

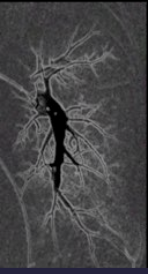


# Le WEB: une angioplastie non virtuelle

Dr Estelle VAUTRIN

Biarritz, 7 juin 2017

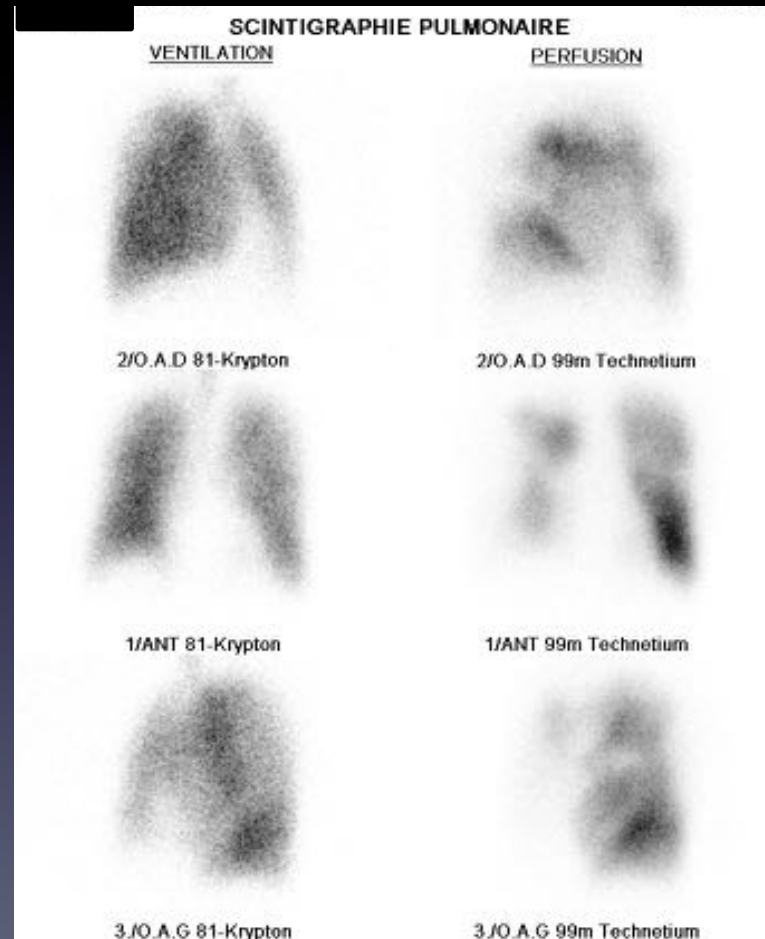
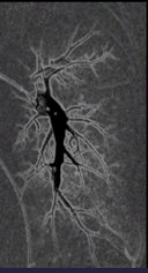


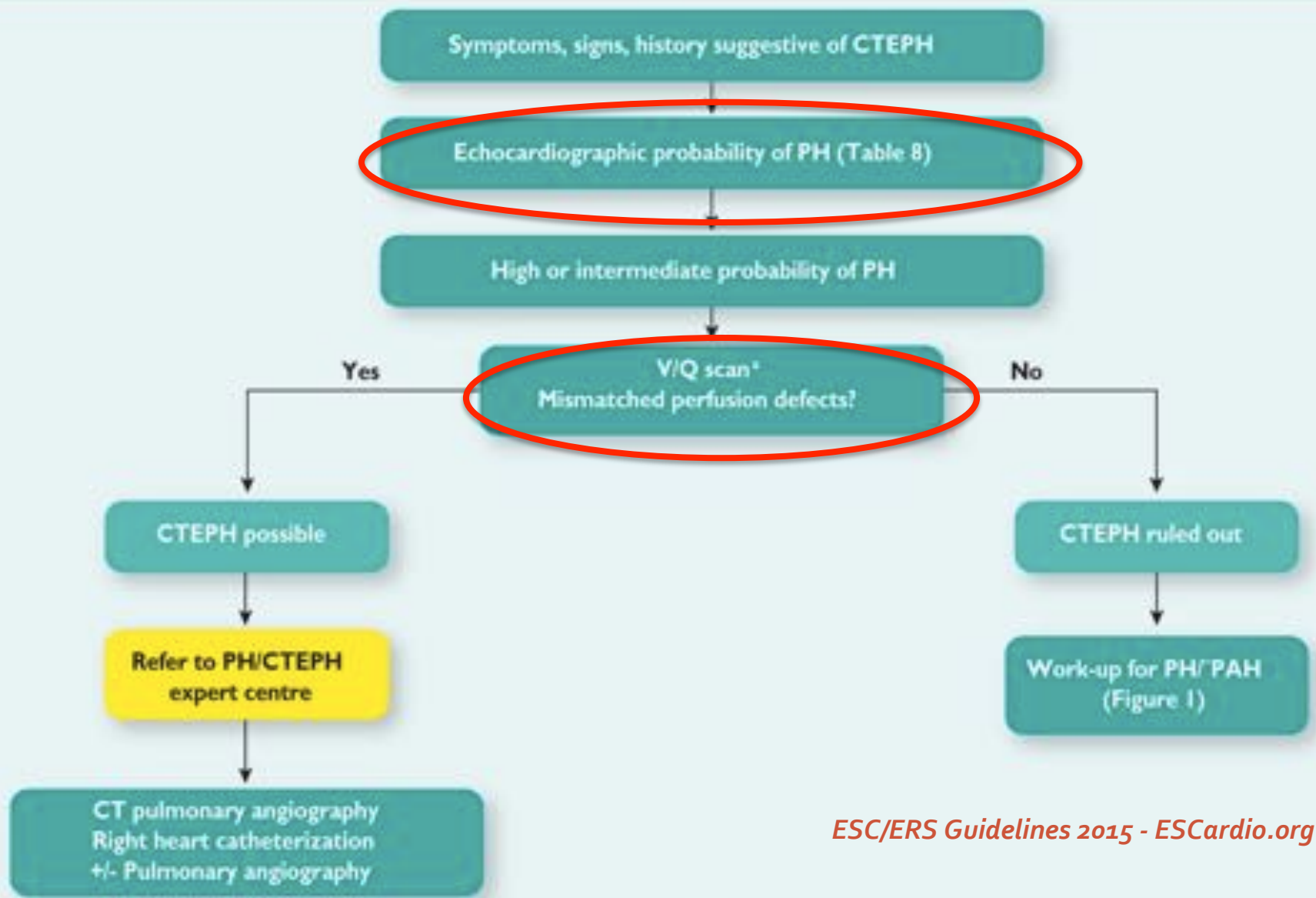


# Mr R, 75ans, bilan de dyspnée

- Dyspnée NYHA 4 évoluant depuis plusieurs semaines
- Signes d'insuffisance cardiaque droite
- Aspect de cœur pulmonaire chronique en échographie

# Bilan initial : Scintigraphie V-P

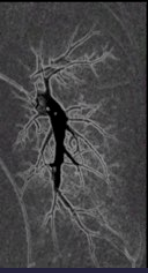




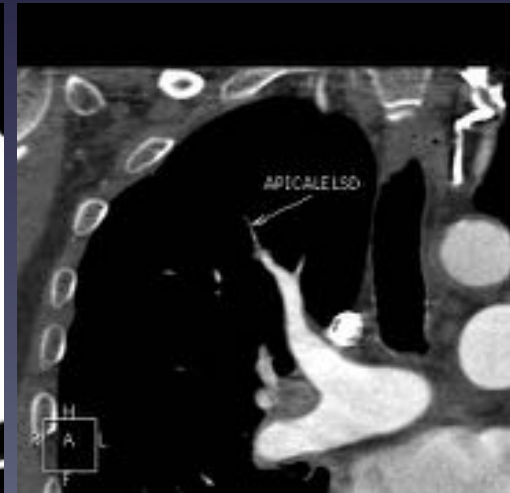
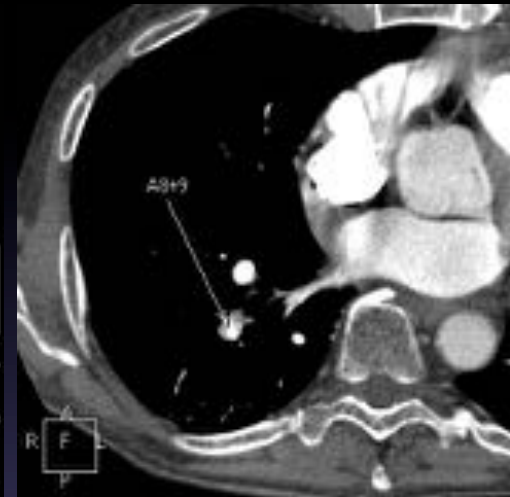
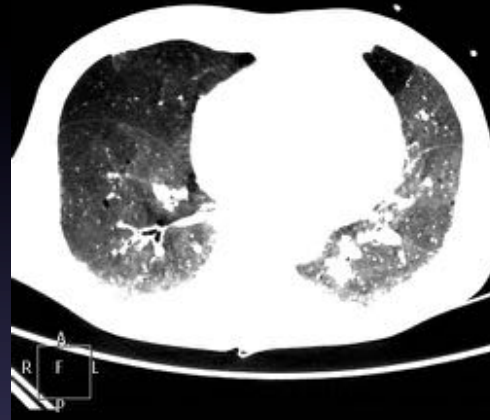
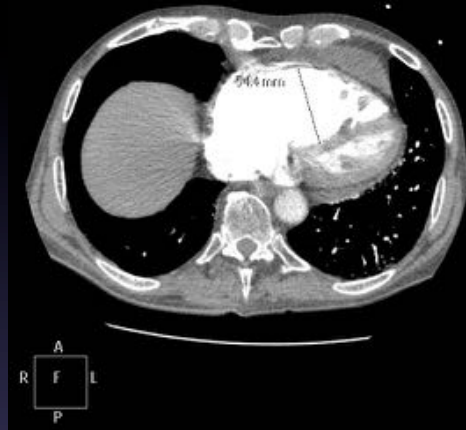
*ESC/ERS Guidelines 2015 - ESCardio.org*

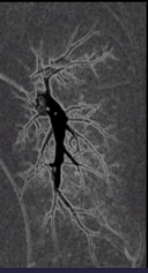
CT = computed tomography; CTEPH = chronic thromboembolic pulmonary hypertension; PAH = pulmonary arterial hypertension; PH = pulmonary hypertension; V/Q = ventilation/perfusion.

\*CT pulmonary angiography alone may miss diagnosis of chronic thromboembolic pulmonary hypertension.



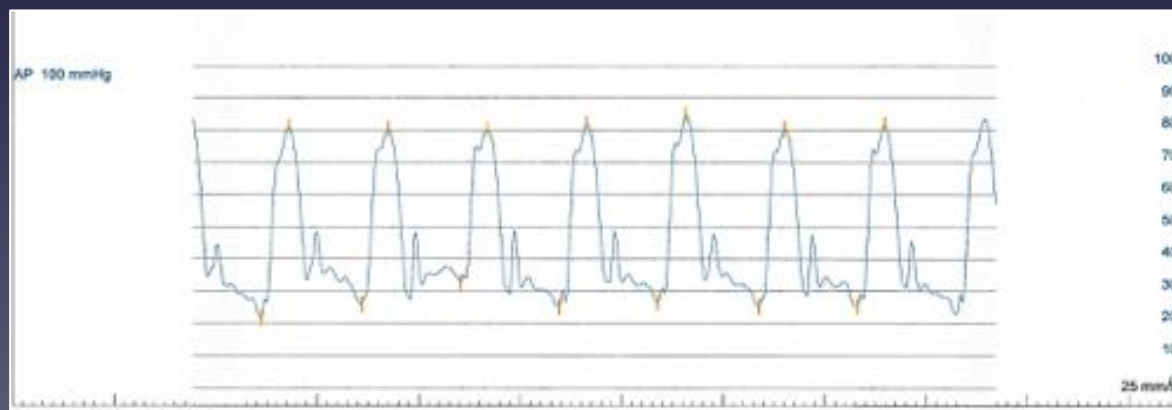
# Bilan initial : Angio-TDM Thoracique



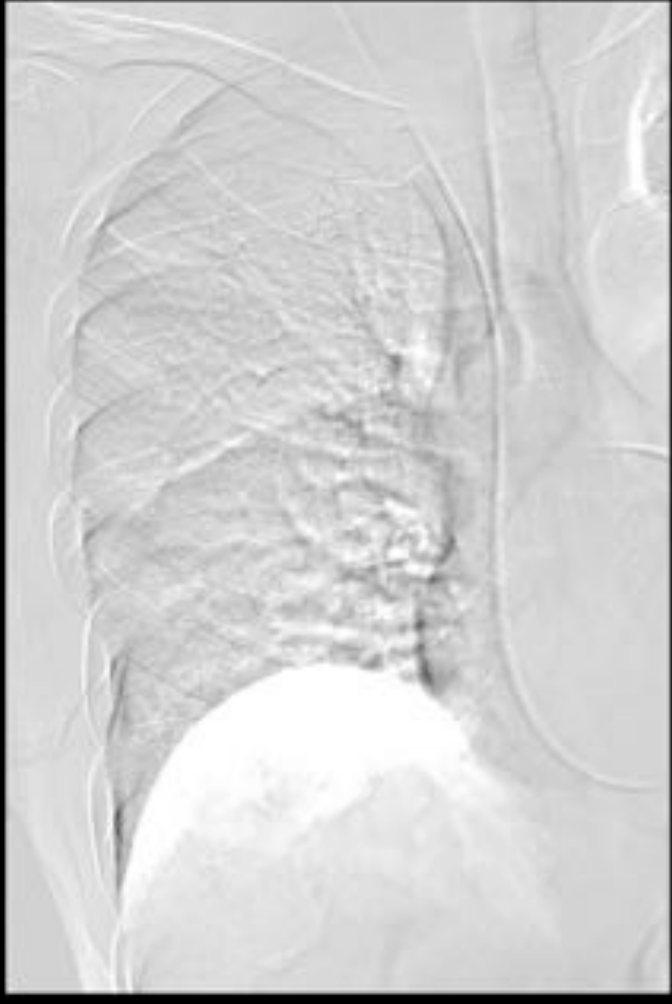
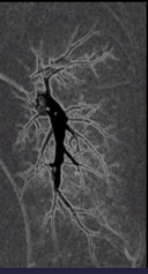


# Bilan initial : Cathétérisme Droit

	PAPs (mmHg)	PAPd (mmHg)	PAPm (mmHg)	Pcap (mmHg)	IC (L/min/m <sup>2</sup> )	RAP (UW)	SVo <sub>2</sub> (%)
<b>Bilan initial</b>	85	30	52	8	1.88	13	67



# Bilan initial : Angiographie Pulmonaire



# L' hypertension pulmonaire post embolique

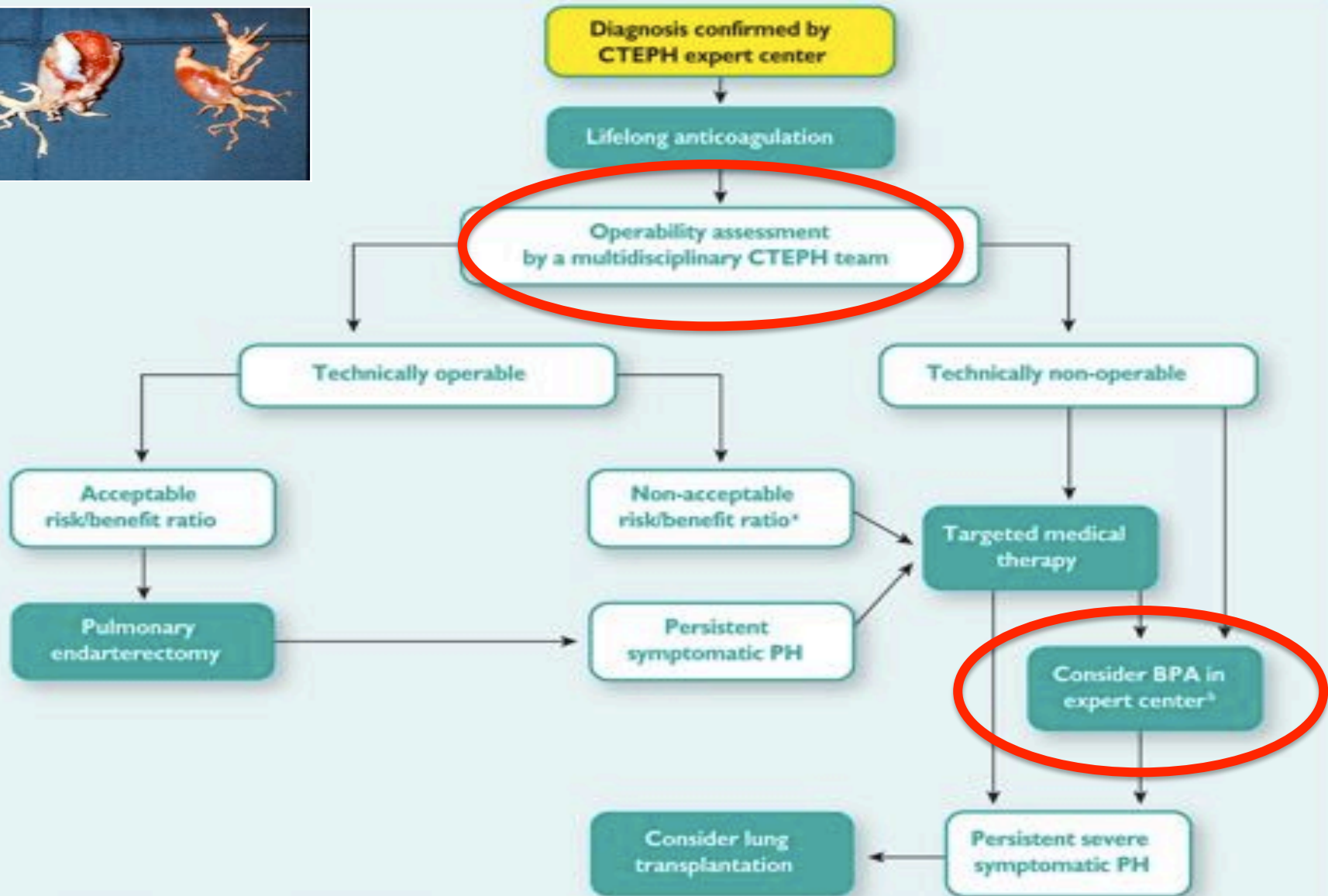
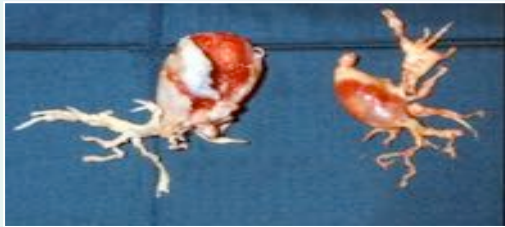
## Une maladie rare

0,1 à 9% des patients 2 ans après une EP  
5 nouveaux cas/ an/ million d'habitants  
maladie sous diagnostiquée?

## Une maladie sévère

Mortalité proche de l'HTAP, 50% à 5 ans  
Qualité de vie médiocre en rapport avec l'hypoxie et  
la dysfonction VD





BPA = balloon pulmonary angioplasty; CTEPH = chronic thromboembolic pulmonary hypertension; PH = pulmonary hypertension.

\*Technically operable patients with non-acceptable risk/benefit ratio can be considered also for BPA.

†In some centers medical therapy and BPA are initiated concurrently.

# Refined Balloon Pulmonary Angioplasty for Inoperable Patients with Chronic Thromboembolic Pulmonary Hypertension

Hiroki Mizoguchi, MD; Aiko Ogawa, MD, PhD; Mitsuru Munemasa, MD, PhD;  
Hiroshi Mikouchi, MD, PhD; Hiroshi Ito, MD, PhD; Hiromi Matsubara, MD, PhD

2012

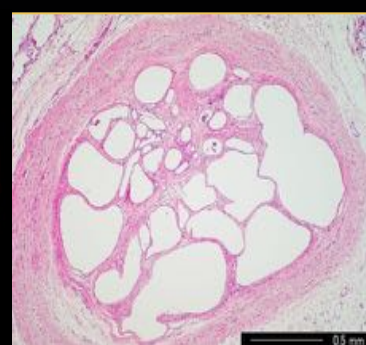
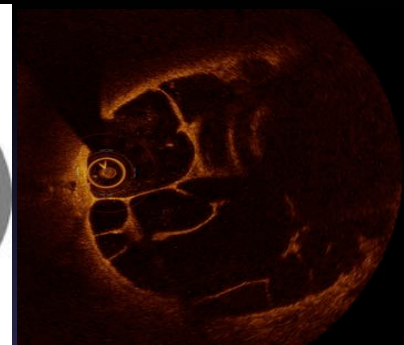
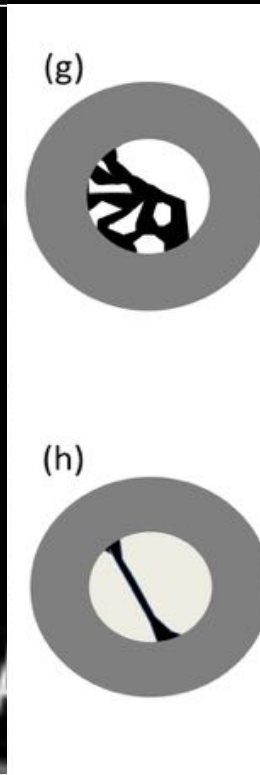
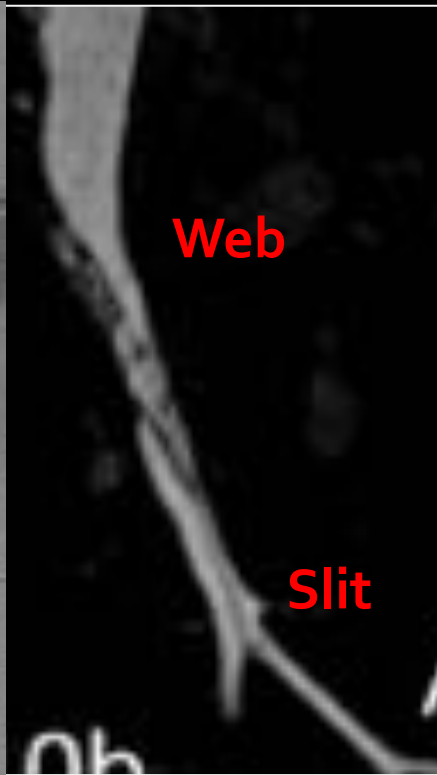
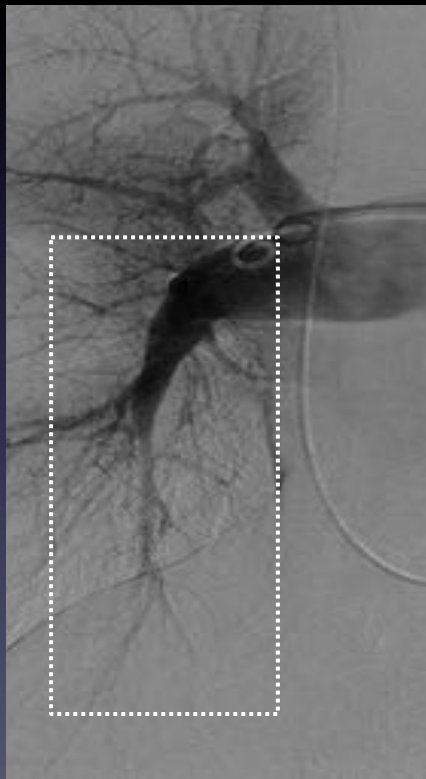
**Table 1. Clinical and Hemodynamic Data Before and After BPA**

	Before BPA (n=68)	After BPA (n=67)	P Value
WHO functional class (I/II/III/IV)	3 (0/0/49/19)	2 (11/53/3/0)	<0.01
Oxygen Inhalation (L/min)	3.0±1.4	1.3±1.0	<0.01
6MWD, m	296±108	368±83	<0.01
BNP, pg/mL	330±444	35±55	<0.01
sPAP, mmHg	81.3±16.9	42.3±11.9	<0.01
dPAP, mmHg	24.3±7.1	13.4±4.8	<0.01
mPAP, mmHg	45.4±9.6	24.0±6.4	<0.01
RAP, mmHg	8.1±4.4	1.9±1.5	<0.01
CI, L/min/m <sup>2</sup>	2.2±0.7	3.2±0.6	<0.01
PVR, dyne sec/cm <sup>5</sup>	942±367	327±151	<0.01



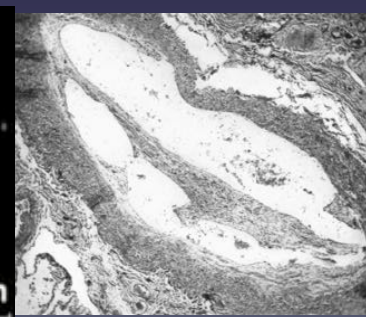
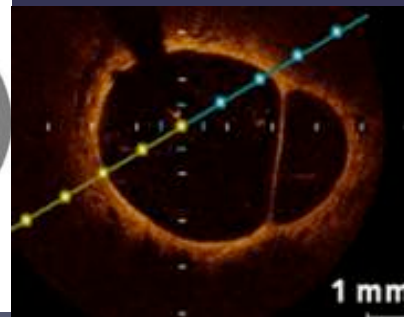
RAP -65%

# Quelles lésions sont dilatées ?



OCT

Anapath



Sugiyama M, Fukuda T, Ogo T et al. 2014 Jul;32(7):375-82 Jpn J Radiol

Images Dr. Ueda, Dr. Ogo-Ohta, Department of Pathology,NCVC

# Comment ?

## Procédure au Cath Lab

2 opérateurs: 1 cardiologue + 1 radiologue

sous AL, veine fémorale 6F

sous AVK : INR entre 2 et 3, bolus HNF 1000 UI

Gaine Flexor 70cm, 6F, JR4

Guide 0,014

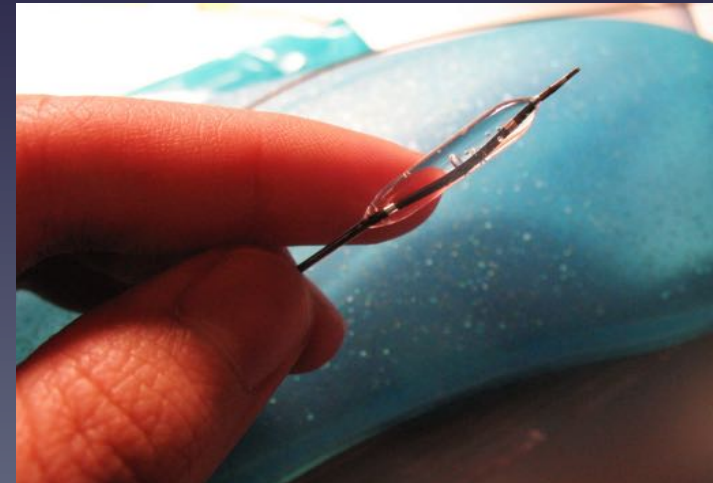
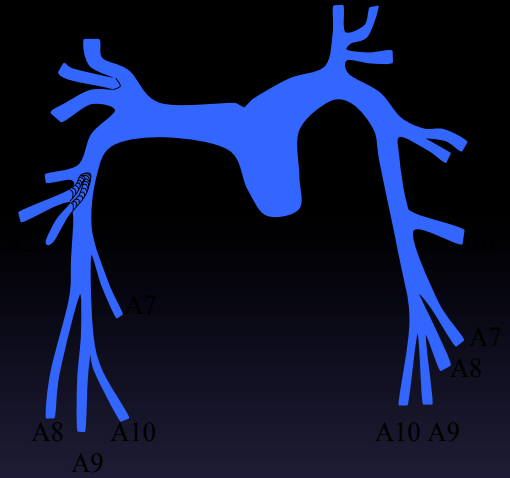
Ballons monorail de Ø 1,5 à 8 mm

Durée 1h30 à 2 heures/ séances

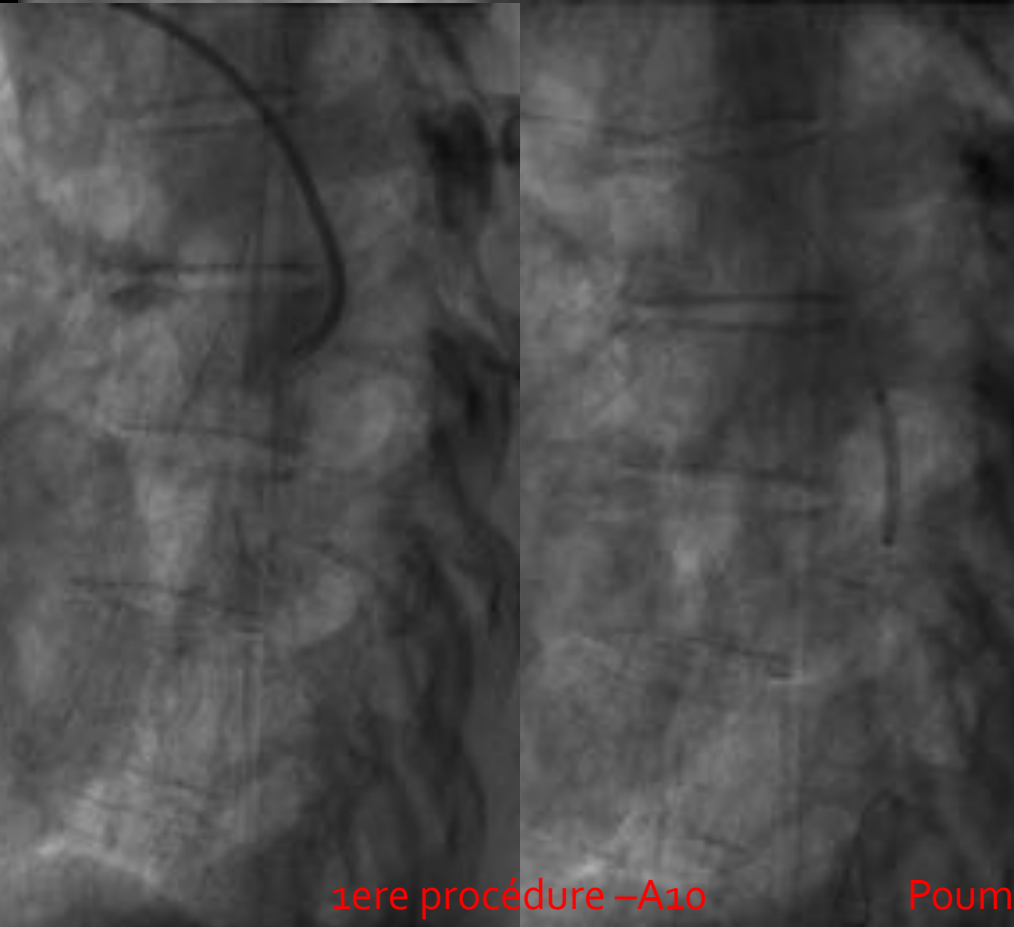
Irradiation PDS  $126 \pm 73$  Gy.cm<sup>2</sup>

## Sortie J2 post procédure

2 à 6 procédures /patient



# Procédures itératives (2-6) d'angioplastie pulmonaire au ballon sur les sténoses et les obstructions segmentaires et sous segmentaires



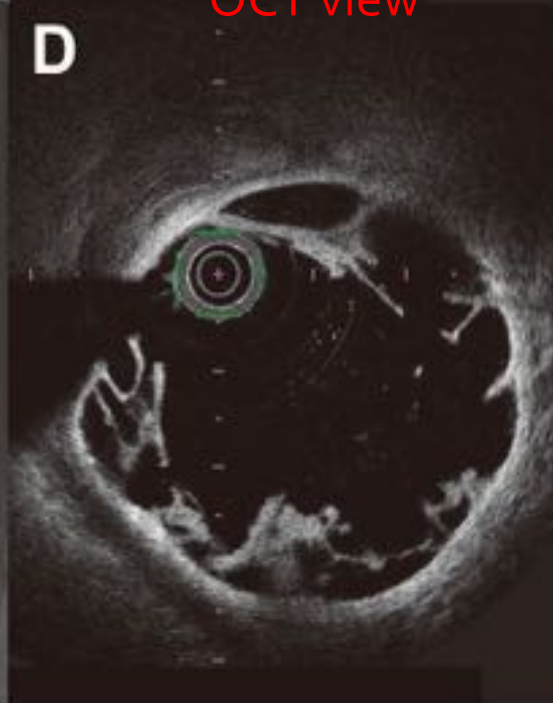
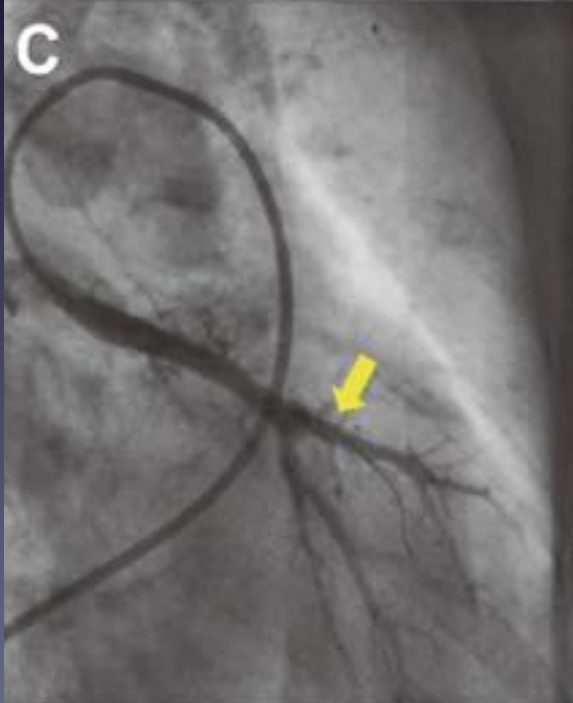
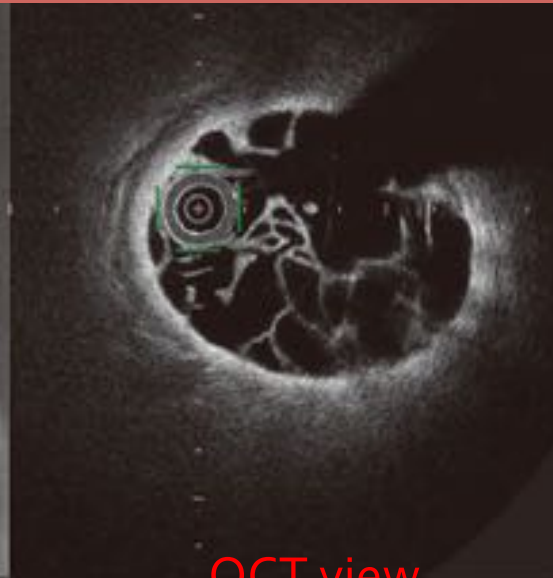
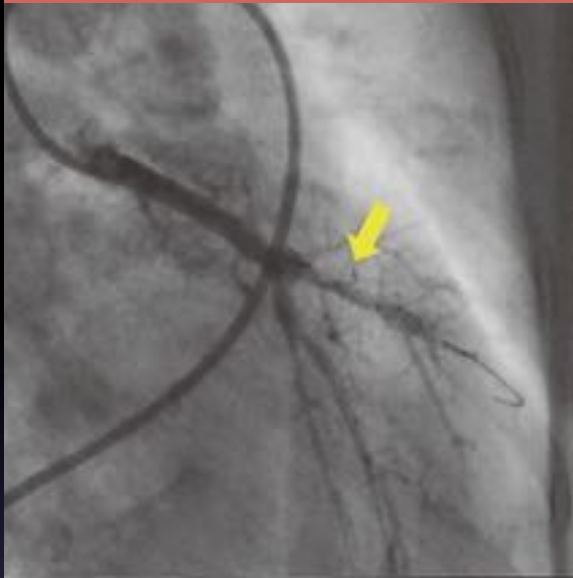
1ere procédure –A10

Poumon gauche A10 – contrôle J8





# Que faisons nous vraiment ?

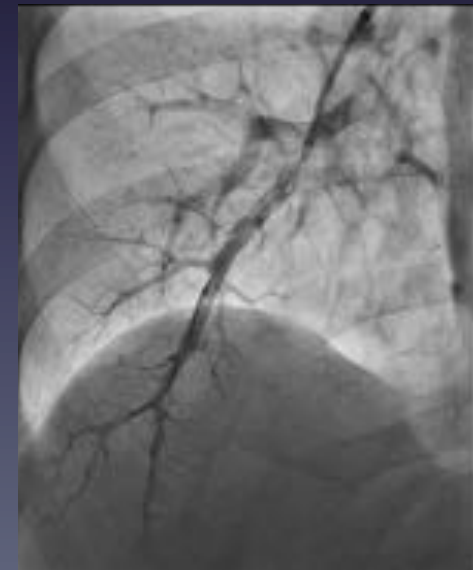
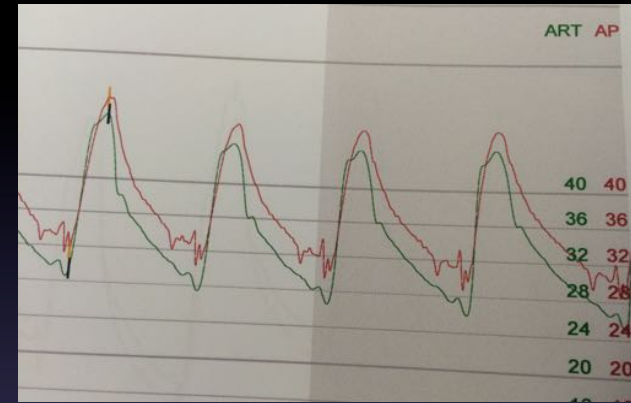


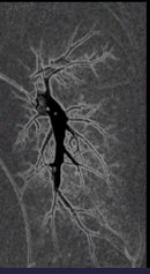
OCT view



# Un outil pour quantifier l'obstruction ?

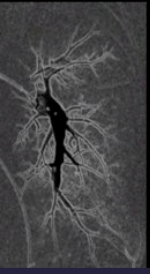
Microcatheter  
de pression



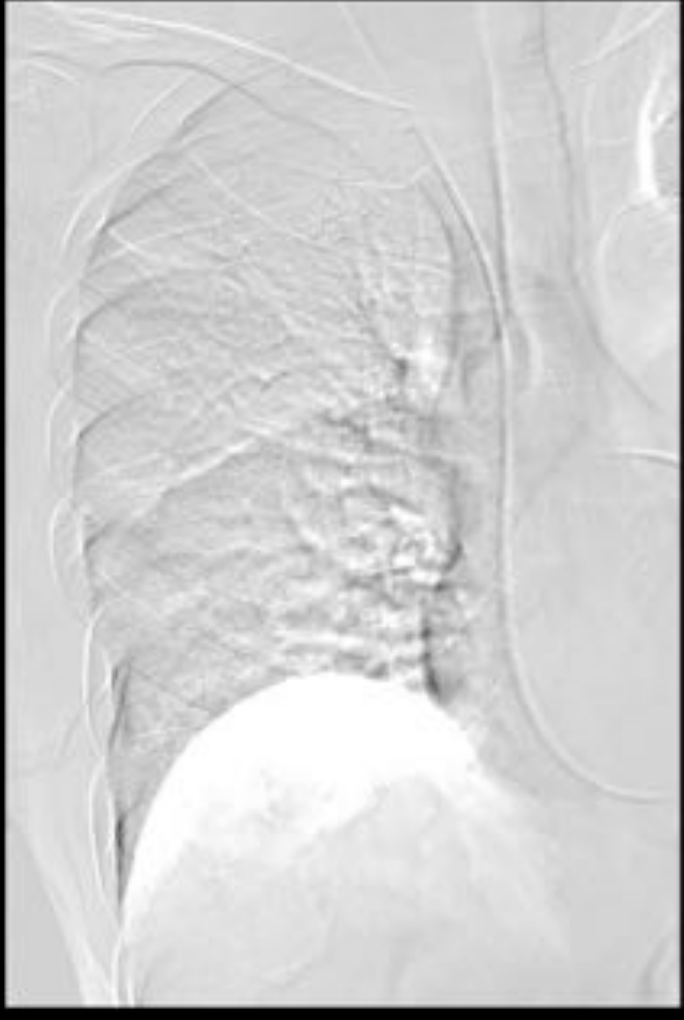


# Et pour Mr R, 75ans?

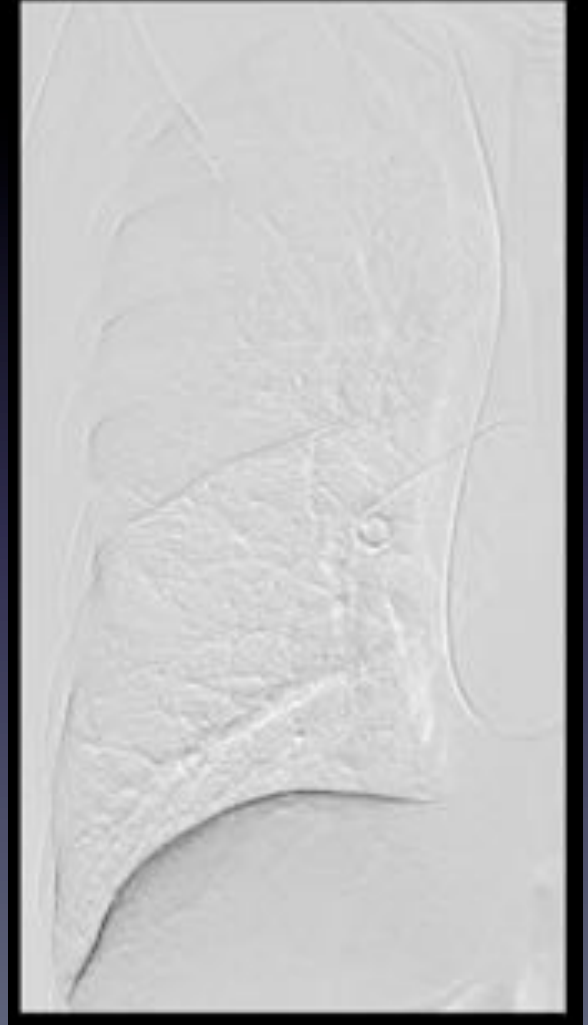
	<b>Initiale</b>	<b>Fin de traitement 18 MOIS</b>
<b>Stade NYHA</b>	IV	II
<b>Test de Marche 6min (m)</b>	225	355
<b>NTproBNP (ng/L)</b>	13 393	239



# Et pour Mr R, 75ans?



M12



# RACE – PHRC national 2014

22 centres de compétence - Réseau HTAP France

Staff médico-chirurgical du centre national de référence pour la Thrombose Chronique

Bras contrôle – Chirurgie  
160 patients



End Point: PVR - M6

Patients inopérables  
124 patients

randomisation

Riociguat  
62 pts

Angioplastie  
CCML/Grenoble -62pts



End Point: PVR - M6

Cross over

Angioplastie

Riociguat

## « Take Home Message »

- Ne pas faire perdre la chance de la chirurgie, seul traitement curatif !

- Pour l'angioplastie

Amélioration significative de l'état fonctionnel et de l'hémodynamique – Objectif personnalisé +++

Anticiper les complications – imagerie++, opérateurs, stand by

- Référer au centre de compétence HTP pour bénéficier des traitements et d'une prise en charge holistique adaptée.



メルシー

