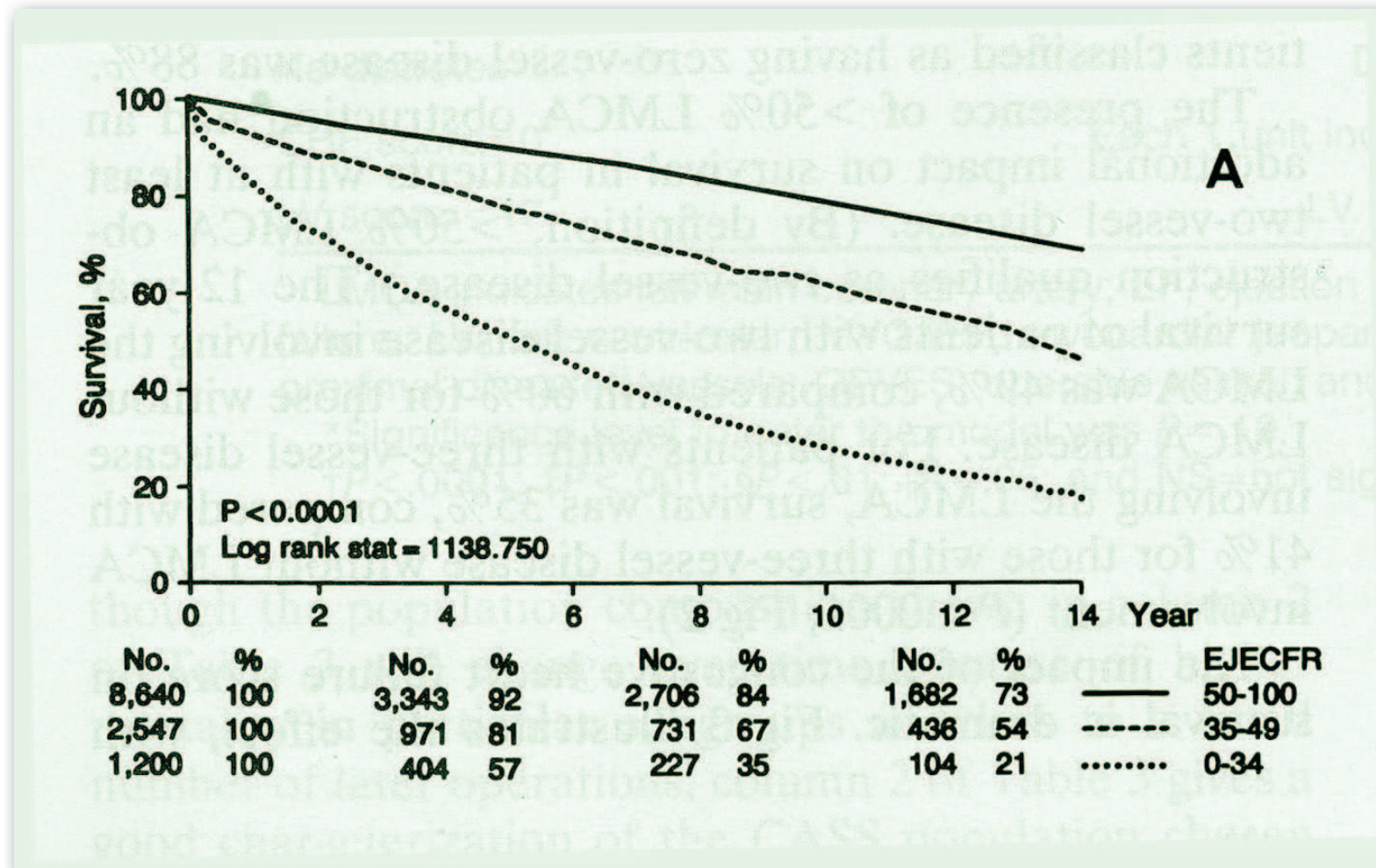


Imagerie TDI du myocarde le chaînon manquant...

P.Croisille

La fonction ventriculaire est un facteur pronostic majeur de survie chez le coronarien



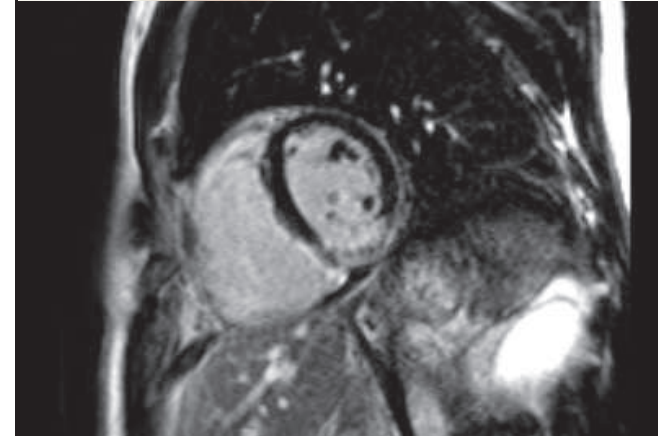
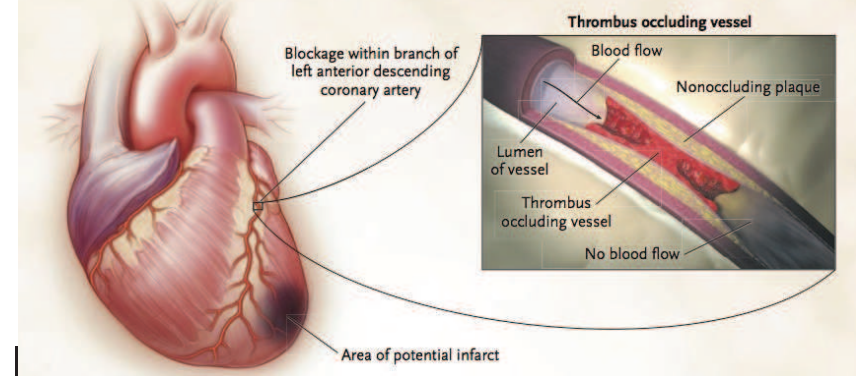
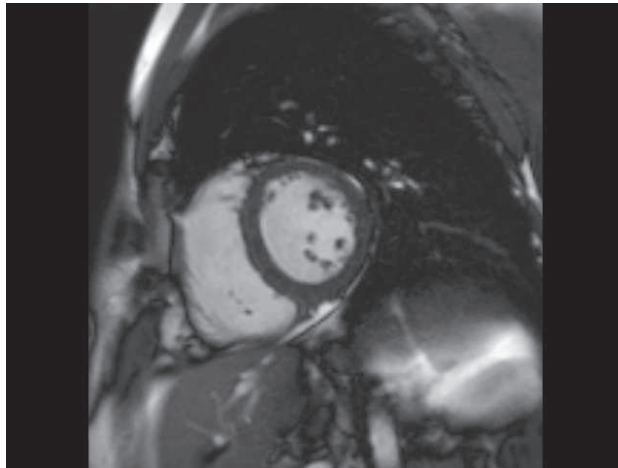
Emond M et al. (CASS) Registry. *Circulation* 1994;90:2645-57.

Time Is Muscle

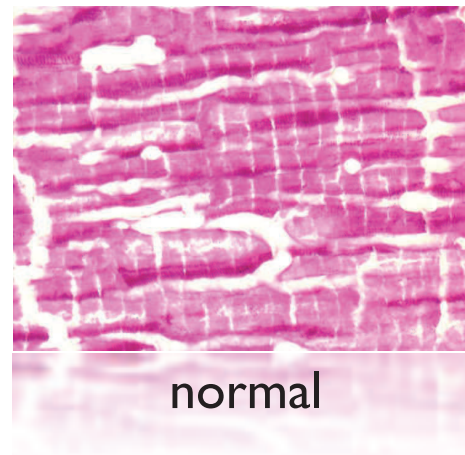
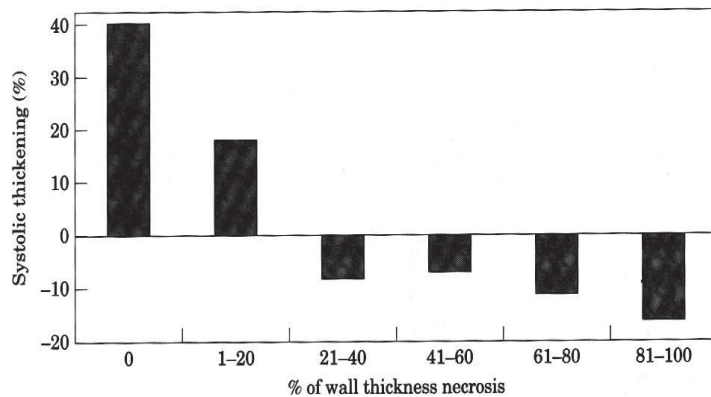
Translation Into Practice

Elliott M. Antman, MD, FACC

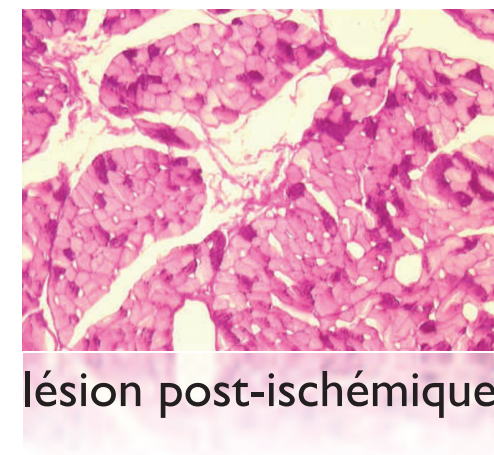
Boston, Massachusetts



infarctus inférieur. Reperfusion à H+2



normal



lésion post-ischémique

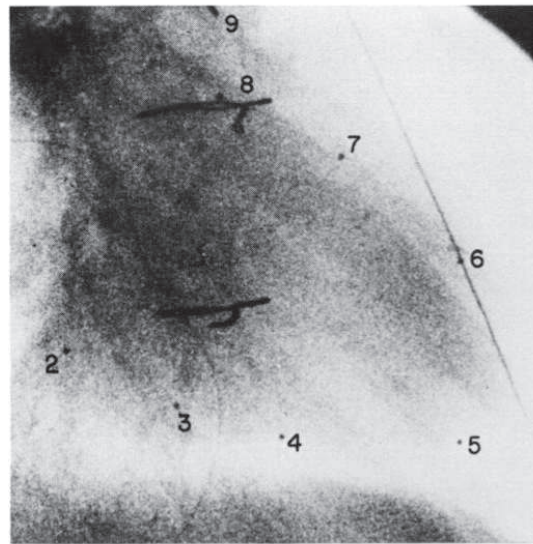
Liebermann, Circulation 1981

Circulation, Volume 52, November 1975

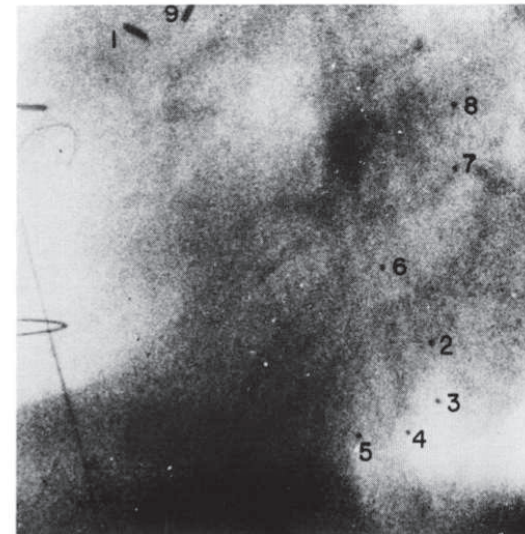
Measurement of Midwall Myocardial Dynamics in Intact Man by Radiography of Surgically Implanted Markers

By NEIL B. INGELS, JR., PH.D., GEORGE T. DAUGHTERS, II, M.S.,
EDWARD B. STINSON, M.D., AND EDWIN L. ALDERMAN, M.D.

Tiny radiopaque helices (0.85×1.5 mm) of pure tantalum wire were implanted by means of a simple inserter instrument into the left ventricular myocardium in 24 patients at the time of cardiac surgery.



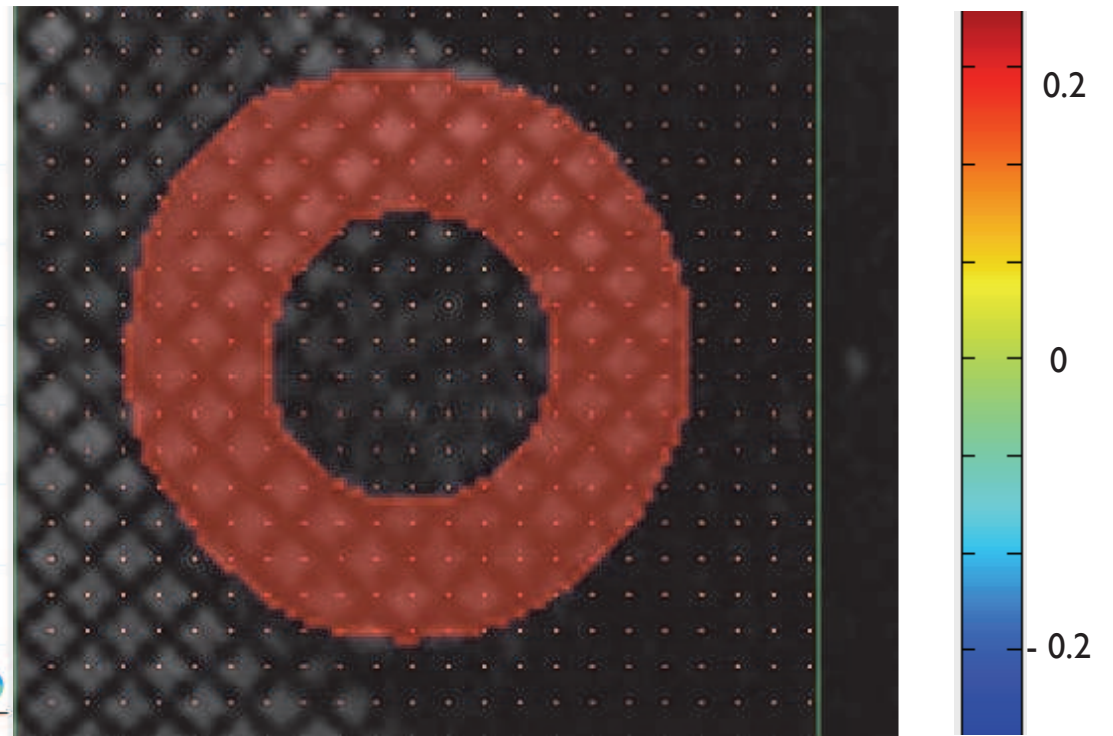
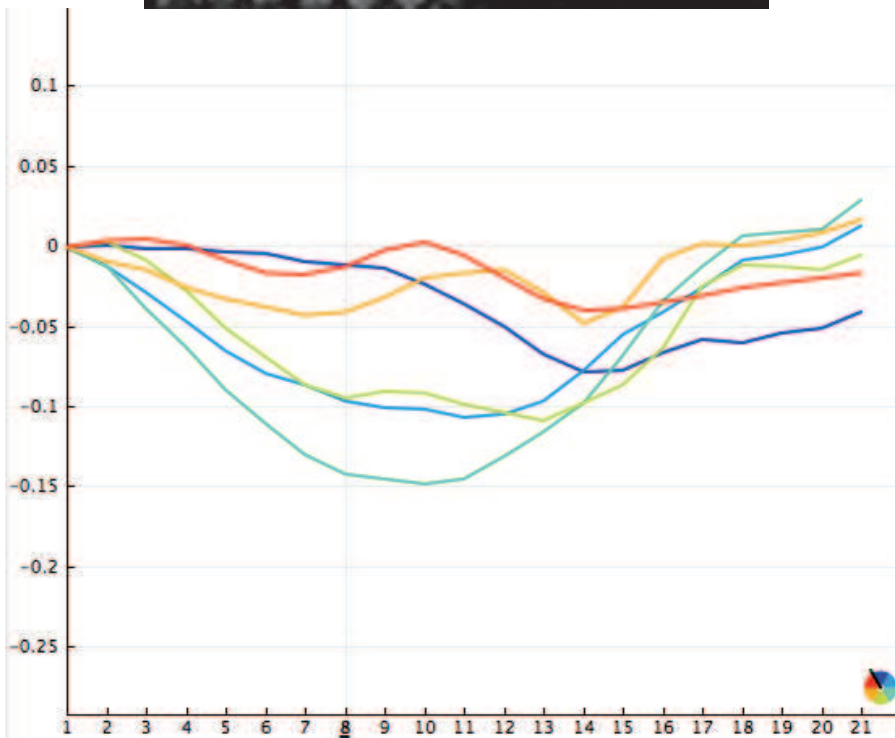
RAO



LAO



MRI-1 J3



Ecc et displacement motion field

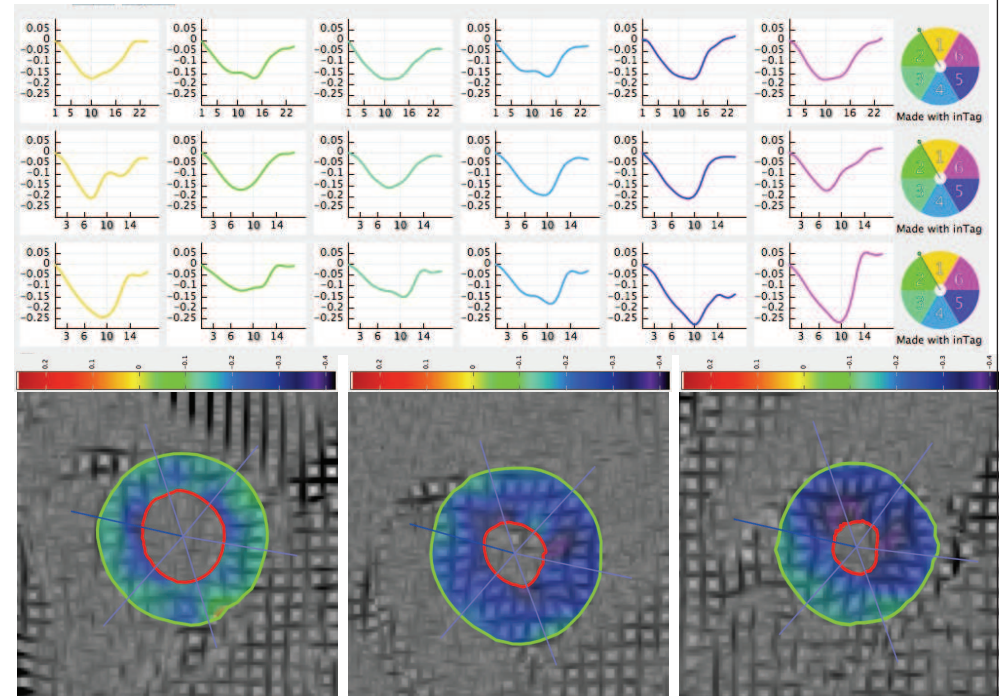
analyzed with Intag *Creatis*
LRMN

InTag in OsiriX

-public depuis le 5/01/2010

-sites collaborateurs: 126

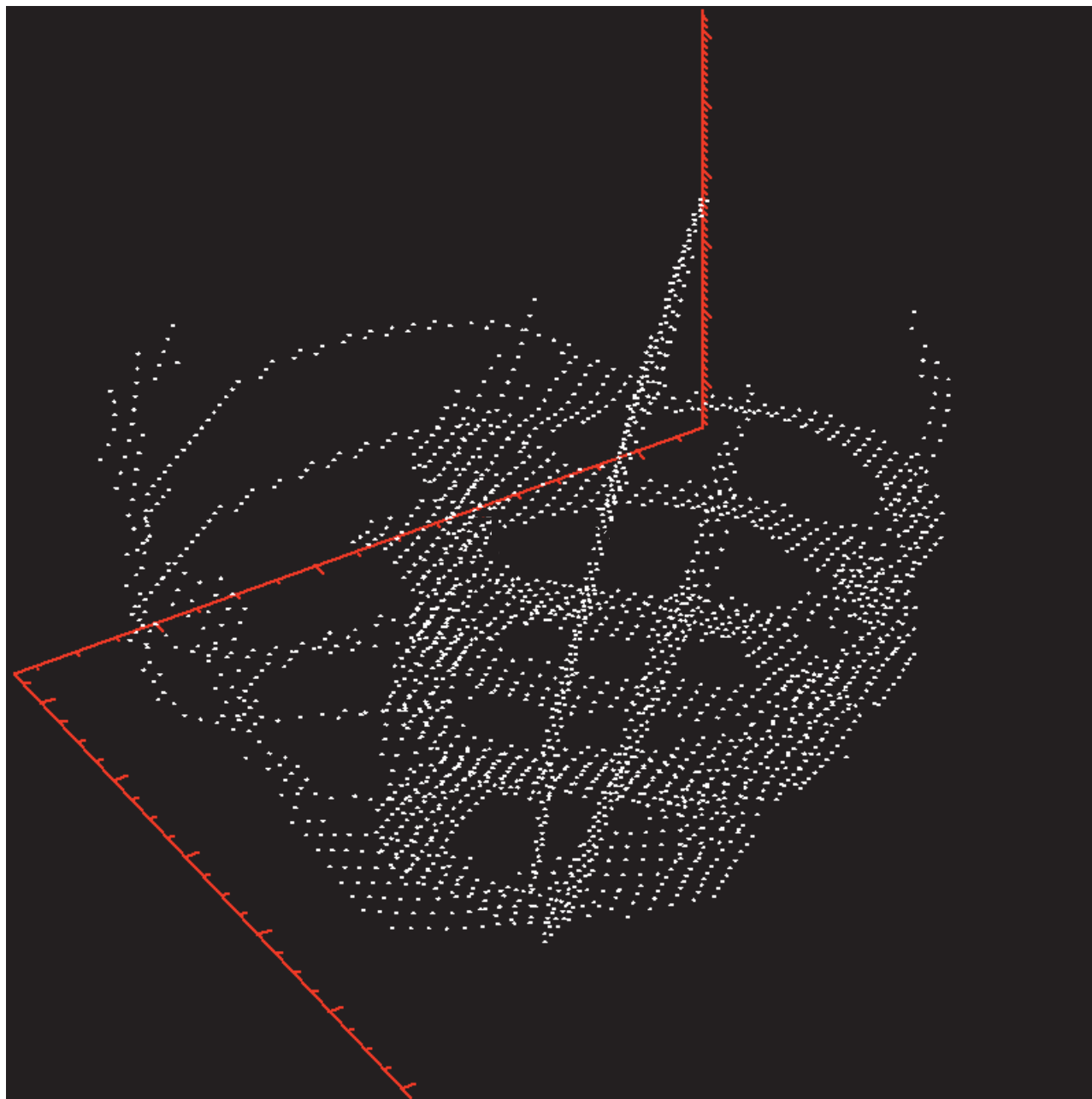
UCL Bruxelles
HUG Geneve
Mayo clinic, Rochester
King's college, London
CCM, Monaco
U. Michigan, Ann Arbor
UCLA, Los Angeles
I of Cardiology, Varsovie
Hop St Pau, Barcelone
UZ Leuven
Molecular Imaging , Fukuoka
WF Health sciences, Winston-Salem
University of Adelaide
Birmingham Children's, Boston
University Hospital, Ulm
U. California, San Diego
Children's Hospital, Cincinatti
IUCPQ Laval University, Quebec



5786 visites /87 pays/ 249 téléchargements uniques



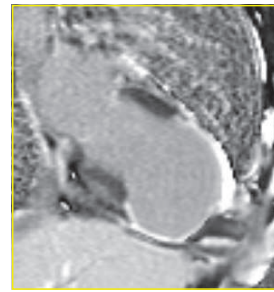
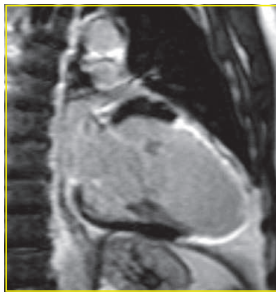
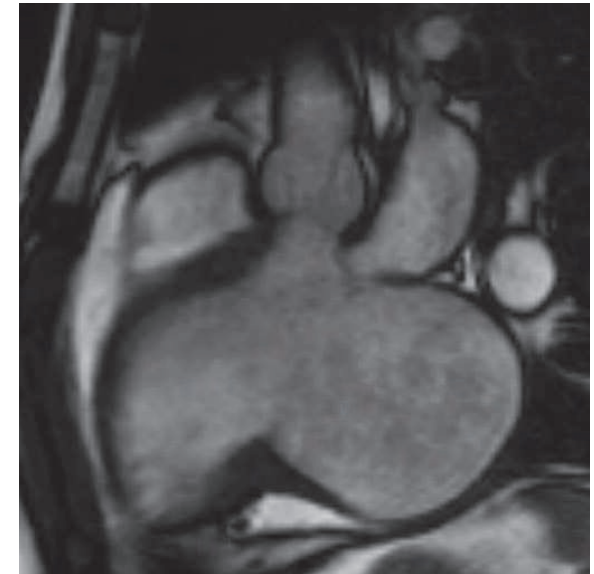
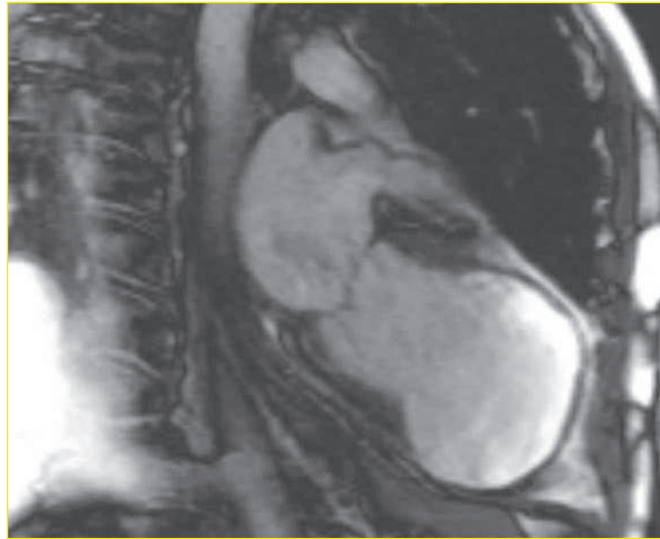
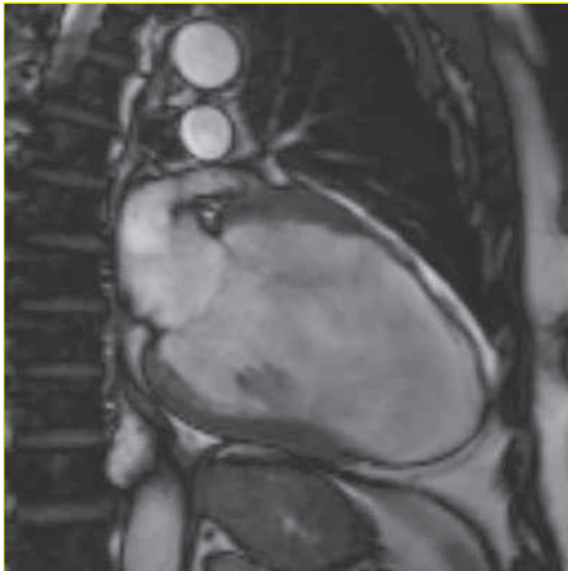
tracking 3D in vivo cine-DENSE



Le remodelage myocardique

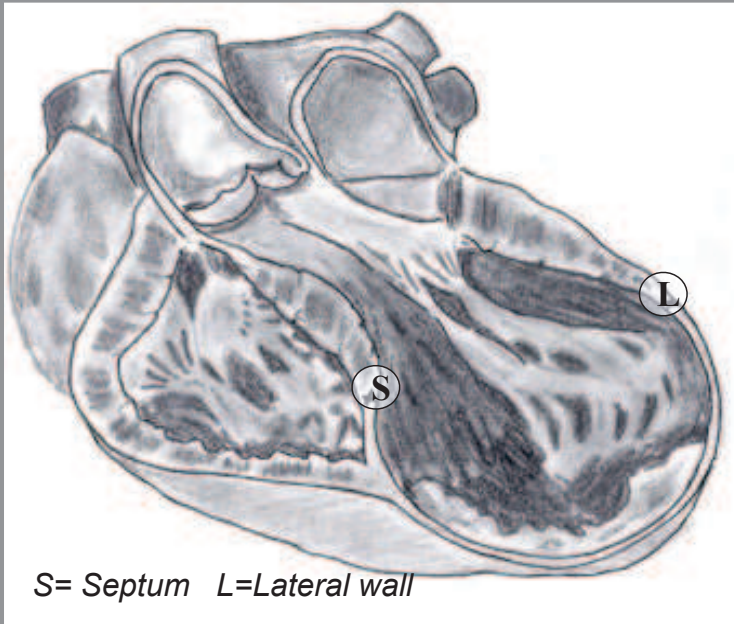
«lorsque 20-25% de la surface myocardique est atteinte...»

Klein et al. circulation 1967



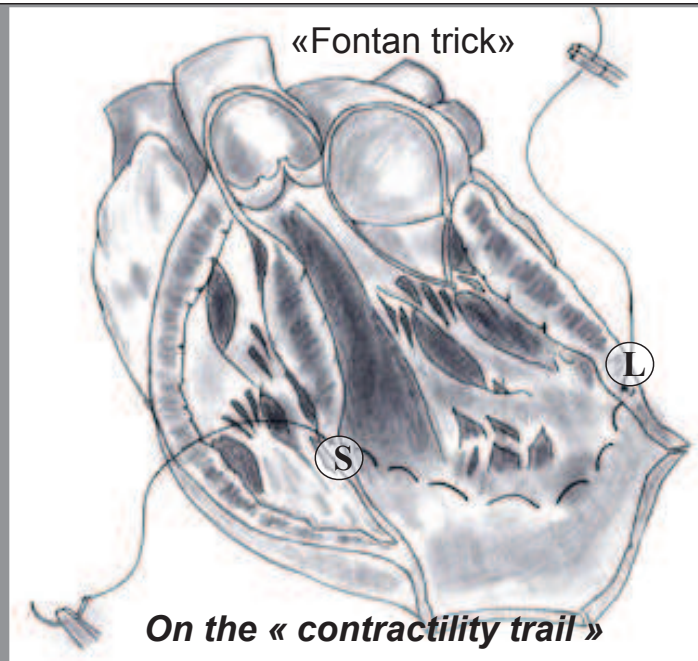
L.V.R

V.Dor



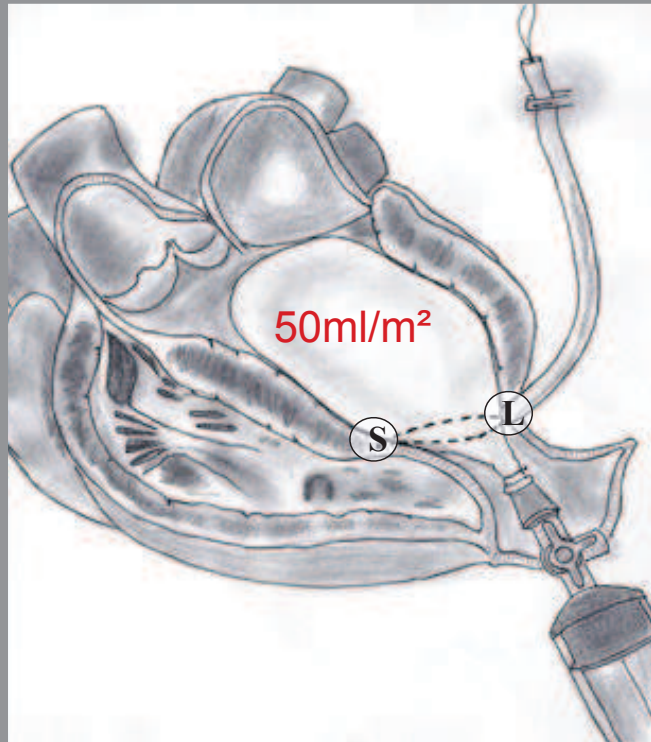
S= Septum L=Lateral wall

A) Antero Septo Apical Aneurysm



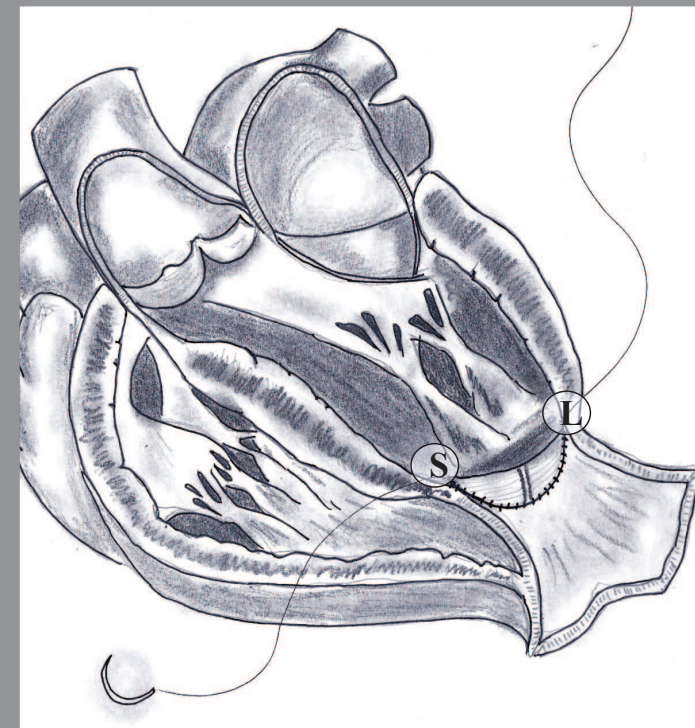
On the « contractility trail »

B) Endoventricular purse-string suture



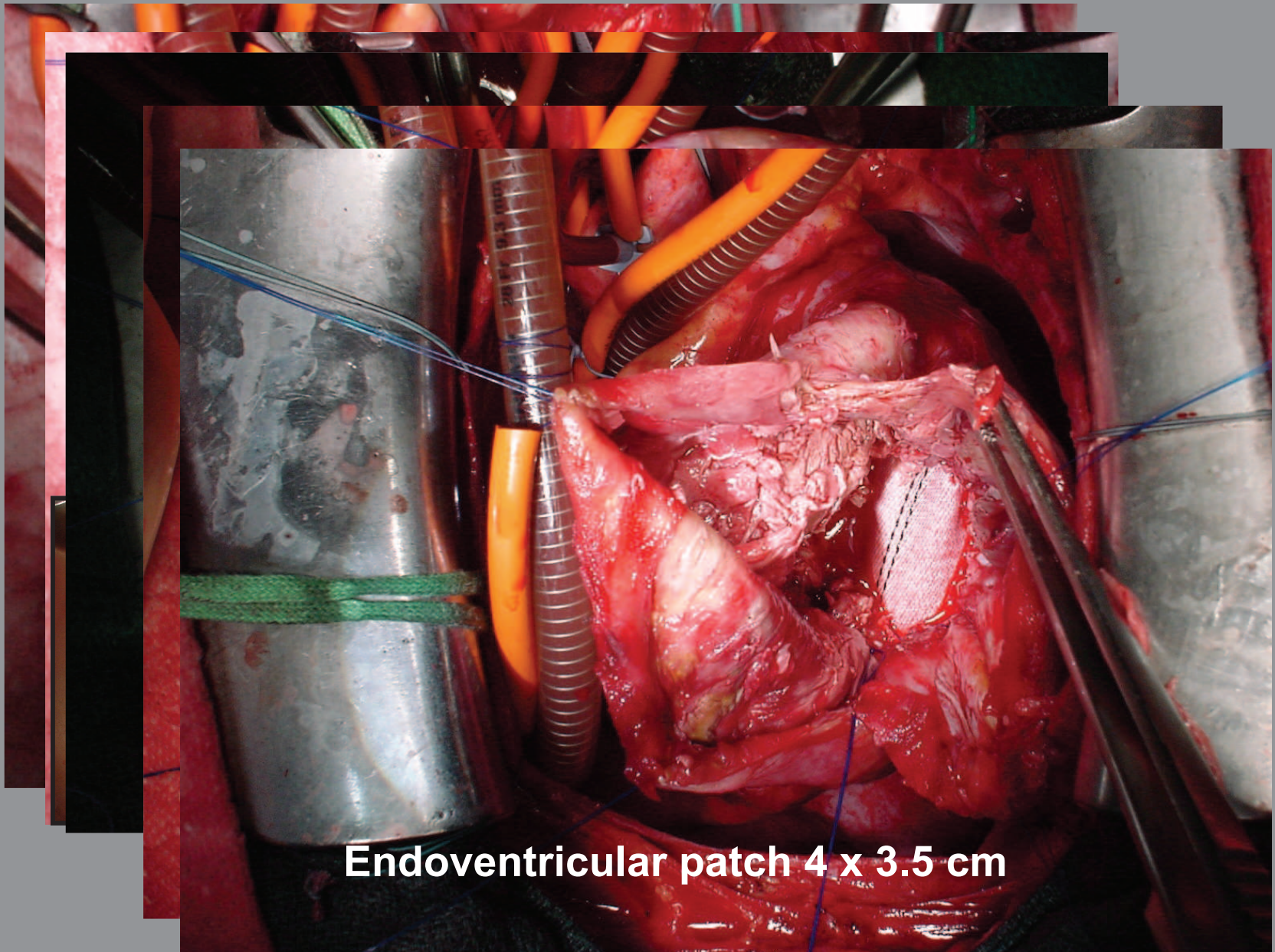
50ml/m²

C) Curvature restoration and balloon sizing



D) Endoventricular patch reconstruction

Reconstruction ventriculaire



Endoventricular patch 4 x 3.5 cm

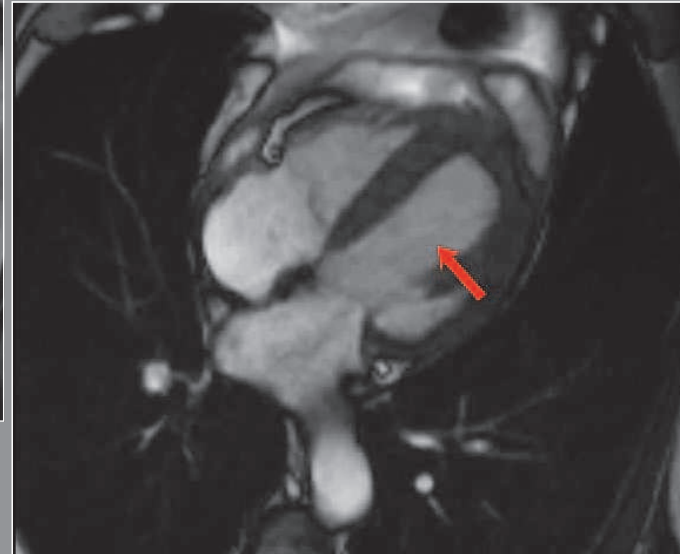
Mr. NIC. 75 y. A.M.I 04/07, stenting LAD at day 6. Stent thrombosis

Pre-op 10 July 07



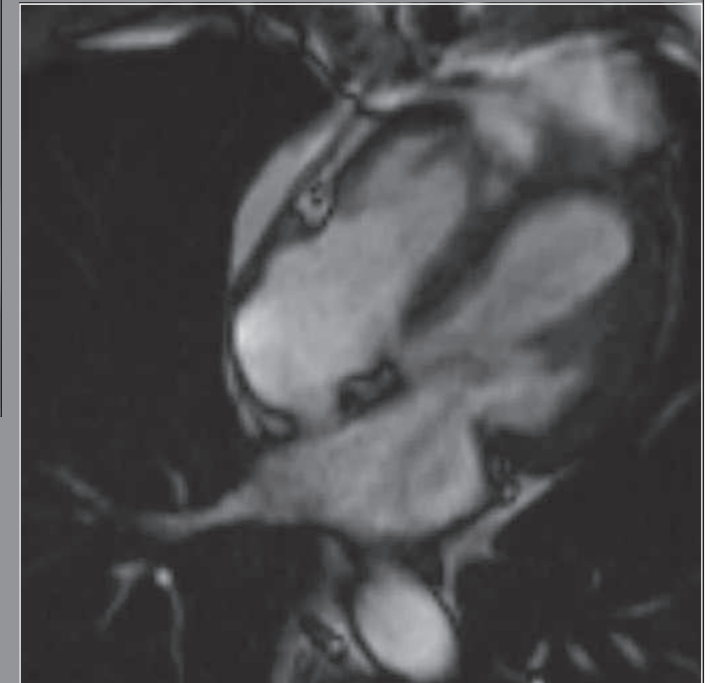
LVEF : 9 %
EDVI : 320 ml/m²
ESVI : 289 ml/m²
LAVI : 80.8 ml/m²
“bedridden” in ICU
CaDVI : 70 ml/m²

> 1 month



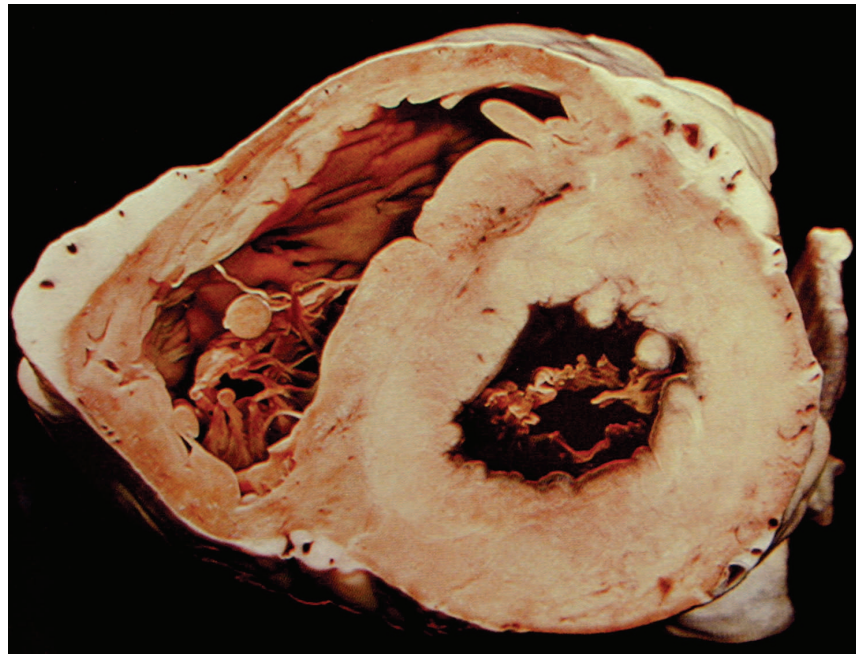
LVEF : 39 %
EDVI : 76 ml/m²
ESVI : 47 ml/m²
LAVI : 45.8 ml/m²
6 min WT : 570 m

> 1 year (Oct. 08)

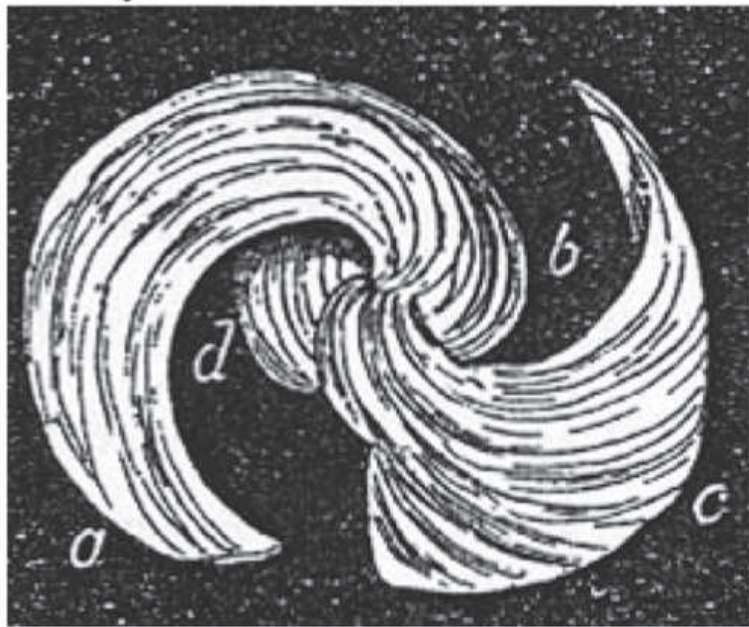
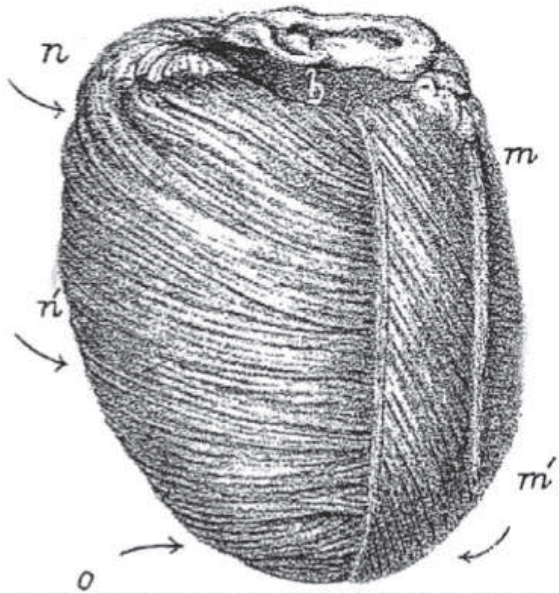


LVEF : 51 %
EDVI : 60 ml/m²
ESVI : 30 ml/m²
LAVI : 31 ml/m²
6 min WT : 650 m
Playing golf !

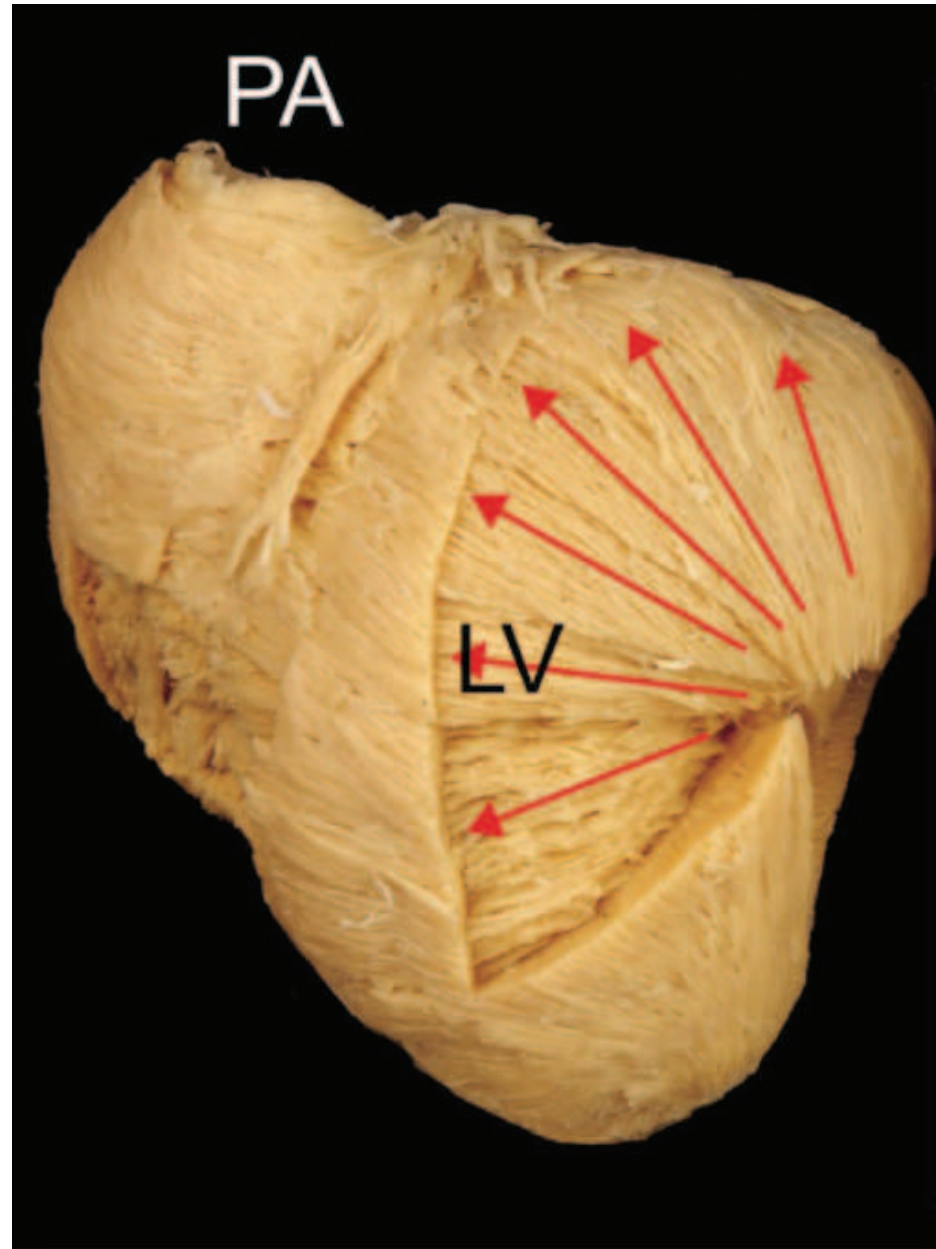
Courtoisie V.Dor, CCT, Monaco



Le myocarde n'est pas un matériel tissulaire homogène

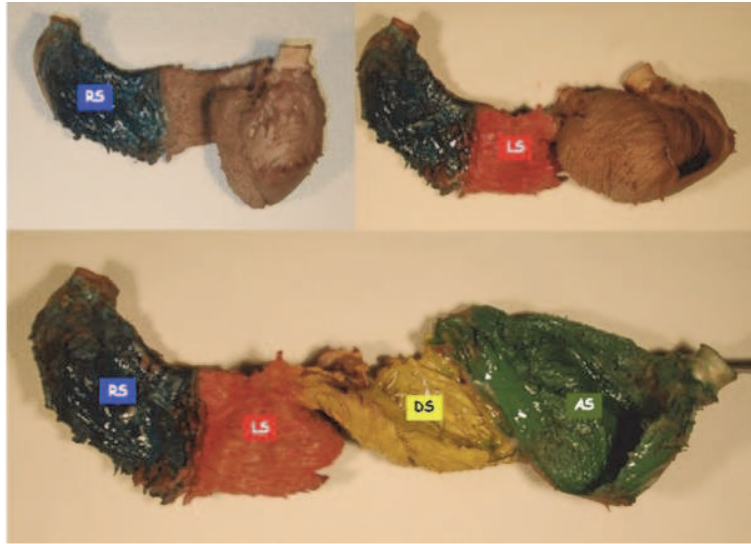


Pettigrew, "Design in Nature, 1908

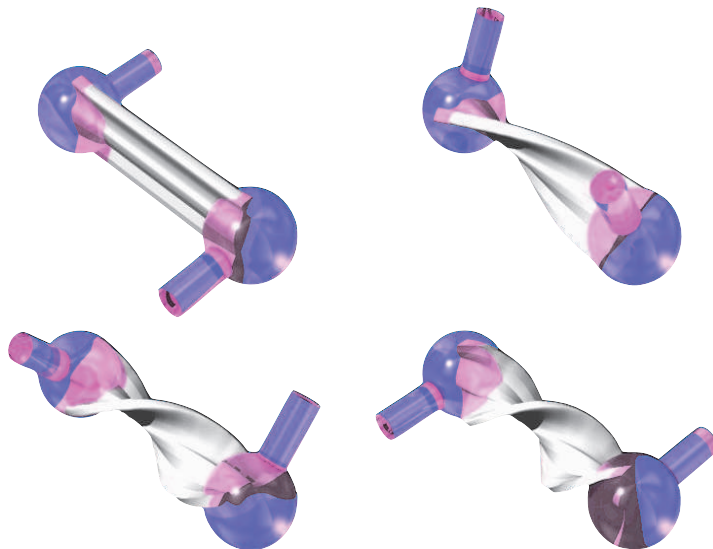
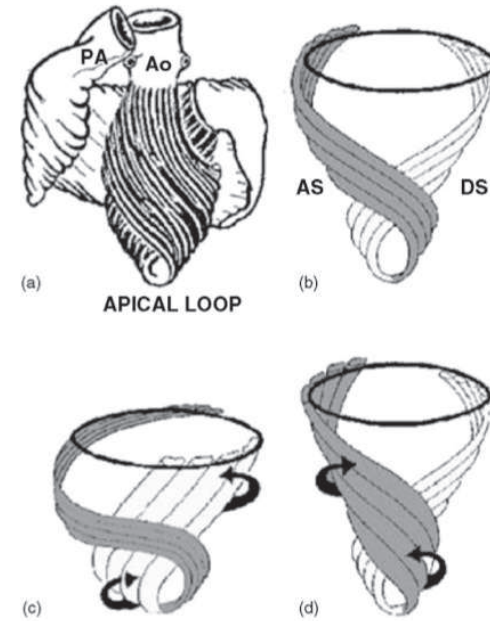


Anderson, *Anat Rec Part A*, 288A:579(2006)

LV rotation and torsion (twist-untwist)

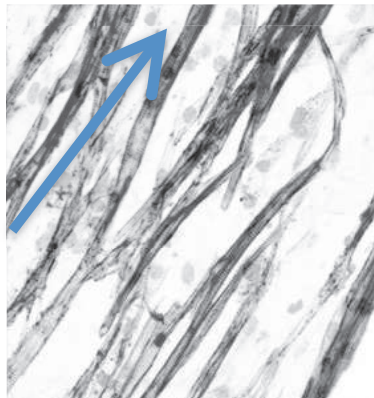
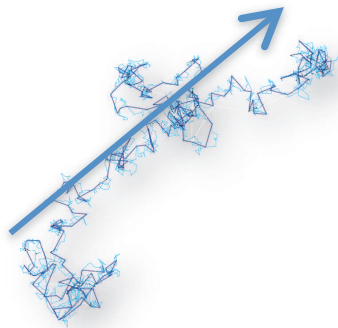


T

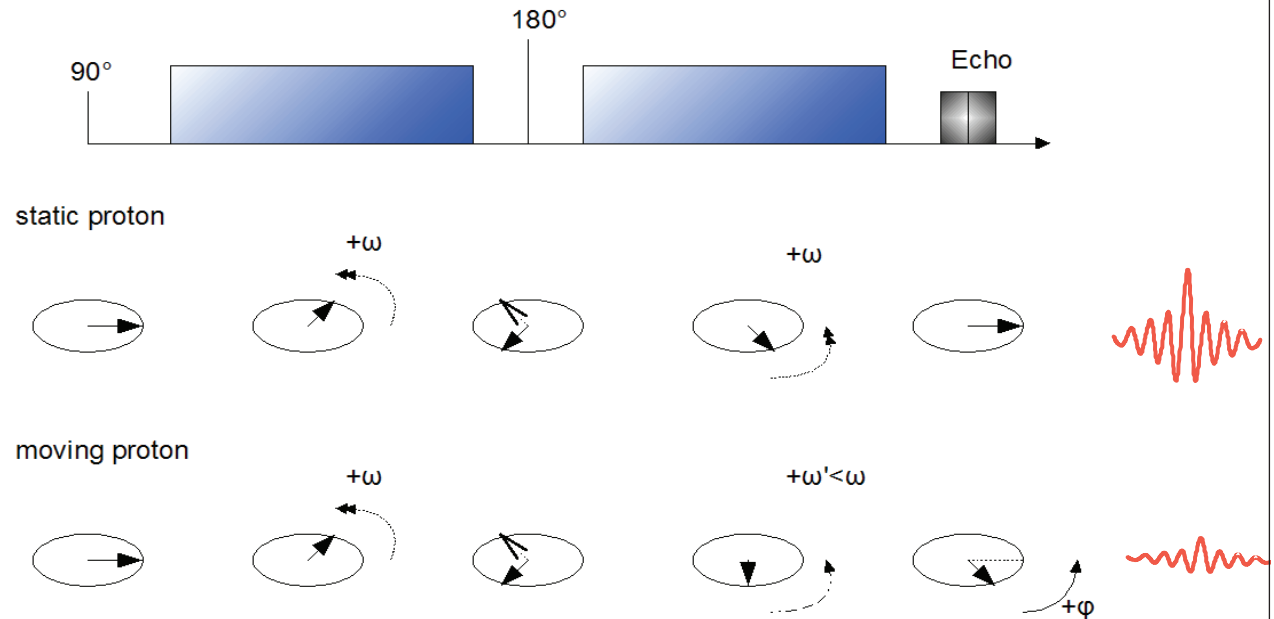


Vers une imagerie de l'architecture tissulaire

IRM pondérée en diffusion



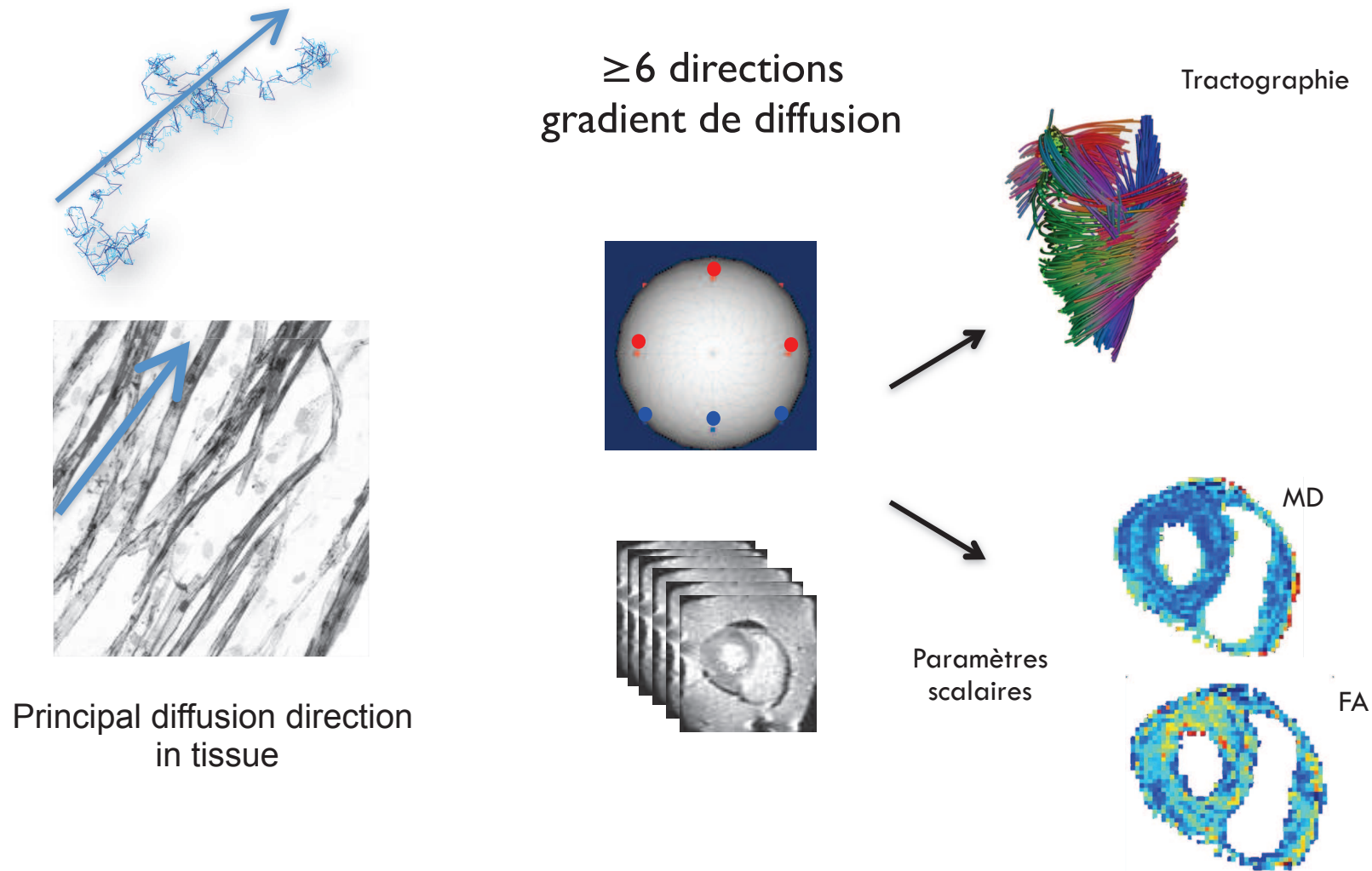
Principal diffusion direction
in tissue



- protons diffusant ne sont pas refocalisés à l'écho
- problématique du mouvement au cours du cycle et en chaque point du myocarde !!!

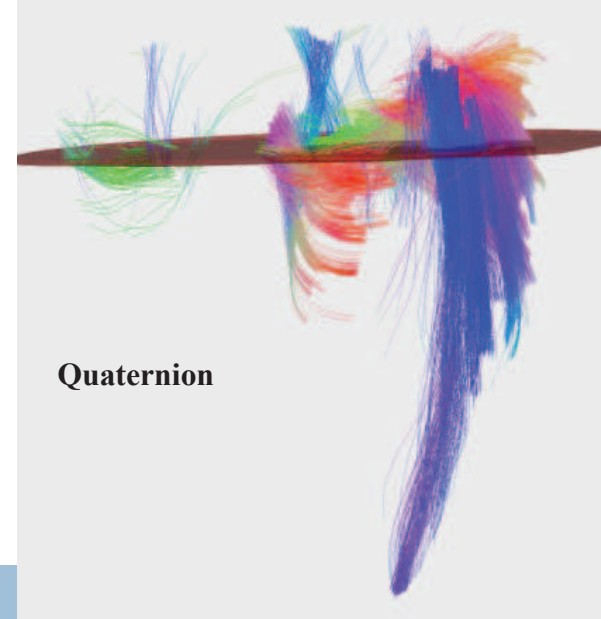
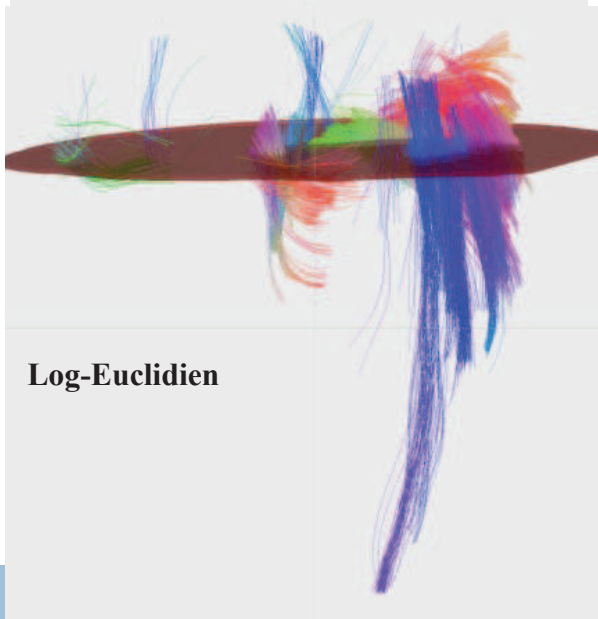
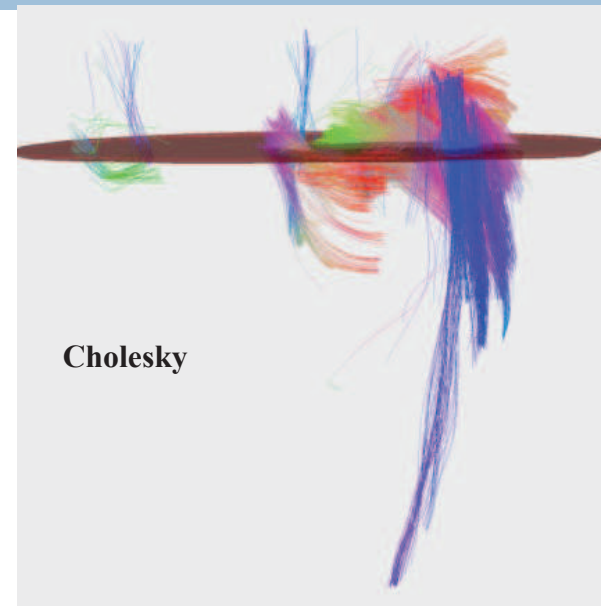
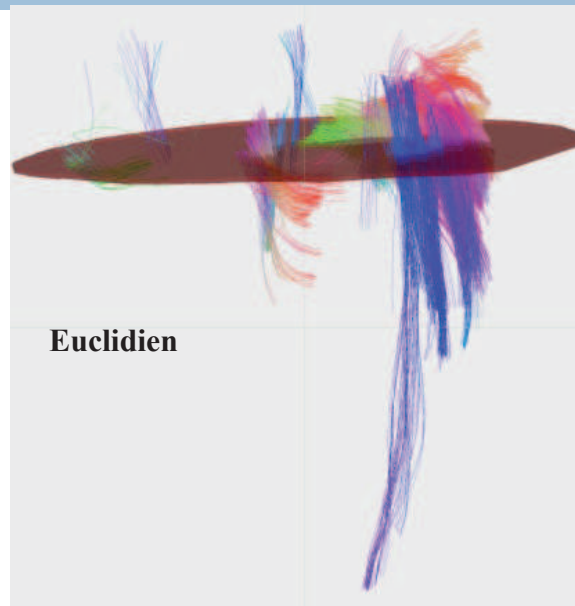
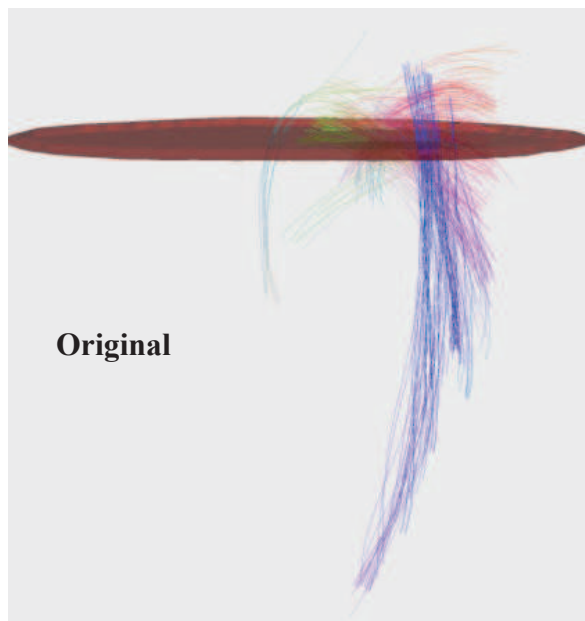
Vers une imagerie de l'architecture tissulaire

imagerie du tenseur de diffusion

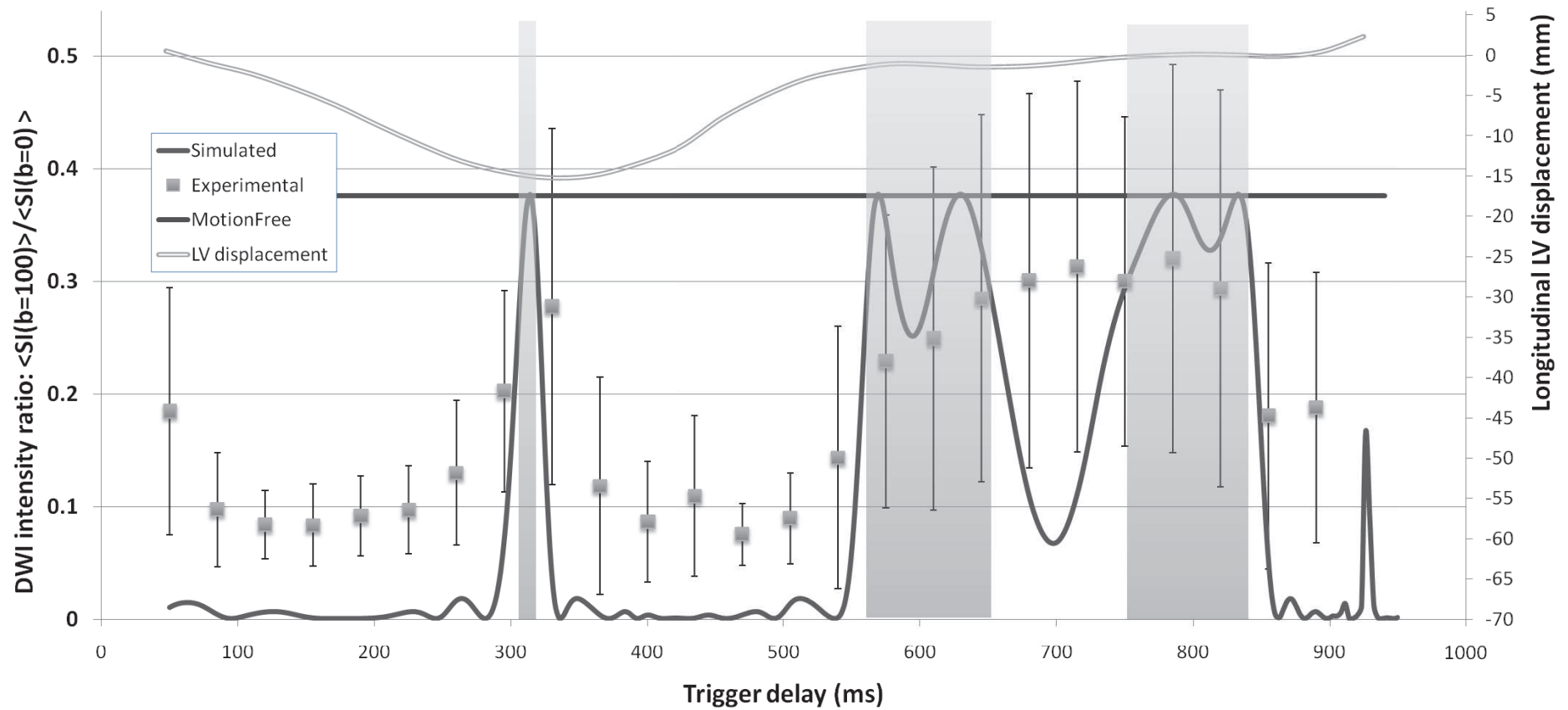




Résultats : interpolation avec le quaternion

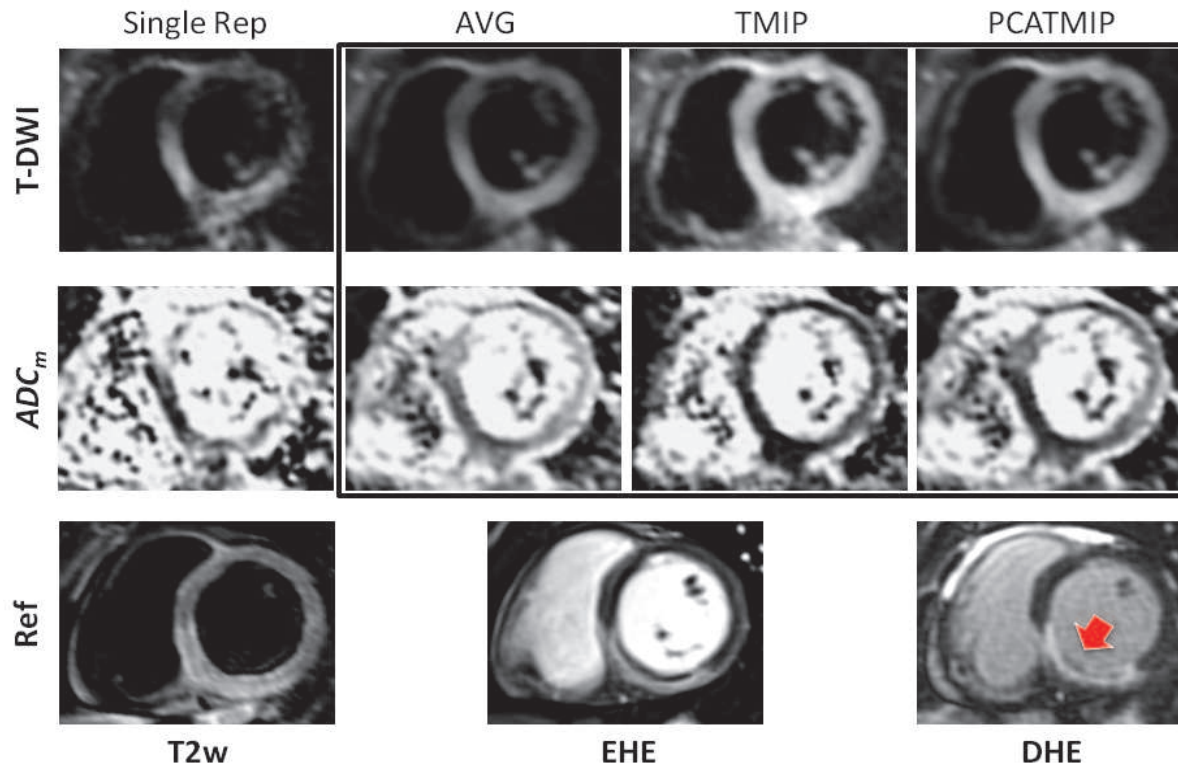


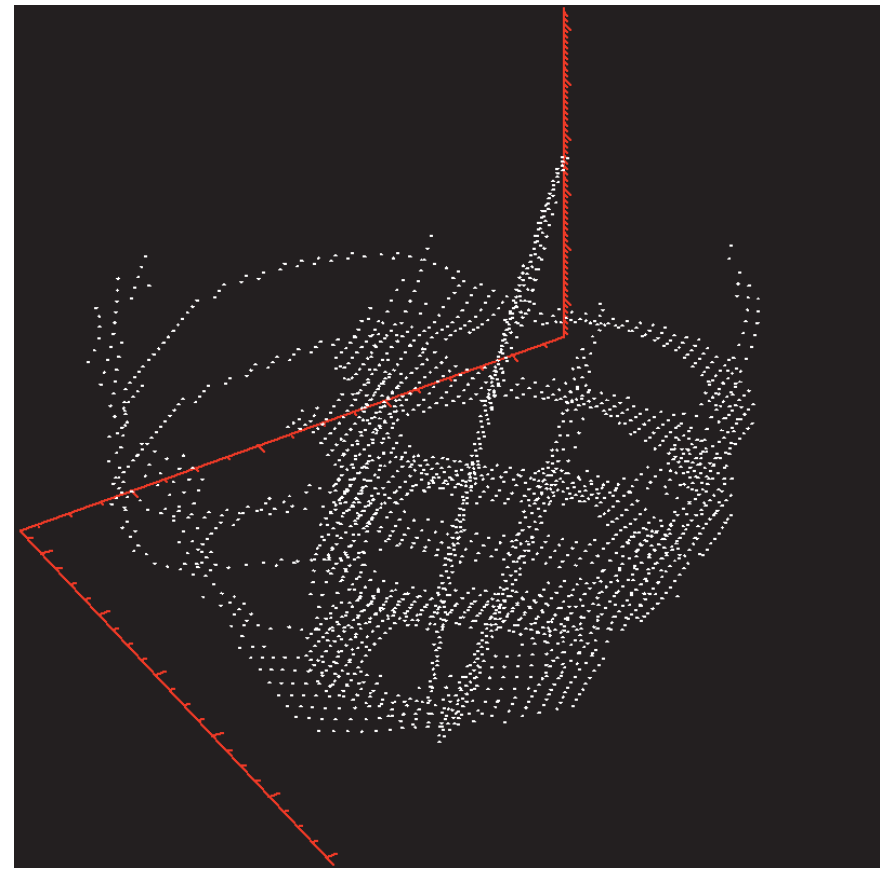
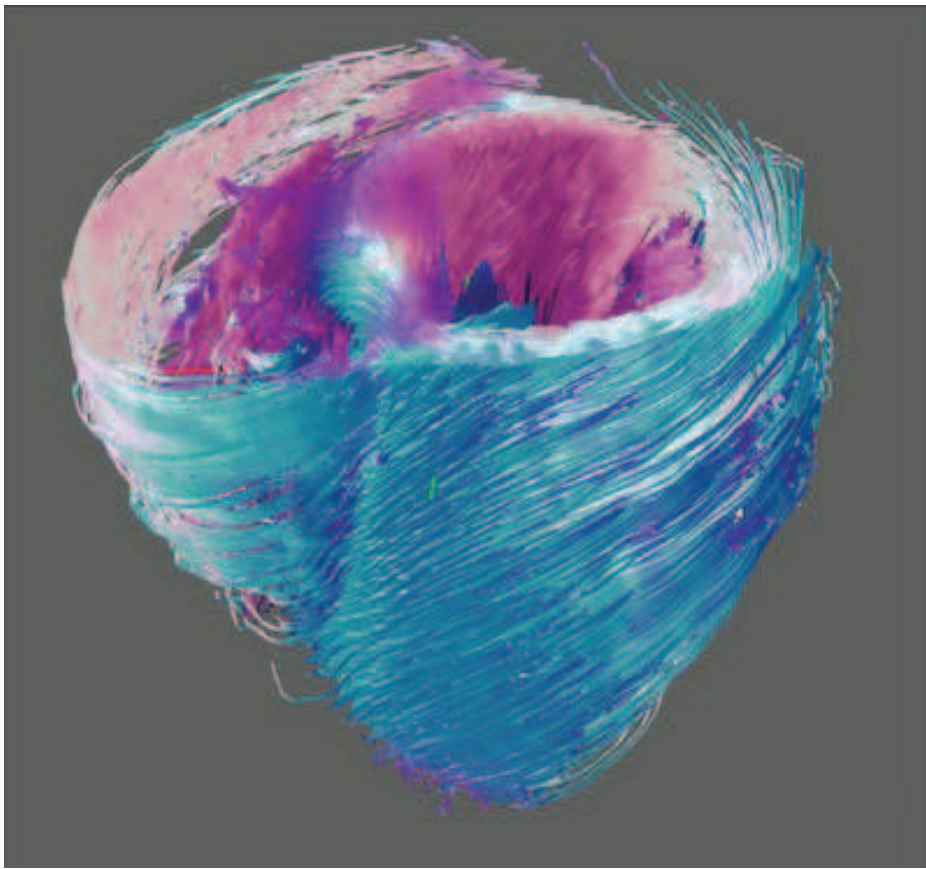
Modélisation de l'influence du mouvement



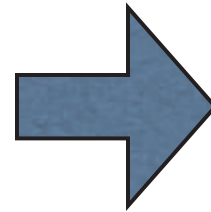
Imagerie de diffusion cardiaque : de l'ex-vivo à l'in-vivo

PCA-TMIP DWI: premiers résultats chez l'homme





Vers une intégration architecturale et fonctionnelle
et une modélisation patient-spécifique



?