M3C

Anomalous origin of the left coronary artery from the pulmonary artery (ALCAPA) :

<u>Traitement Chirurgical</u>

DIU Réanimation Chirurgicale des Cardiopathies Congénitales

ALCAPA:

- rare. 1/300 000 Naissances
- Brooks 1986
- 1ère cause d'ischémie et/ou d'infarctus du myocarde chez l'enfant
- Mortalité 90% la première année
- Diagnostique précoce , seul ***traitement est chirurgical***

Chirurgie

- ***But*** : Restaurer une double circulation coronaire

-***Quand*** : ***dès le diagnostique***

-***Type de patients***

Nné.

Résistances pulmonaires htes
PAP flux anterograde

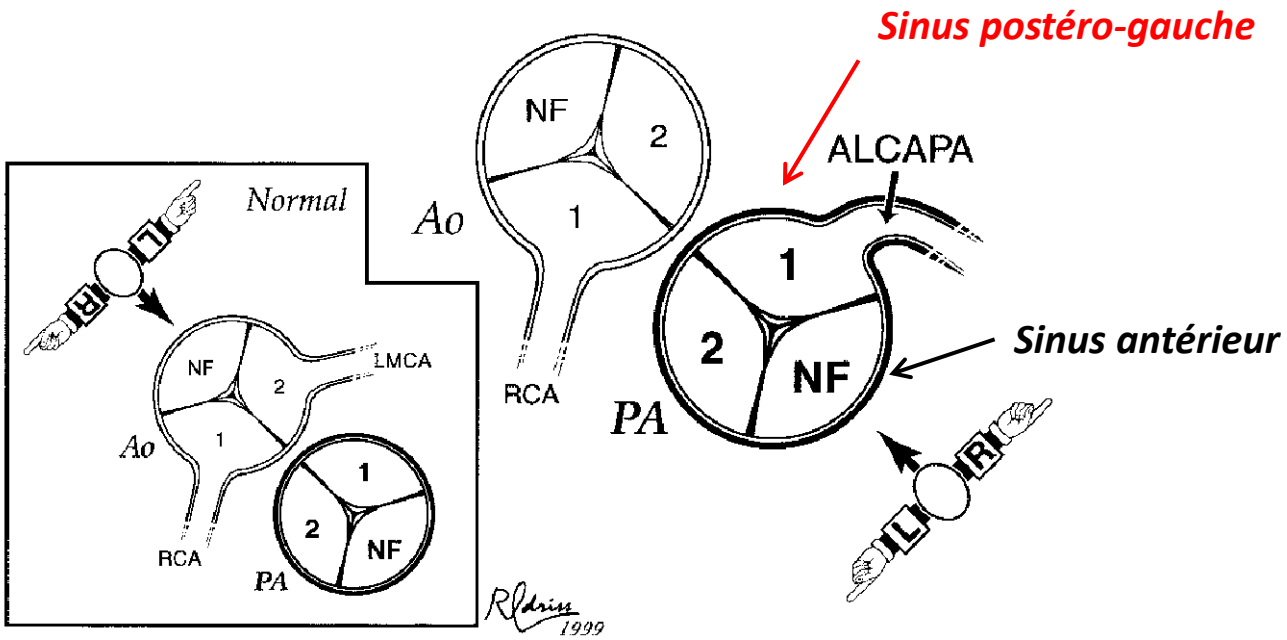
Enfant

Baisse du flux antérograde,
Flux reverse « vol »coronaire
Abscence de collatérales intercoronaires
Ischémie myocardique sévère
Dysfction VG , IM

Adulte

10-15% DES PTS
CDTE dominante
Intrcoronaires collatérales
Sténose de l'ostium ds l'AP
Asymptomatique
Mort subite 35 ans (90%)

Chirurgie: Classification anatomique



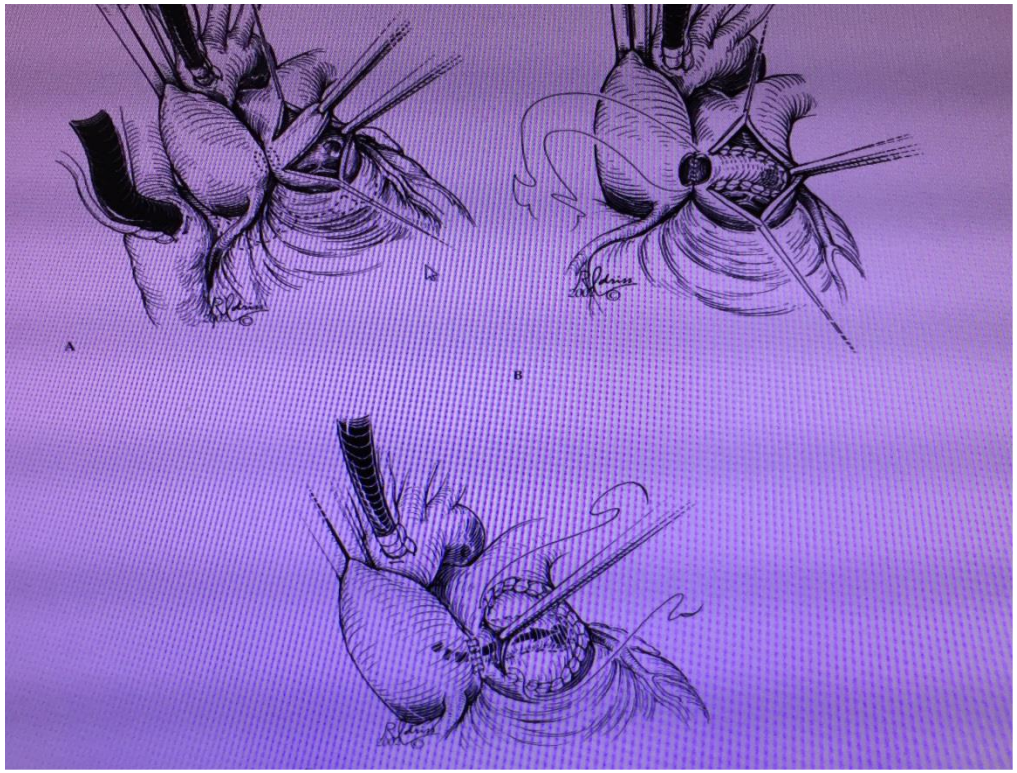
Origine: - sinus postéro-gauche « right-hand sinus »
- sinus postero-droit. « left- hand sinus »
- sinus antérieur
- tronc, artère pulmonaire

Chirurgie. : Technique

- 1950 : Potts (Chicago) création d'une fenêtre aorto-pulmonaire
- Mustard. end to end anastomose entre carotide gauche et coronaire gauche
- Case : PAB
- Sabiston ligature de la coronaire gauche à son origine
- Colley pontage saphène , Meyer anastomose sous –clavière gauche
- ***1974: Neches :*** **-** ***Correction anatomique***
    - ***Réimplantation directe de la coronaire gauche dans l'aorte***

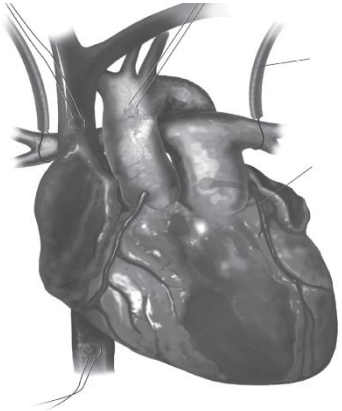
- **1979 Takeuchi tunnel pour les formes à réimplantation difficile**

Intervention de Takeuchi



Complications: **- obstruction de l'artère pulmonaire**
-sténose du tunnel

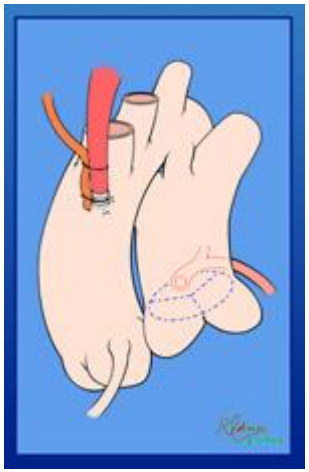
Chirurgie : principes généraux

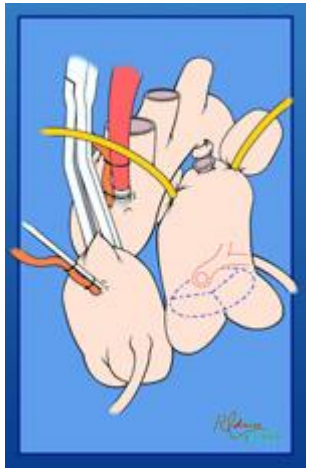


- CEC normothermie

- Protection myocardique :
  - cardioplégie au sang répétées

- Départ de CEC
  - décharge cavités gauches
  - Artéres pulmonaires clampées

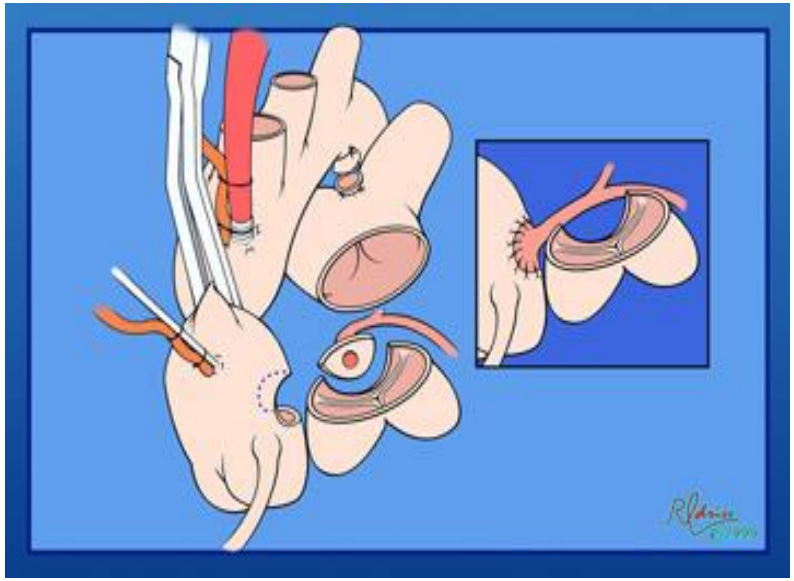


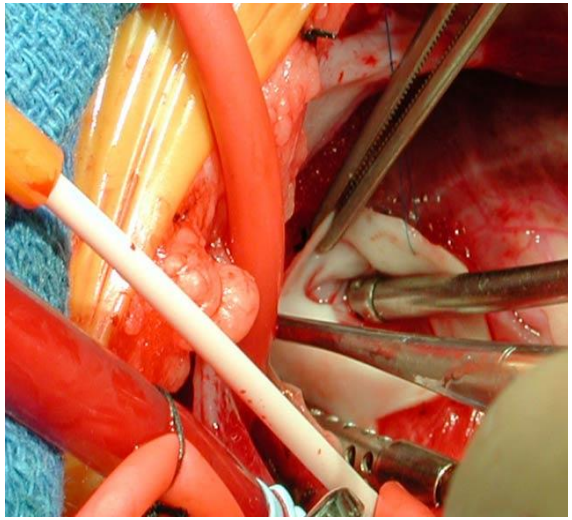


- Clampage aortique :
  - Cardioplégie dans l'aorte
  - Cardioplégie dans l'ostia gauche

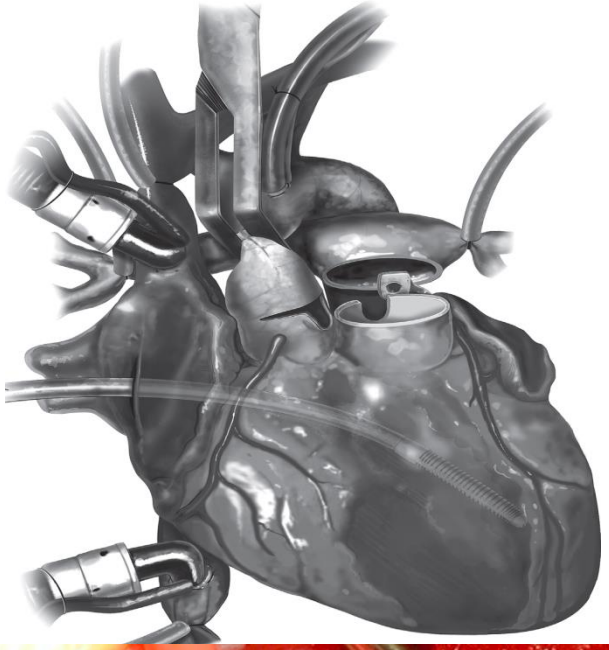
- Sevrage de la CEC:
  - Monitoring de la pression OG , support inotrope
  - Assistance
  - ECMO

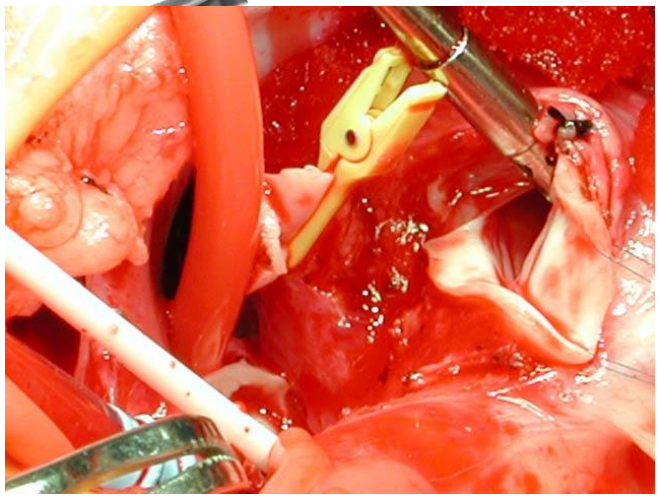
Ouverture et transsection du tronc pulmonaire





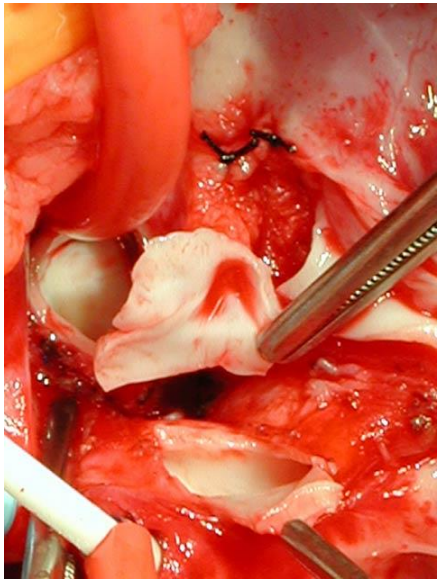
Prélèvement de l'ostia Coronaire , mobisation du tronc coronaire gauche



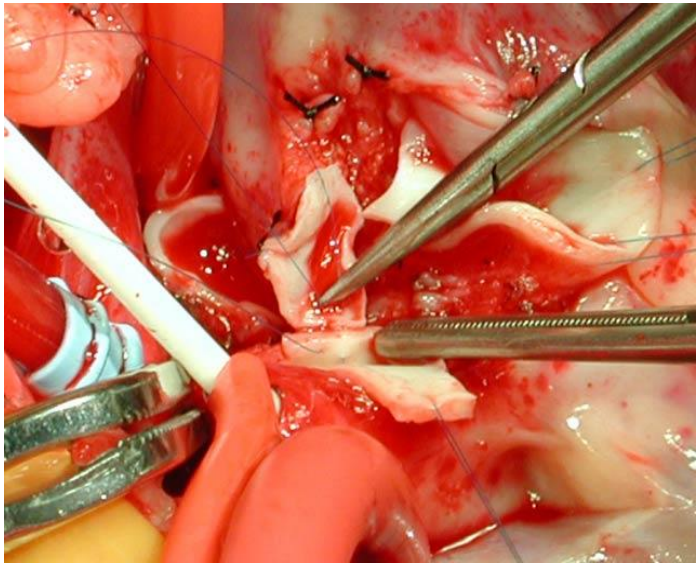


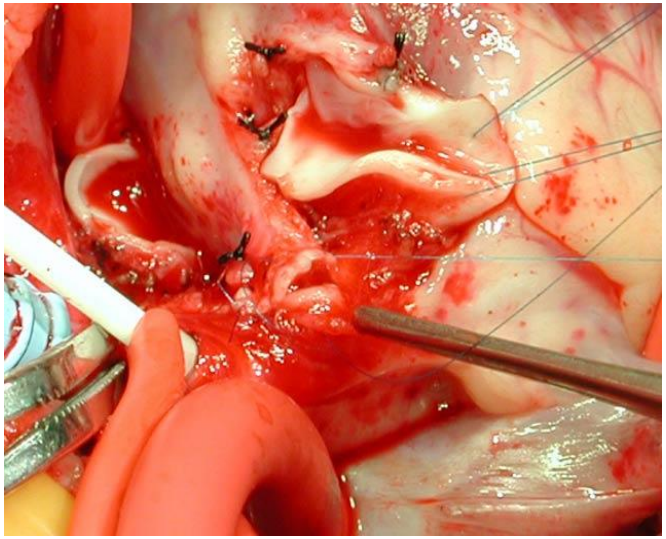
Ouverture verticale de l'aorte ascendante`

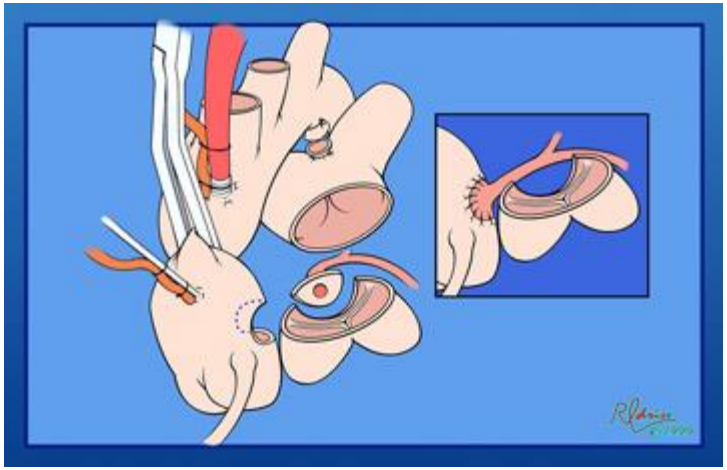
,



Réimplantation de l'ostia gauche

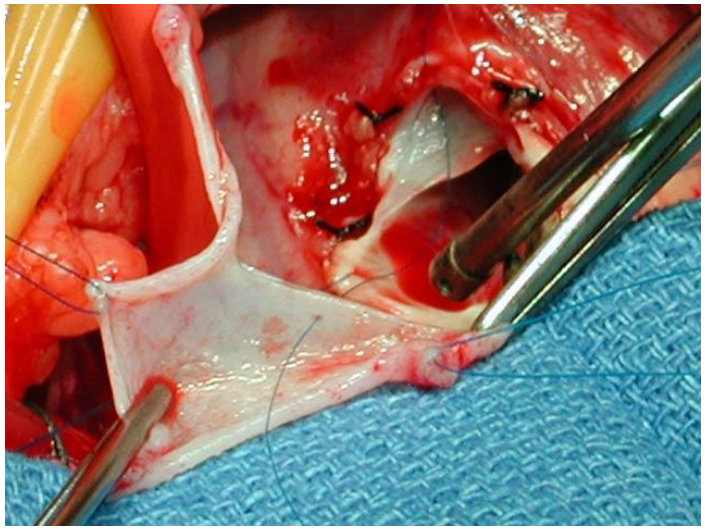




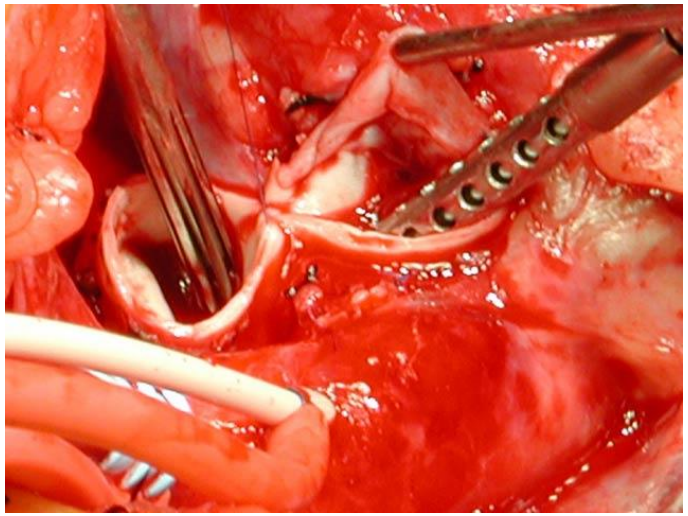


<u>Torsion , kinking , tension</u>

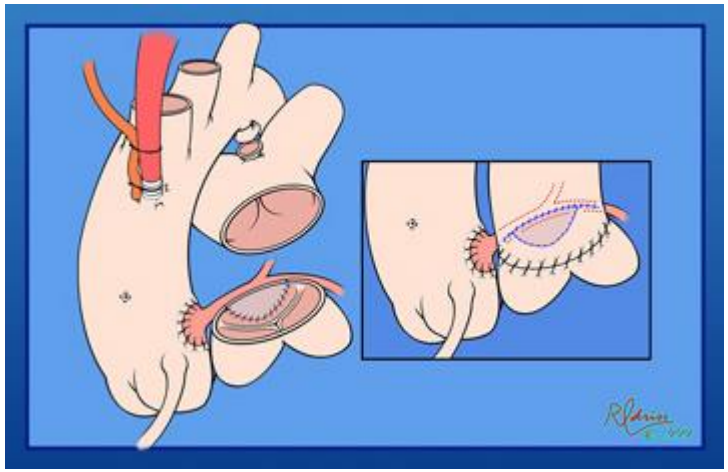
Reconstruction de l'artère pulmonaire



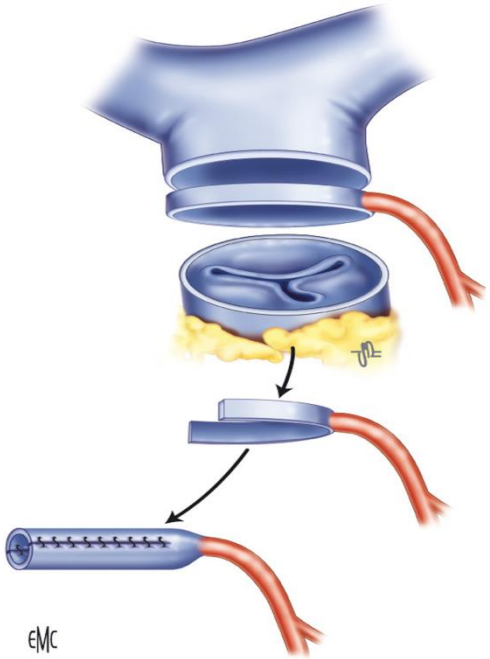
Reconstruction du sinus
par du péricarde frais autologue

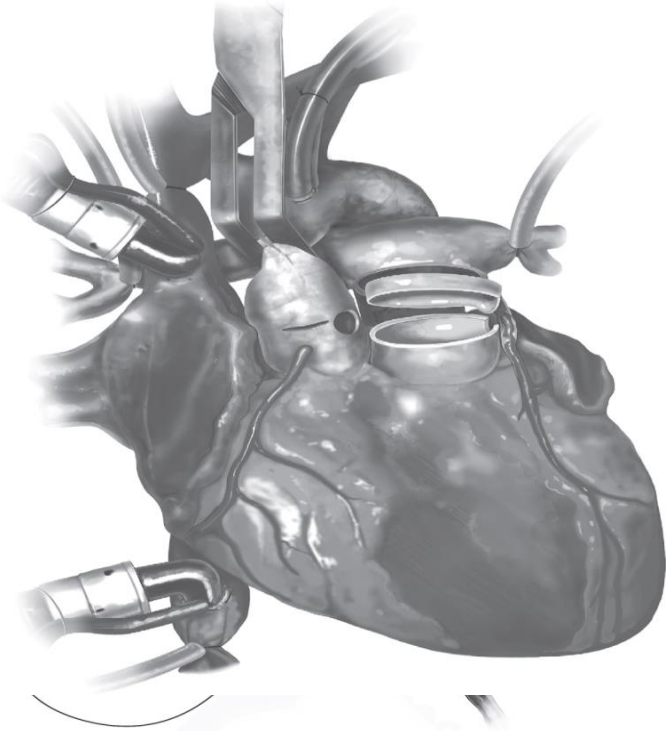


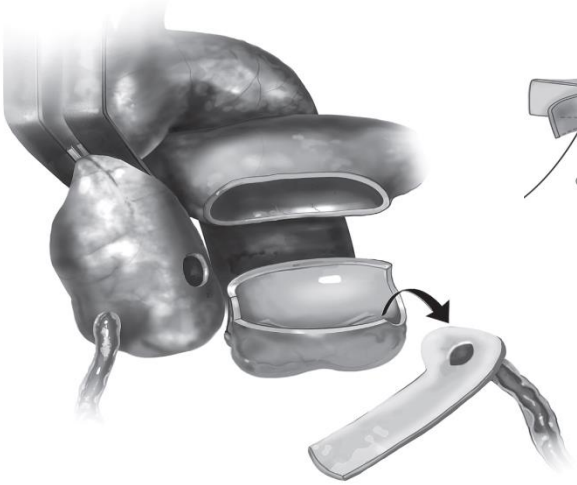
Mobilisation des artères pulmonaires
Reconstruction de l'artère pulmonaire

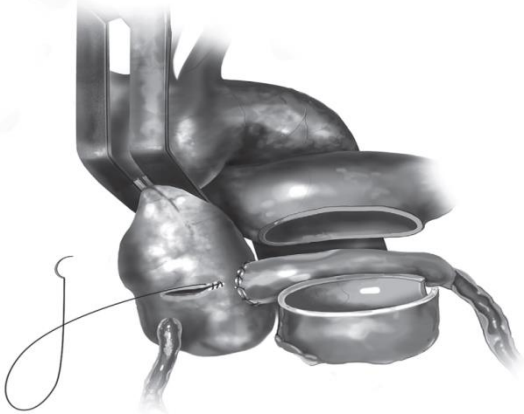


Chirurgie: origine sinus pulmonaire antérieur

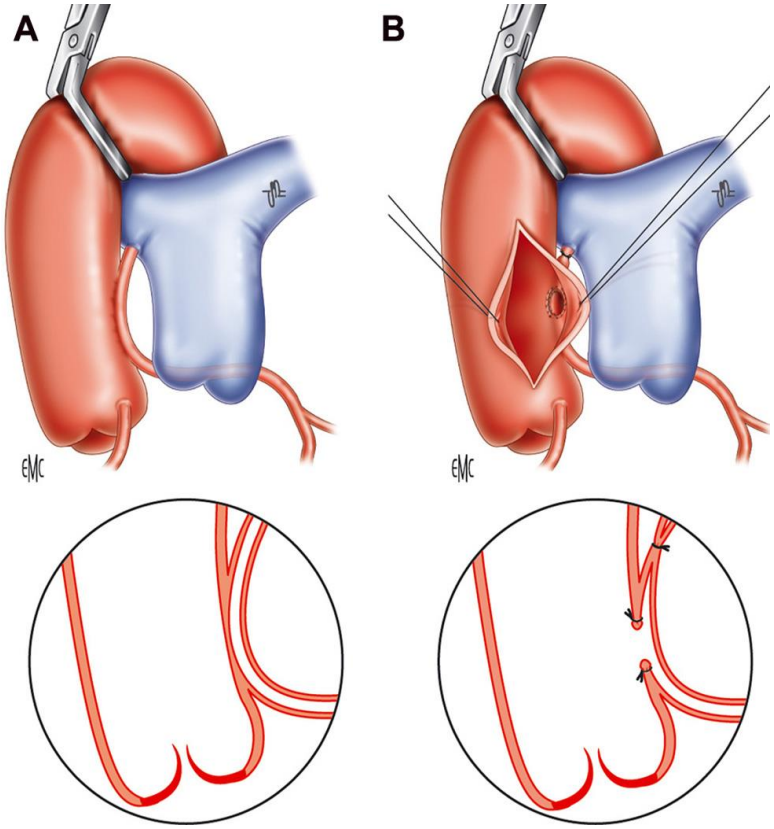








Chirurgie: origine artére pulmonaire droite et trajet intra-mural



Création d'un né- ostia gauche par unroofing

Ligature de l'origine de la coronaire gauche

Insuffisance Mitrale

- ***Mécanisme*** : Ischémie des muscles papillaires
dilation du VG , et de l'anneau mitral

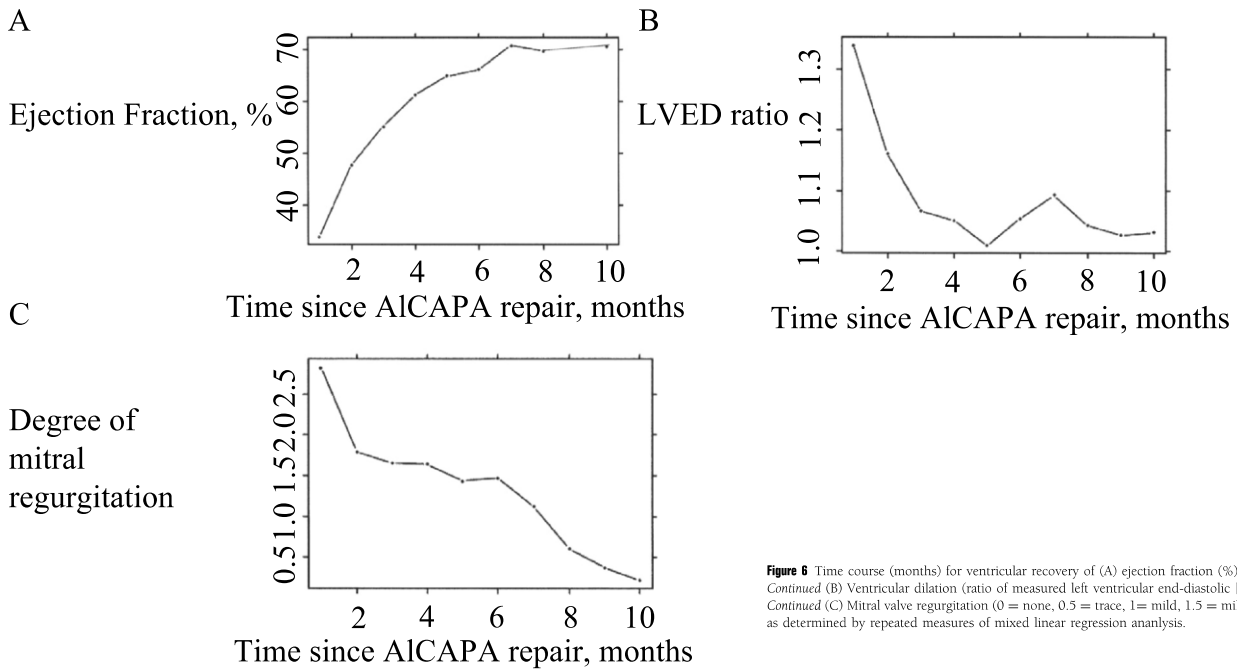


Figure 6 Time course (months) for ventricular recovery of (A) ejection fraction (%). *Continued* (B) Ventricular dilation (ratio of measured left ventricular end-diastolic [LVED] diameter to 95% of normal). *Continued* (C) Mitral valve regurgitation (0 = none, 0.5 = trace, 1= mild, 1.5 = mild to moderate, 2 = moderate, 2.5 = moderate to severe) as determined by repeated measures of mixed linear regression ananlysis.

Anomalous Origin of the Left Coronary Artery From the Pulmonary Artery: Collective Review of Surgical Therapy **(Ann Thorac Surg 2002;74:946–55)**

Ali Dodge-Khatami, MD, Constantine Mavroudis, MD, and Carl L. Backer, MD

- ***Pas de chirurgie mitrale de première intention***
- ***Si IM persiste***
- ***Eliminer une sténose coronaire***

Résultats

Table 1. Results of surgery for anomalous left coronary artery from the pulmonary artery

Author (year)	No. of patients	No. of aortic reimplantations	Early mortality (%)	Need for LVAP/ECMO (%)	Mean follow-up (years)	Late mortality (%)	Reoperation for mitral regurgitation (%)
Schwartz et al. (1997)	42	14 (33%)	14.3	19	3.7	0	2.8
Cochrane et al. (1999)	21	21 (100%)	0	24	6.5	0	4.8
Huddelston et al. (2001)	17	16 (94%)	5.8	18	6.9	0	12.5
Isomatsu et al. (2001)	29	19 (66%)	6.7	0	8.3	0	3.7
Azakie et al. (2003)	47	47 (100%)	8.5	11	4.7	0	2.3
Michielon et al. (2003)	31	14 (45%)	16.1	0	8.8	0	3.8
Barth et al. (2003)	10	10 (100%)	0	0	4.3	0	10
Caspi et al. (2007)	23	23 (100%)	0	8.6	6.5	0	0
Lange et al. (2007)	56	31 (55%)	14.2	0	11	4.2	6.5
Personnal experience	62	62 (100%)	9.7	6.5	9.7	3.6	5.6