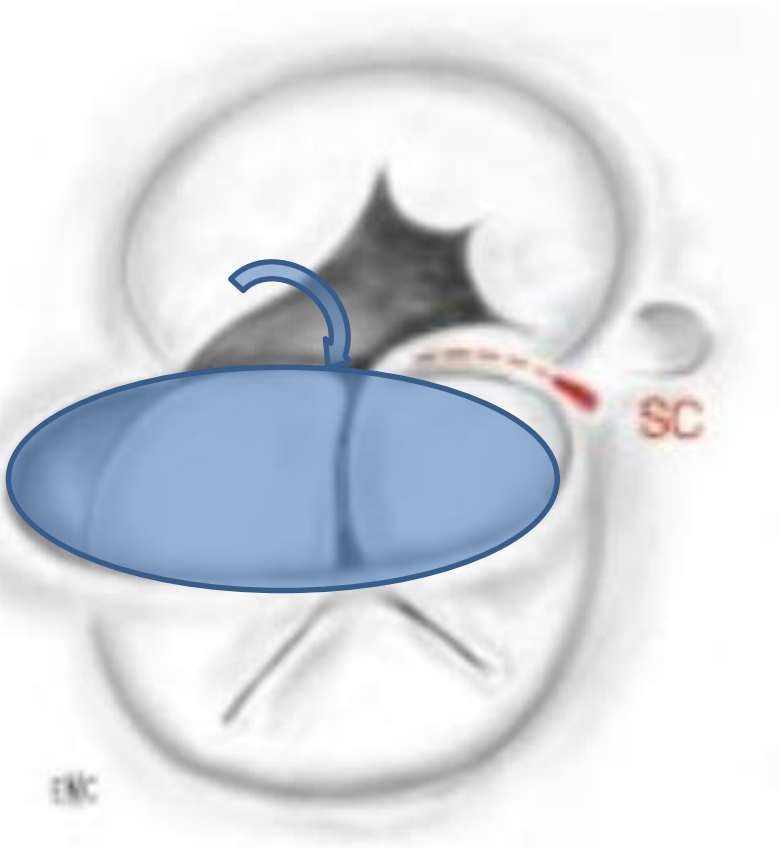


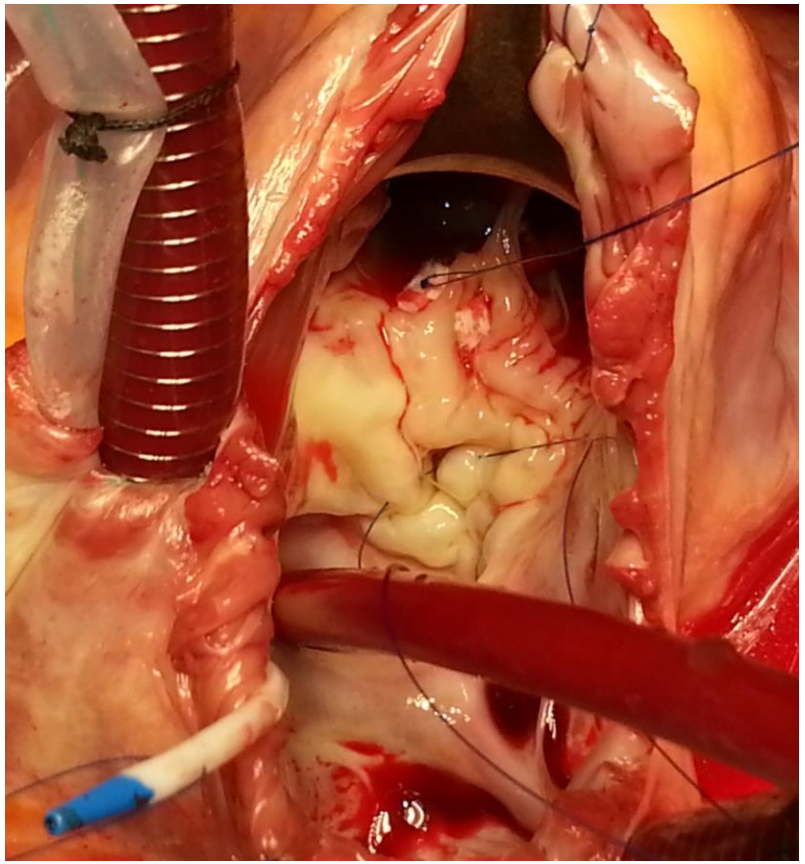




SC à D ou G
Péricarde

CIA OP : VAV droite





Lésions résiduelles potentielles

- CIA résiduelle
- insuffisance mitrale / sténose mitrale
- insuffisance tricuspidienne
- sténose sous-aortique
- BAV

Messages importants:

le plus souvent: chirurgie “prophylactique“

pas droit à l’erreur

gestion douleurs, épanchements, etc.

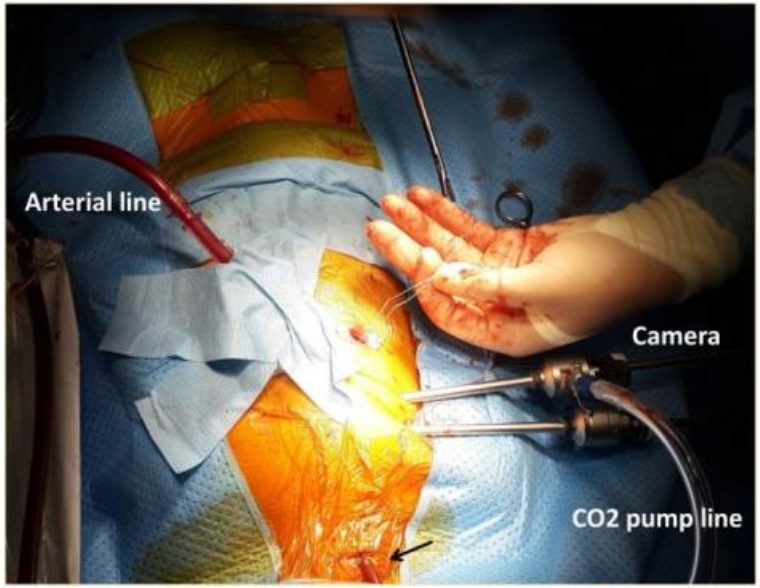
parfois: complications potentielles

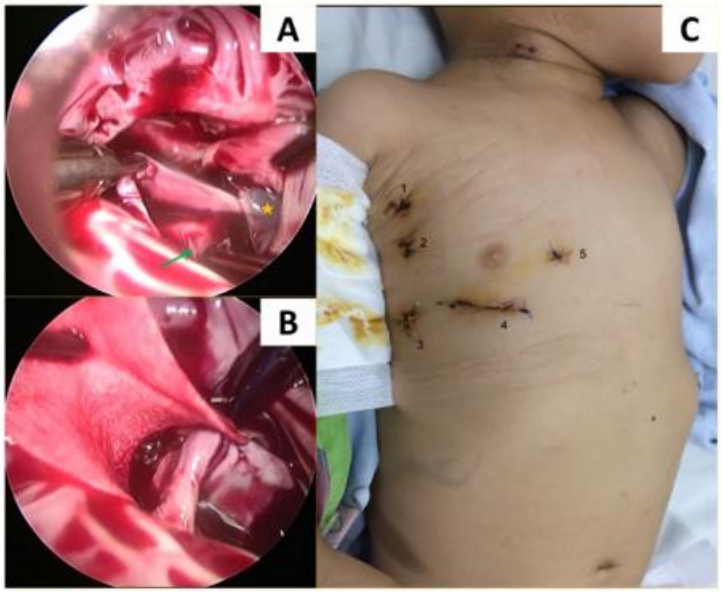
anomalies retour veineux

co-morbidités

VD ‘explosé’, tbl rythme…

Sans cicatrice ?





J Robot Surg. 2019 Mar 4. doi: 10.1007/s11701-019-00943-0. [Epub ahead of print]

Robotic repair of partial anomalous pulmonary venous connection: the initial experience and technical details.

Onan B[1], Aydin U[2], Kadirogullari E[2], Onan IS[2], Sen O[2], Kahraman Z[3].

Author information

1 Department of Cardiovascular Surgery, University of Health Sciences, Istanbul Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, Istanbul, Turkey. burakonan@hotmail.com.

20 patien
25 ans

J Thorac Dis. 2018 Dec;10(12):6557-6562. doi: 10.21037/jtd.2018.10.89.

Total endoscopic repair of atrial septal defect under on-pump beating heart.

Tang Y[1], Wu Y[1], Zhu J[1], Liu X[1], Zhou J[1], Huang H[1], Li M[1], Dai Y[1], Han X[1].

Author information

1 Department of Cardiovascular Surgery, First Affiliated Hospital with Nanjing Medical University, Nanjing 210029, China.

161 patients
28 ans

Korean Circ J. 2017 Sep;47(5):769-775. doi: 10.4070/kcj.2017.0059. Epub 2017 Sep 18.

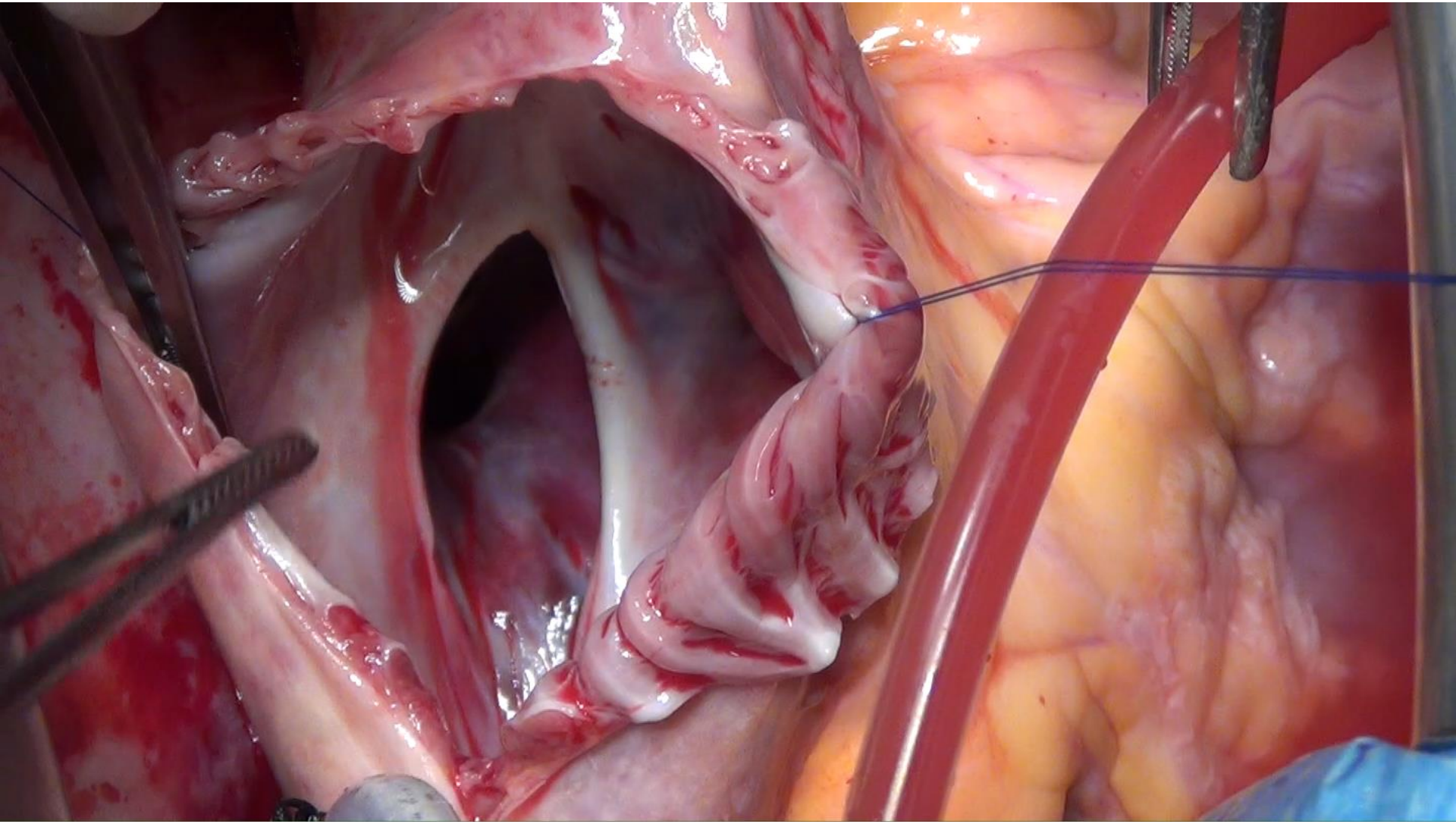
The Mid-term Results of Thoracoscopic Closure of Atrial Septal Defects.

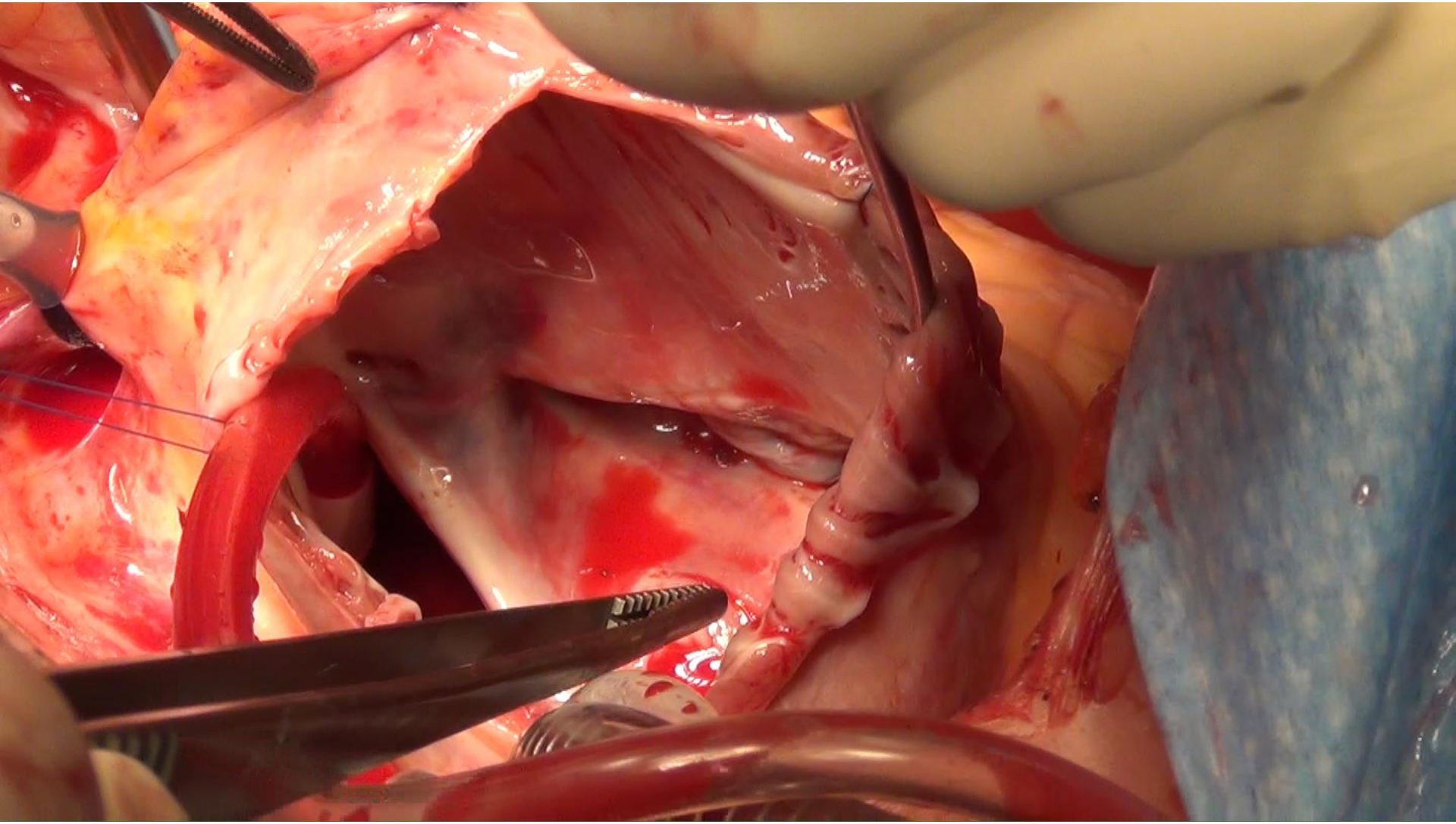
Lee H[1], Yang JH[1], Jun TG[1], Kang IS[2], Huh J[2], Park SW[3], Song J[2], Kim CS[4].

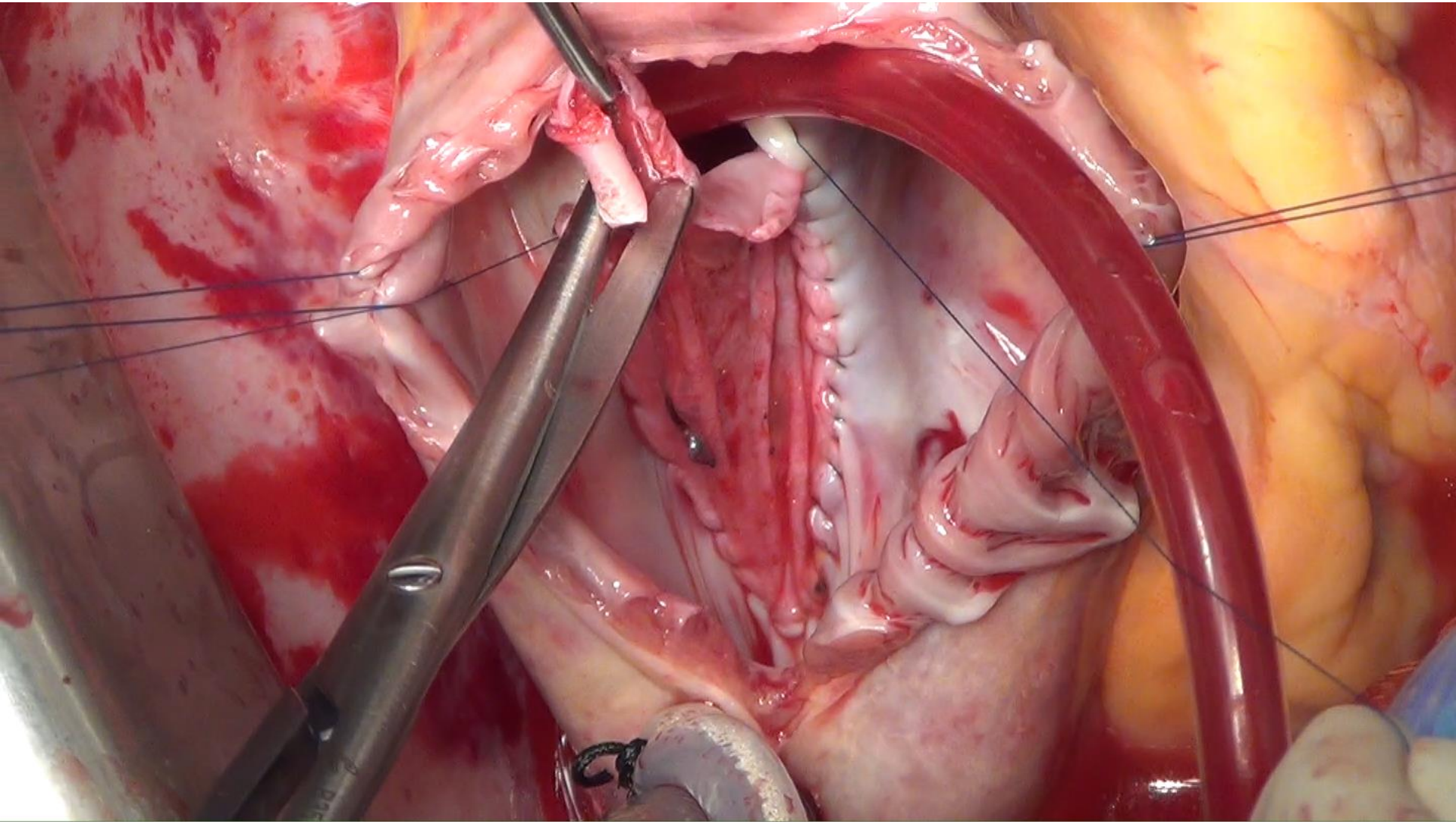
Author information

1 Department of Thoracic and Cardiovascular Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea
2 Department of Pediatrics, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea.
3 Division of Cardiology, Department of Medicine, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea.
4 Department of Anesthesiology and Pain Medicine, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea.

66 patients
27 ans







Merci de votre attention,

Quelques questions ?