



# Pitfalls with Pressure Measurements

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**Equipment in general**

**Height of the fluid-filled transducer**

**Equalization**

**Hyperemia**

**Drift**

**Guiding catheter**

**Side Holes**

**Whipping**

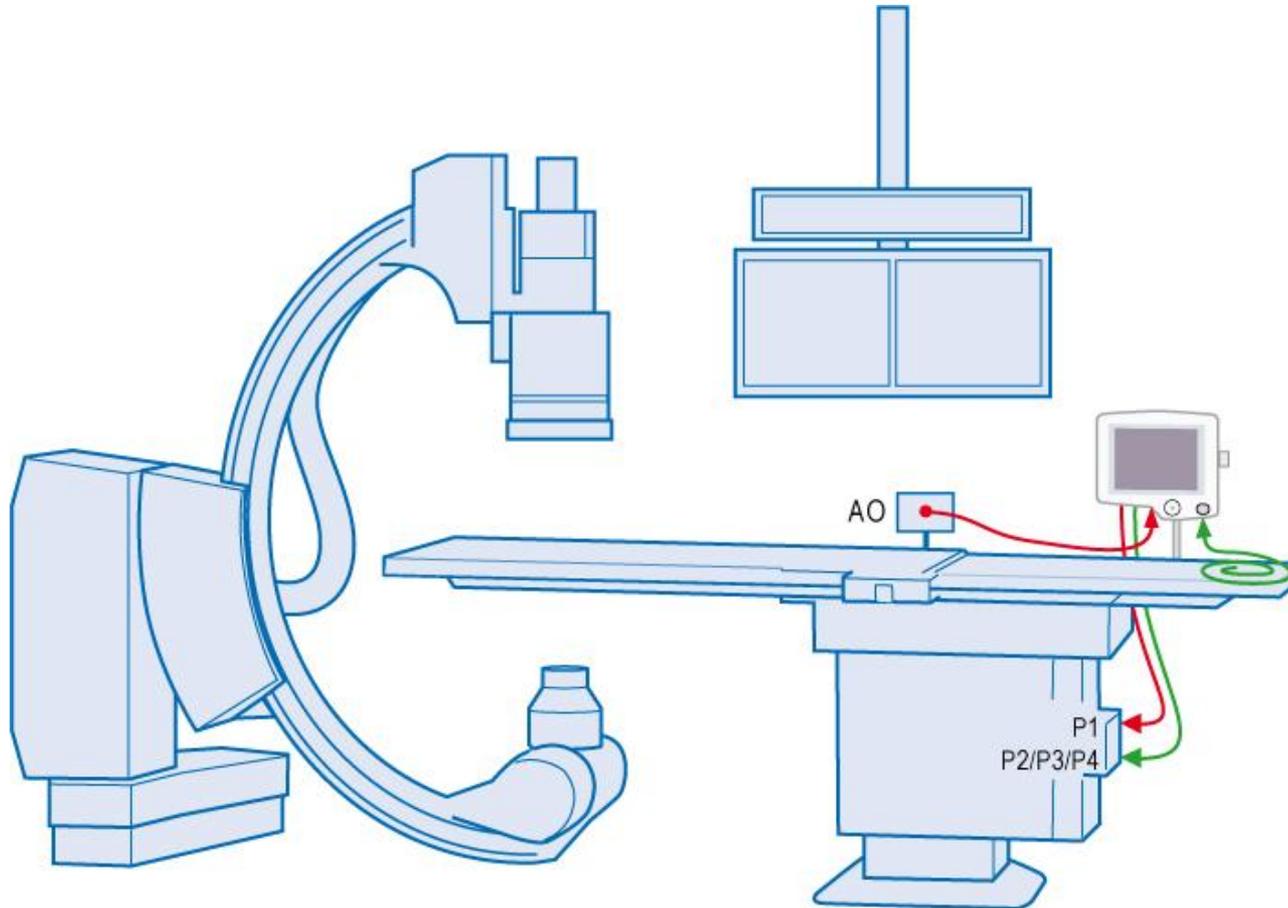
**Position of the cursor**

**Accordion effect**

**Specific features of the LM**

**... if you start an FFR programme...**

# Ideal Setting = Fix setting



## To get started swiftly...

### 1. The interface: Localisation & connexion





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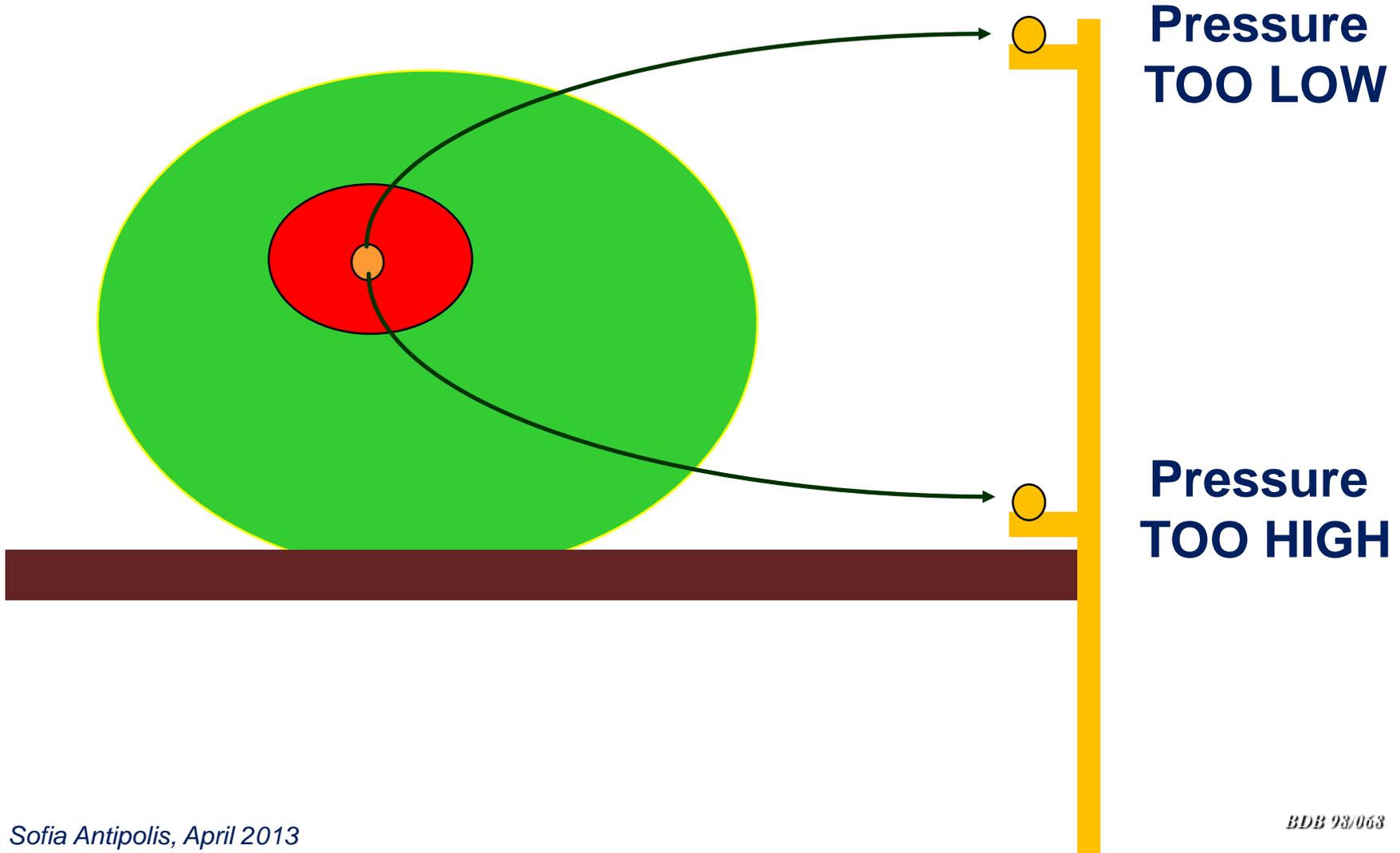
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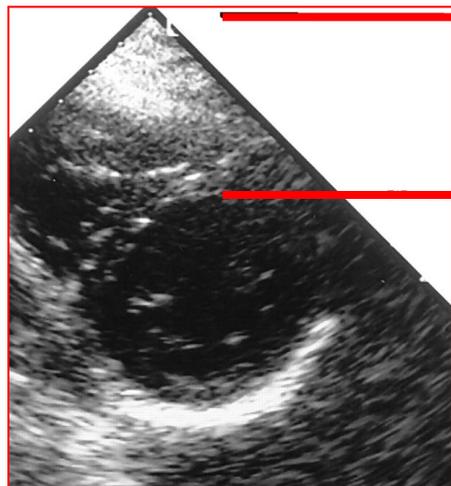
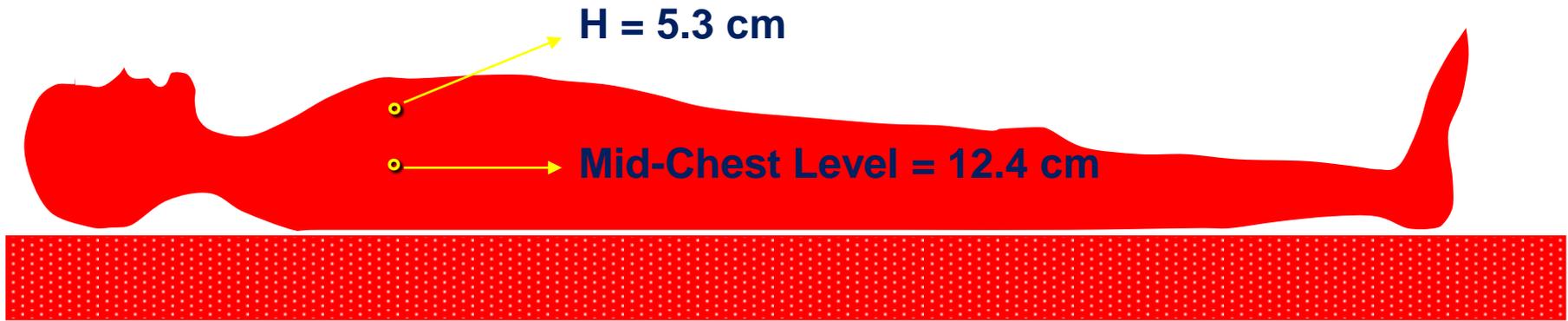
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## Importance of the Height of the Transducer



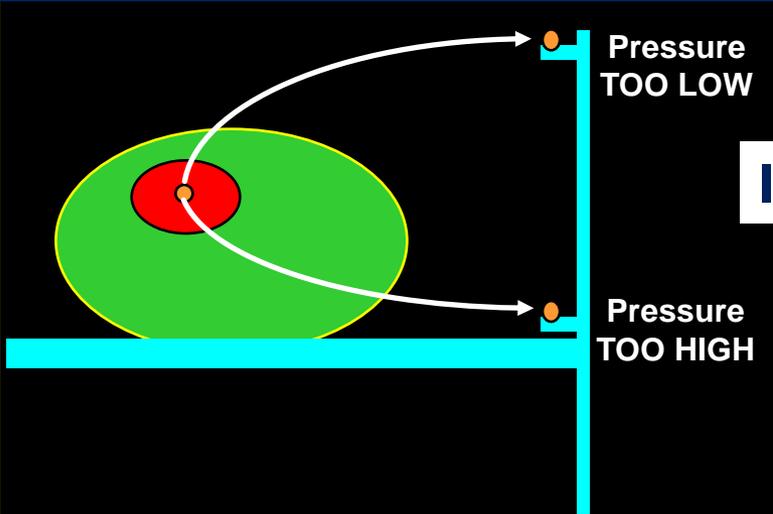
## Importance of the Height of the Transducer



**Anterior surface of the chest wall**

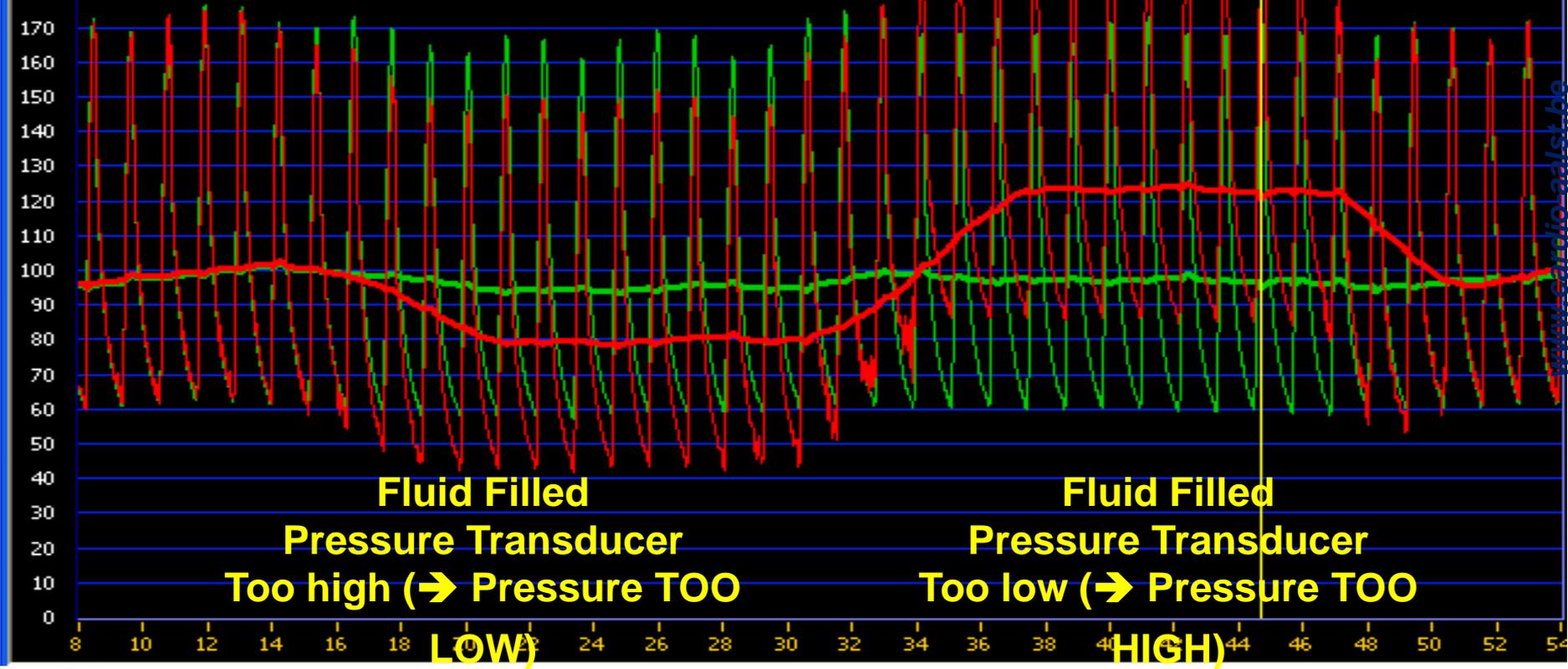
**Uppermost blood level in the chamber in which pressure is to be measured**

# Pitfalls with Pressure Measurements



## Importance of the Height of the Transducer

DATE	TIME	VESSEL	PROCEDURE	ACTION	TYPE	SIZE
05-03-22	15:42:50				FFR	24Kb
05-03-22	15:34:16				FFR	28Kb
05-03-22	15:33:29				FFR	28Kb
05-03-22	15:30:23				FFR	59Kb





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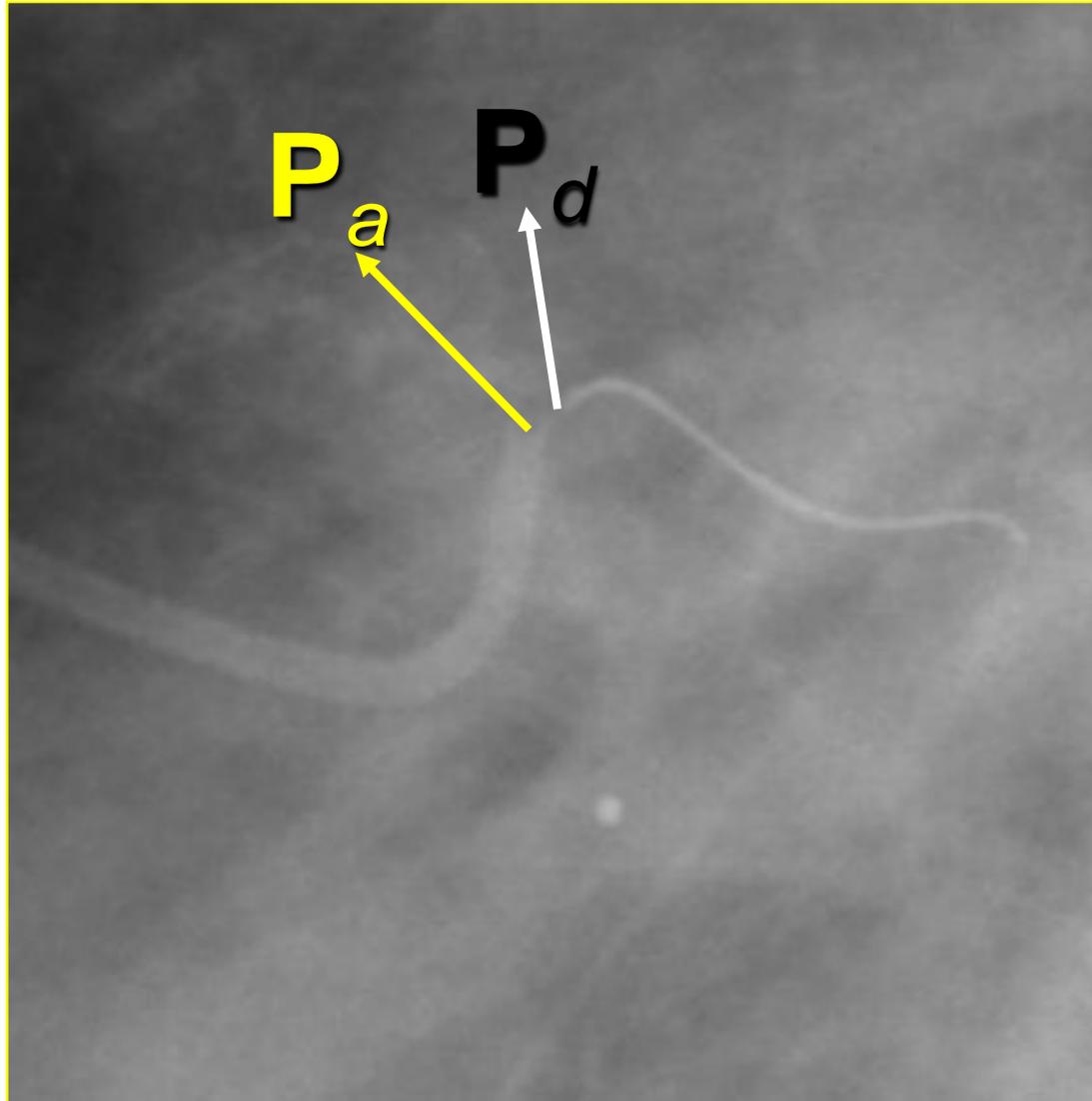
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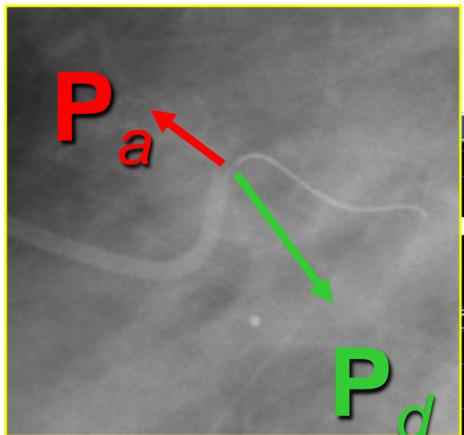
**... if you start an FFR programme...**

# Equalization of the Pressure Wire and the Guide Catheter

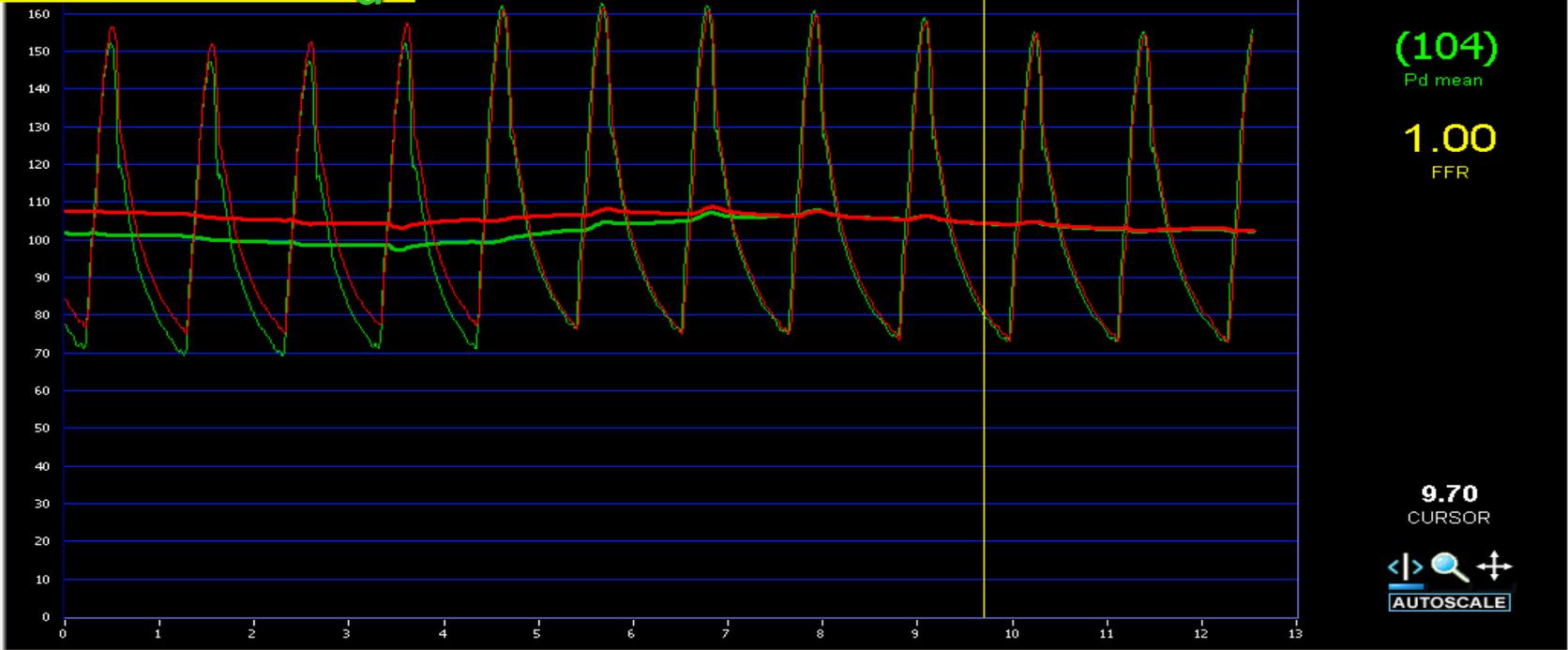
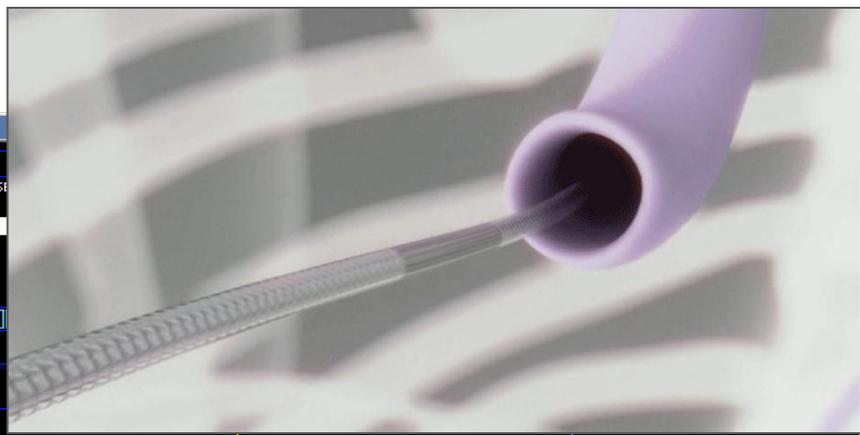




# Equalization of the Pressure Wire and the Guide Catheter

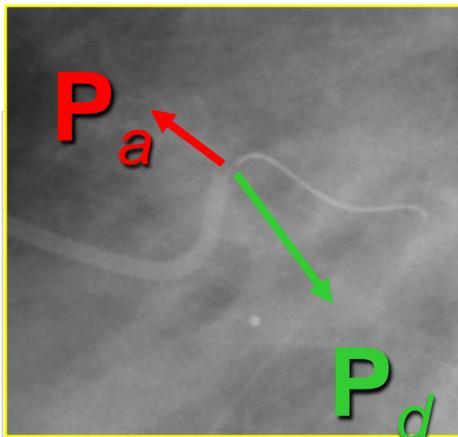


DATE	TIME	VESS
2011-01-14	15:54:35	
2011-01-14	15:50:39	
2011-01-14	15:32:50	
2011-01-14	15:27:52	
2011-01-14	15:25:58	
2011-01-14	15:22:03	



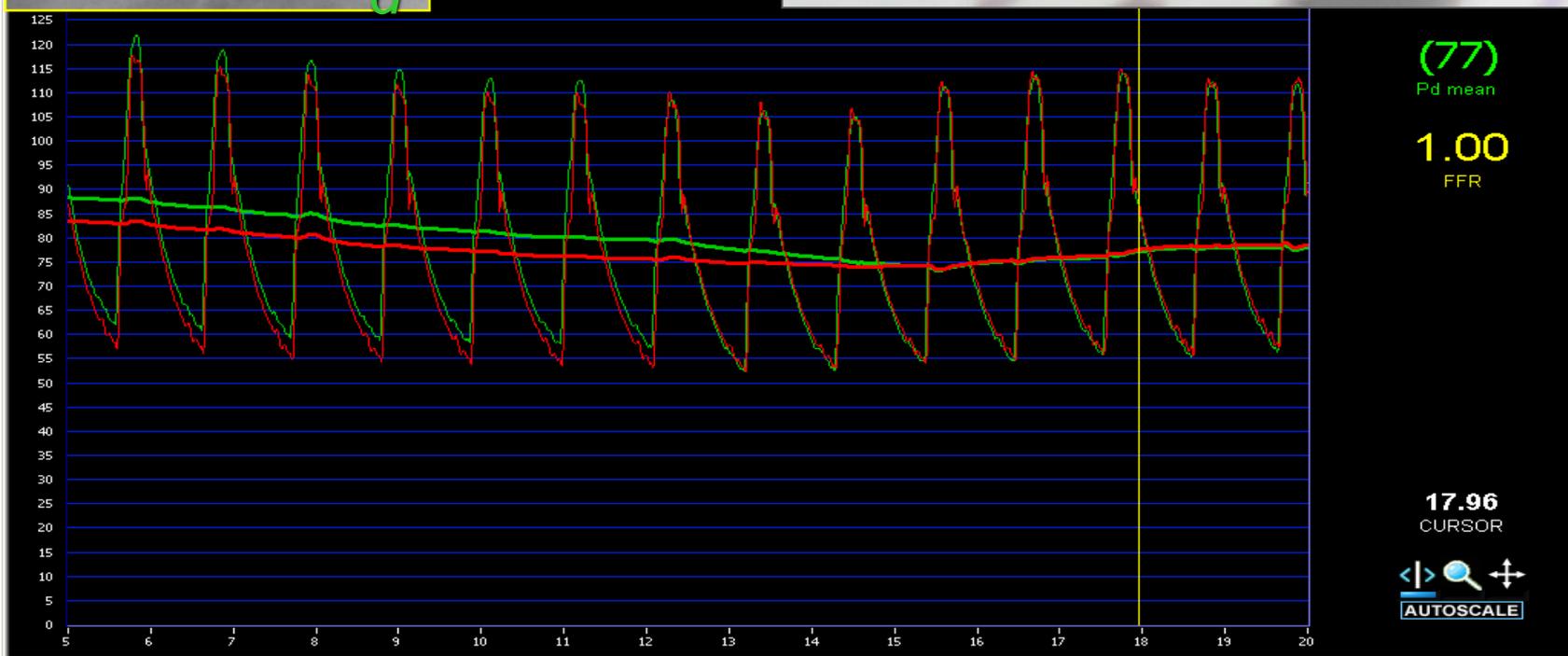
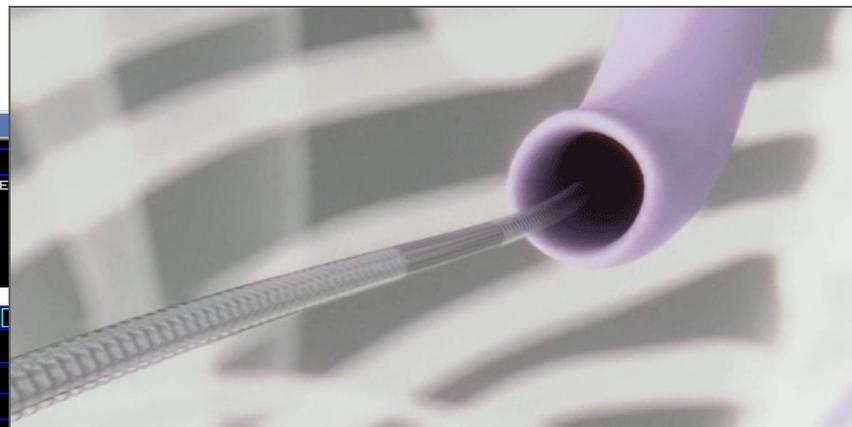
www.cardioanalyst.be

## Equalization of the Pressure Wire and the Guide Catheter

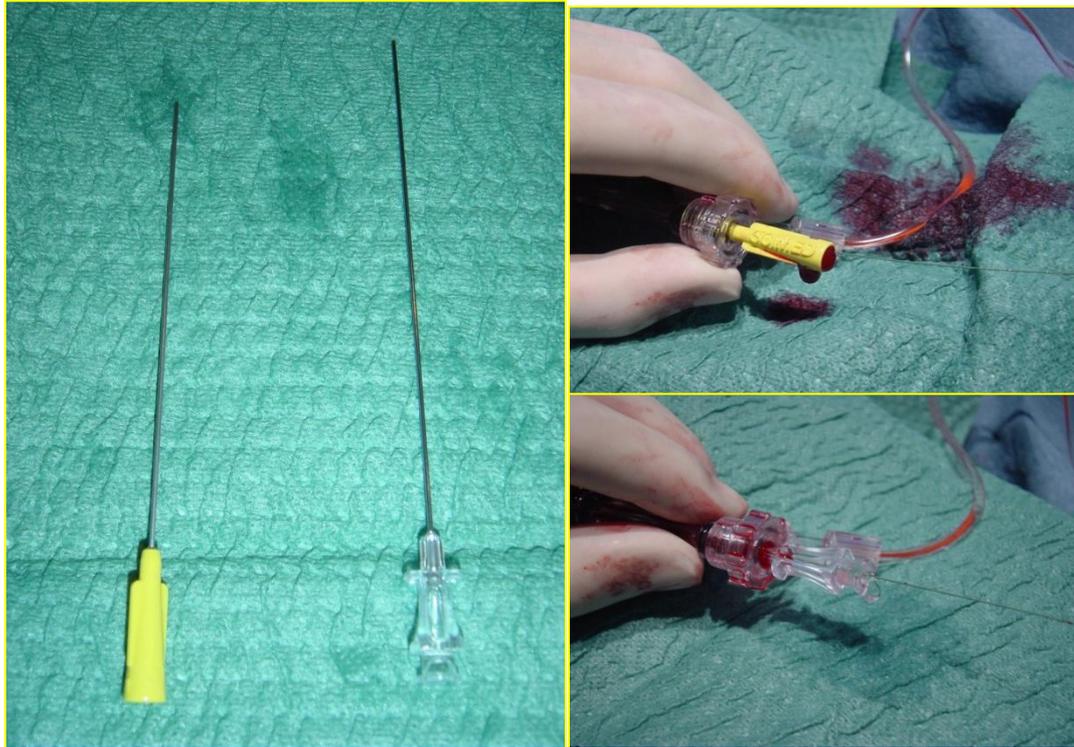


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2011-01-14	15:32:50	
2011-01-14	15:27:52	
2011-01-14	15:25:58	
2011-01-14	15:22:03	
2011-01-14	15:17:37	

PLAY EXPORT RENAME



# Equalization of the Pressure Wire and the Guide Catheter



Advantages:

1. Manipulation (pull back)
2. Y connector closed



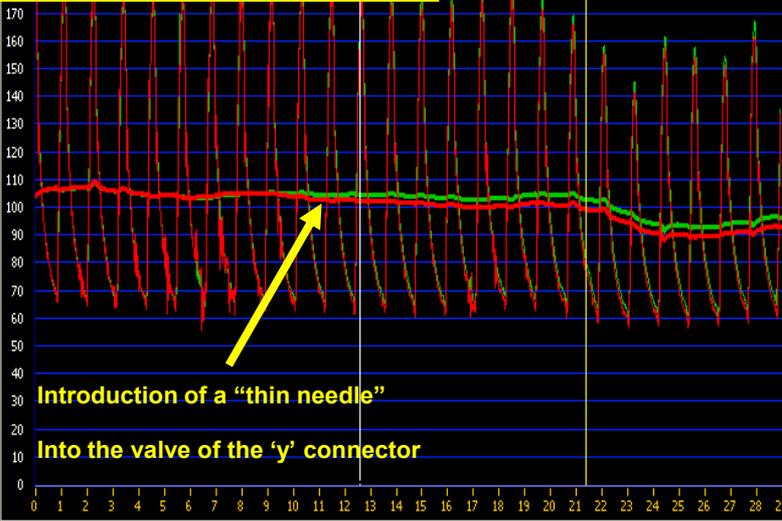
# Pressure wire: Introducer needles



VIEW\DHOND		COM 1		
VESSEL	PROCEDURE	ACTION	TYPE	SIZE
FFR			24kb	
FFR			173kb	
FFR			55kb	
FFR			28kb	
FFR			28kb	
FFR			59kb	

EXPORT ERASE SETUP

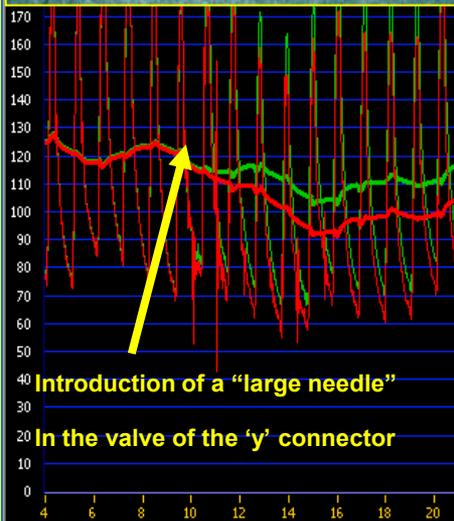
2005-03-22 15:34:16



RADIVIEW\DHOND		COM 1			
TIME	VESSEL	PROCEDURE	ACTION	TYPE	SIZE
15:42:59			surement	FFR	24kb
15:36:18				FFR	173kb
15:34:16				FFR	55kb
15:33:29				FFR	28kb
15:30:23				FFR	28kb
				FFR	59kb

ME EXPORT ERASE SETUP

2005-03-22 15:36:18



**RADI VIEW**

(109) Pa mean  
(121) Pd mean  
1.11 FFR

22.57 CURSOR

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RESET



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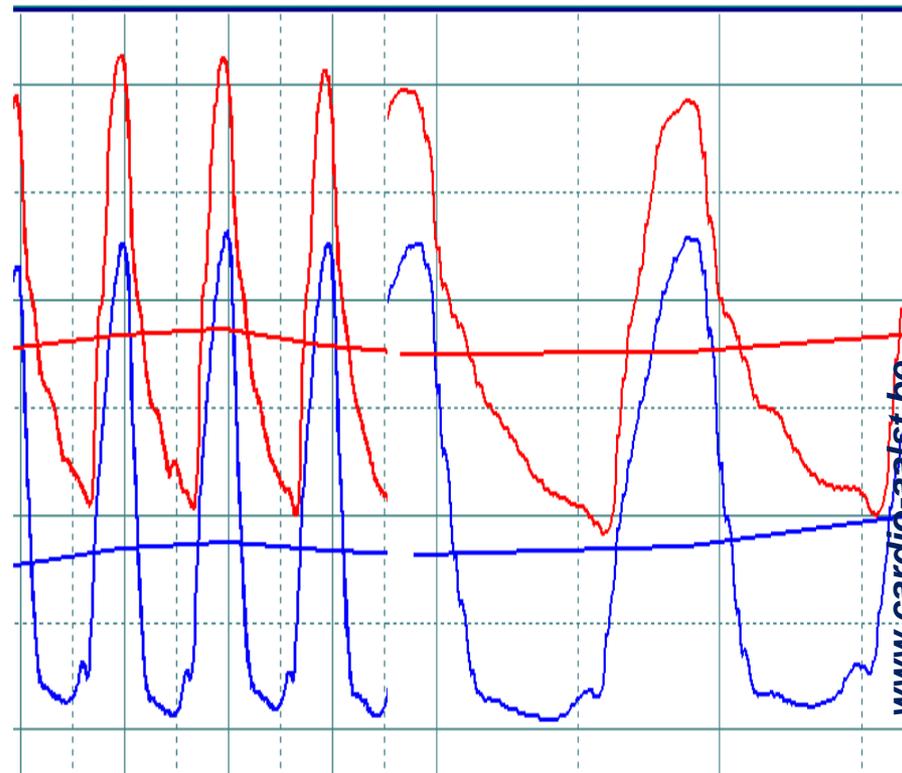
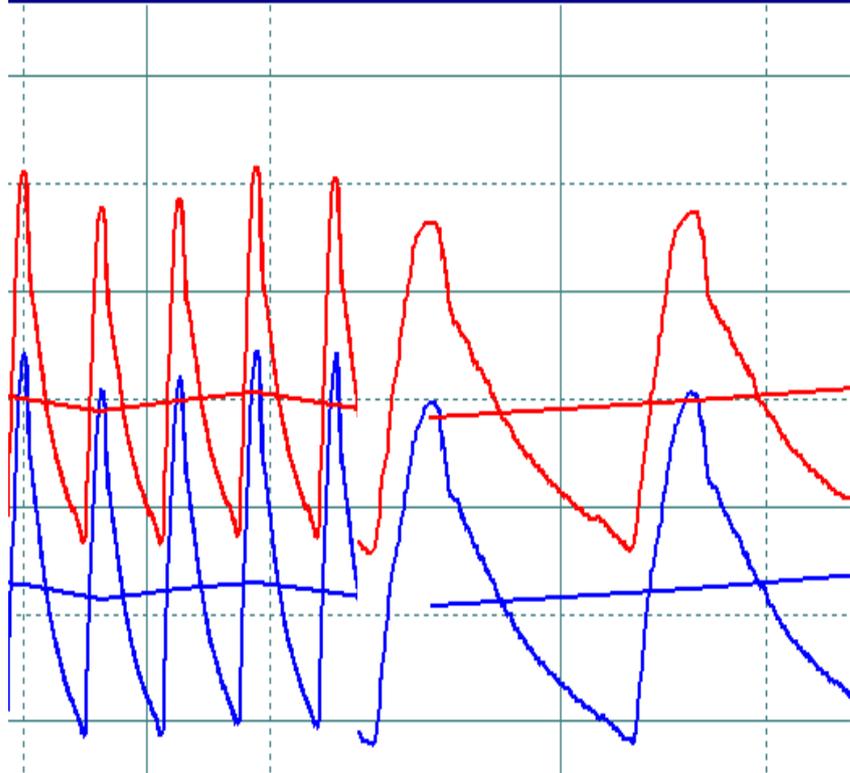
**Position of the cursor**

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**Specific features of the LM**

**... if you start an FFR programme...**

# Drift



**Drift:**  
**identical morphology**

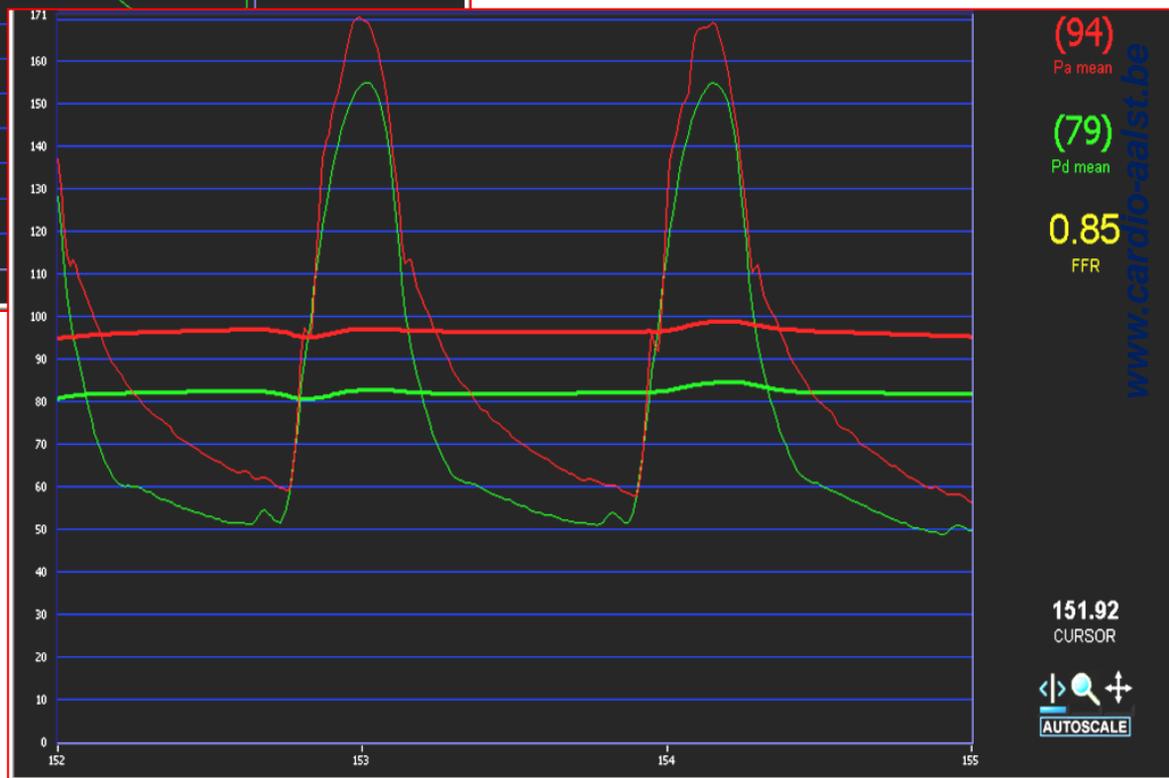
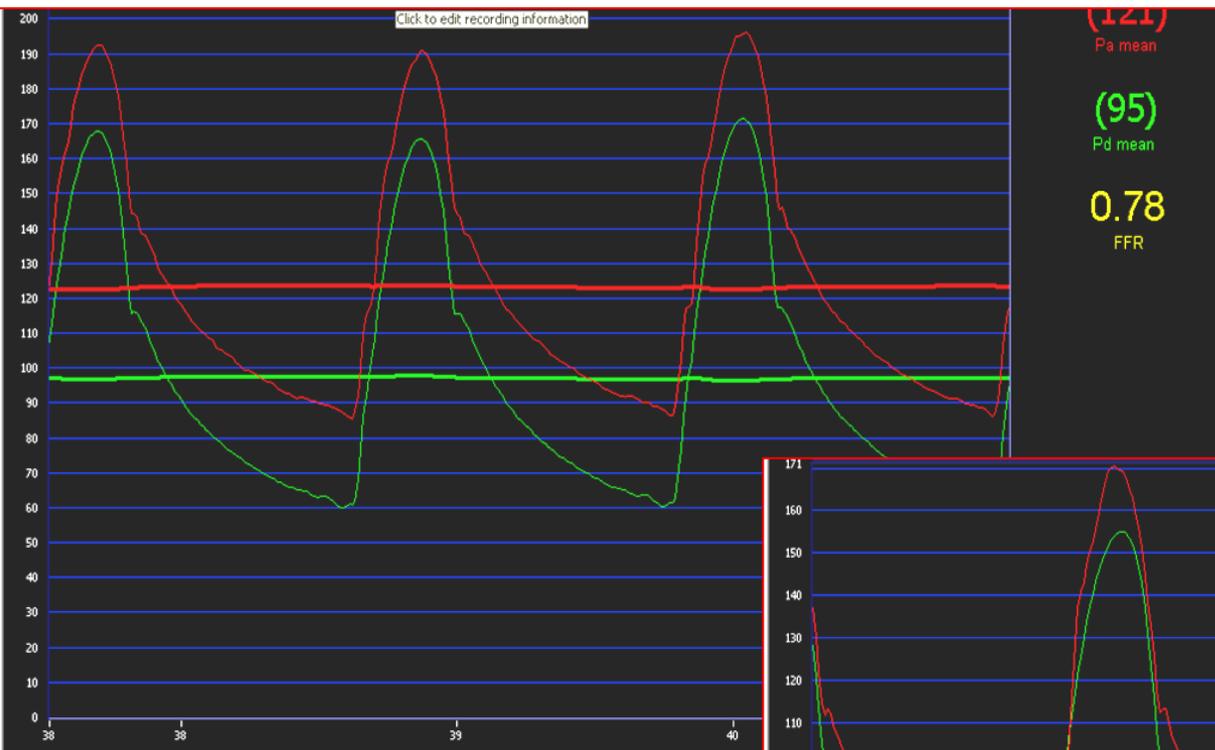
**Pressure Gradient:**  
**different morphology**

+6 s +8 s +10 s 27'33"00 +1 s

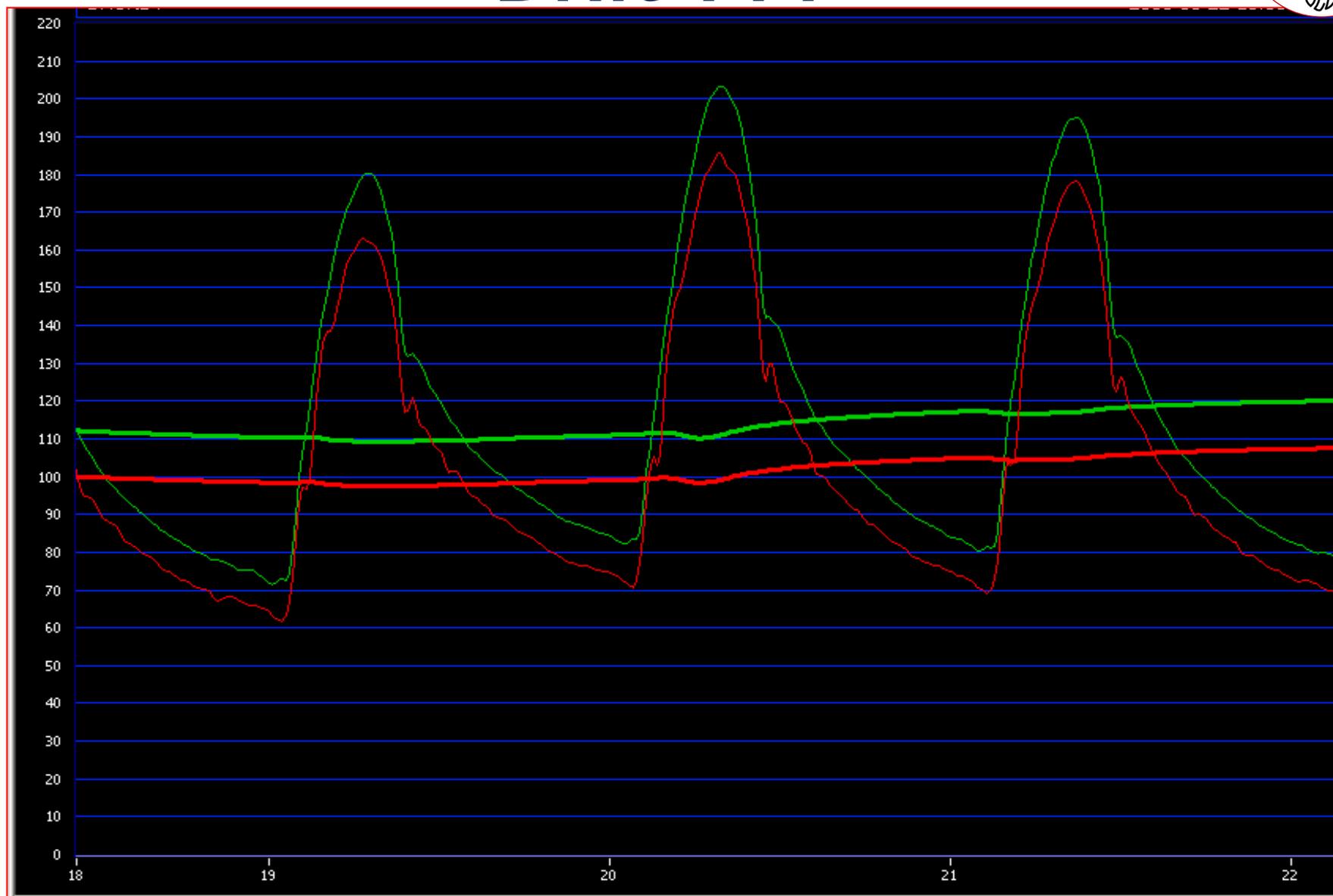
1 s +2 s +3 s +4 s 40'26"50 +500 ms +1 s +1.5 s

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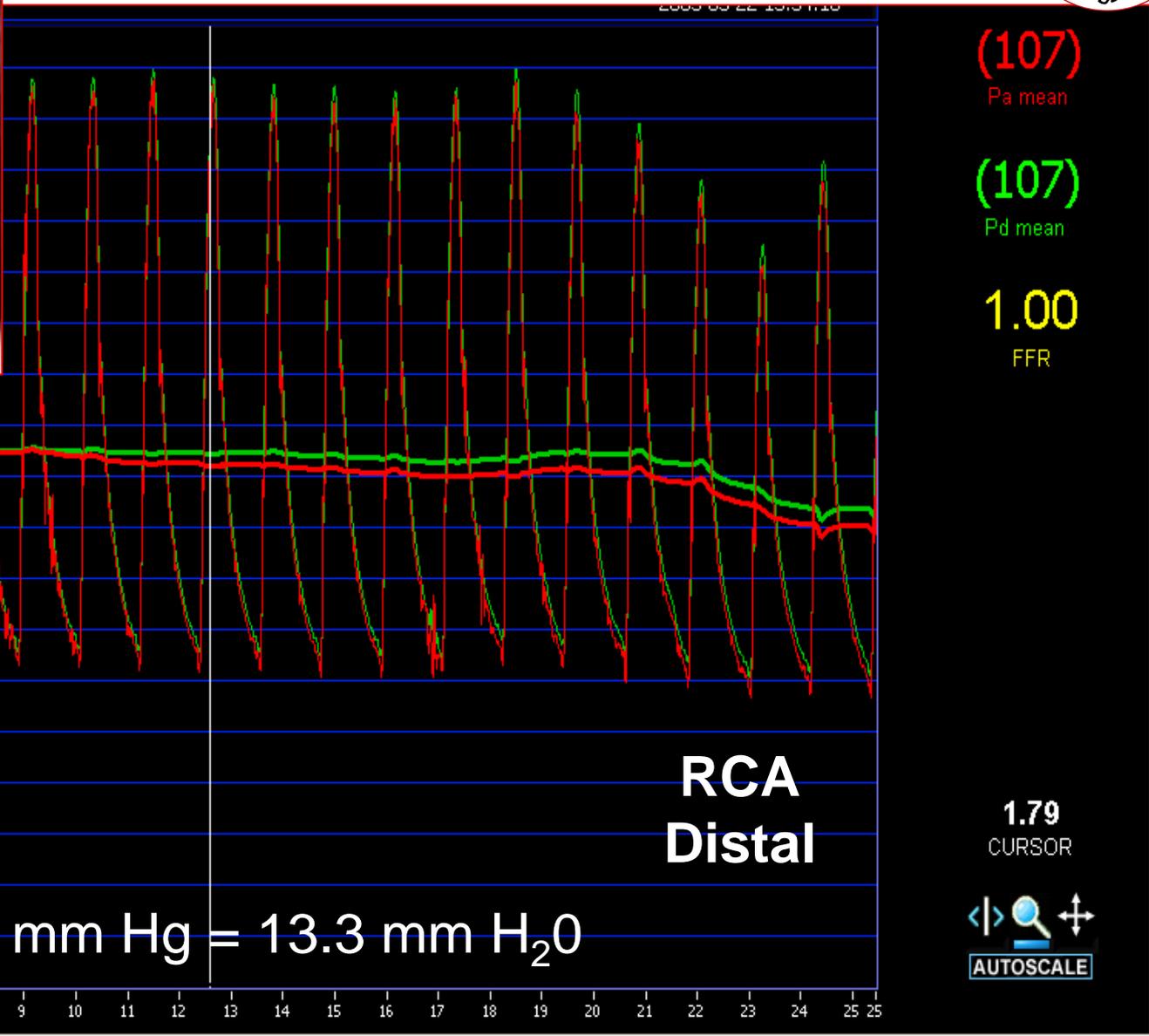
## Drift ?



# Drift ???



## Drift ???





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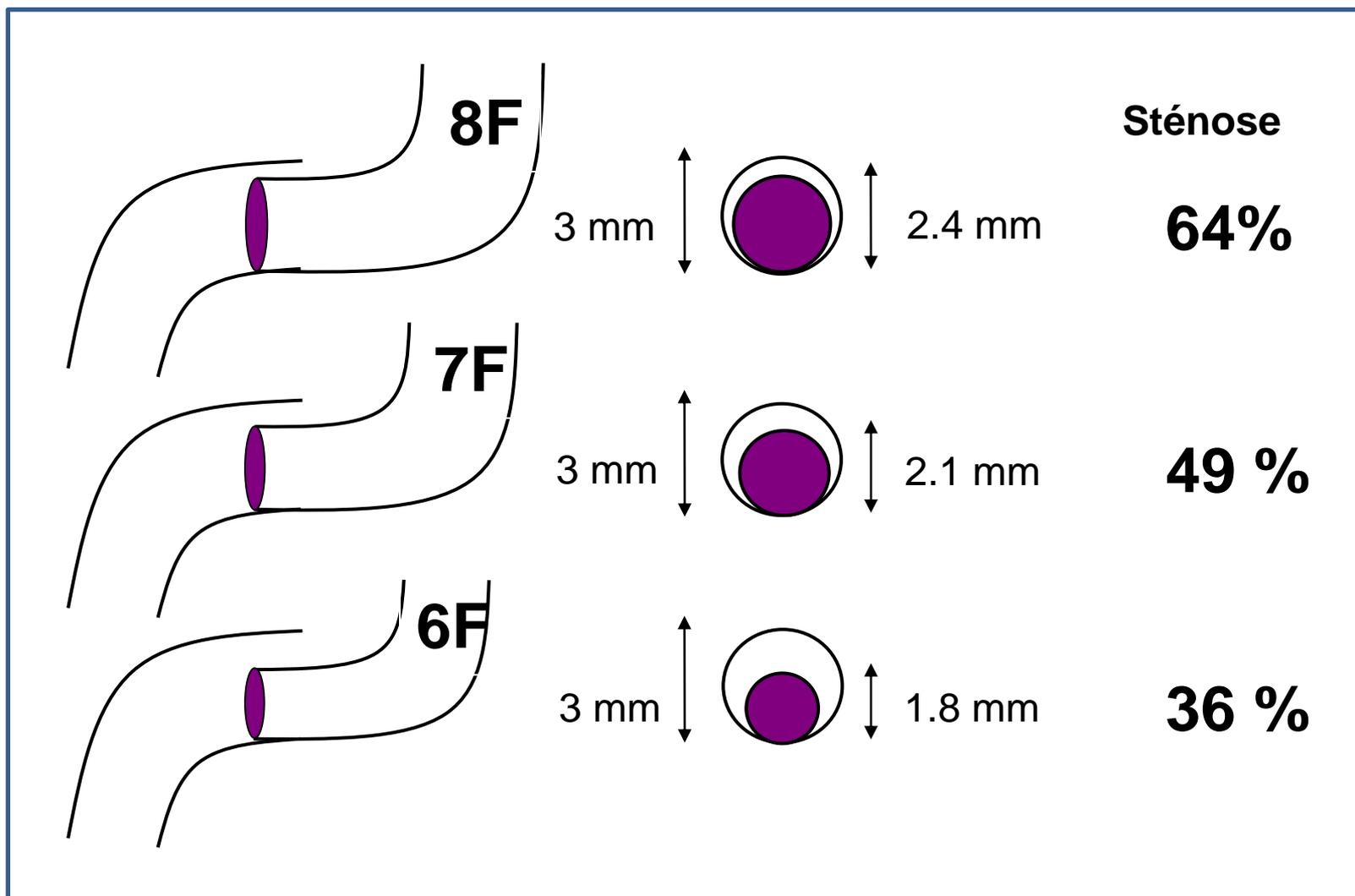
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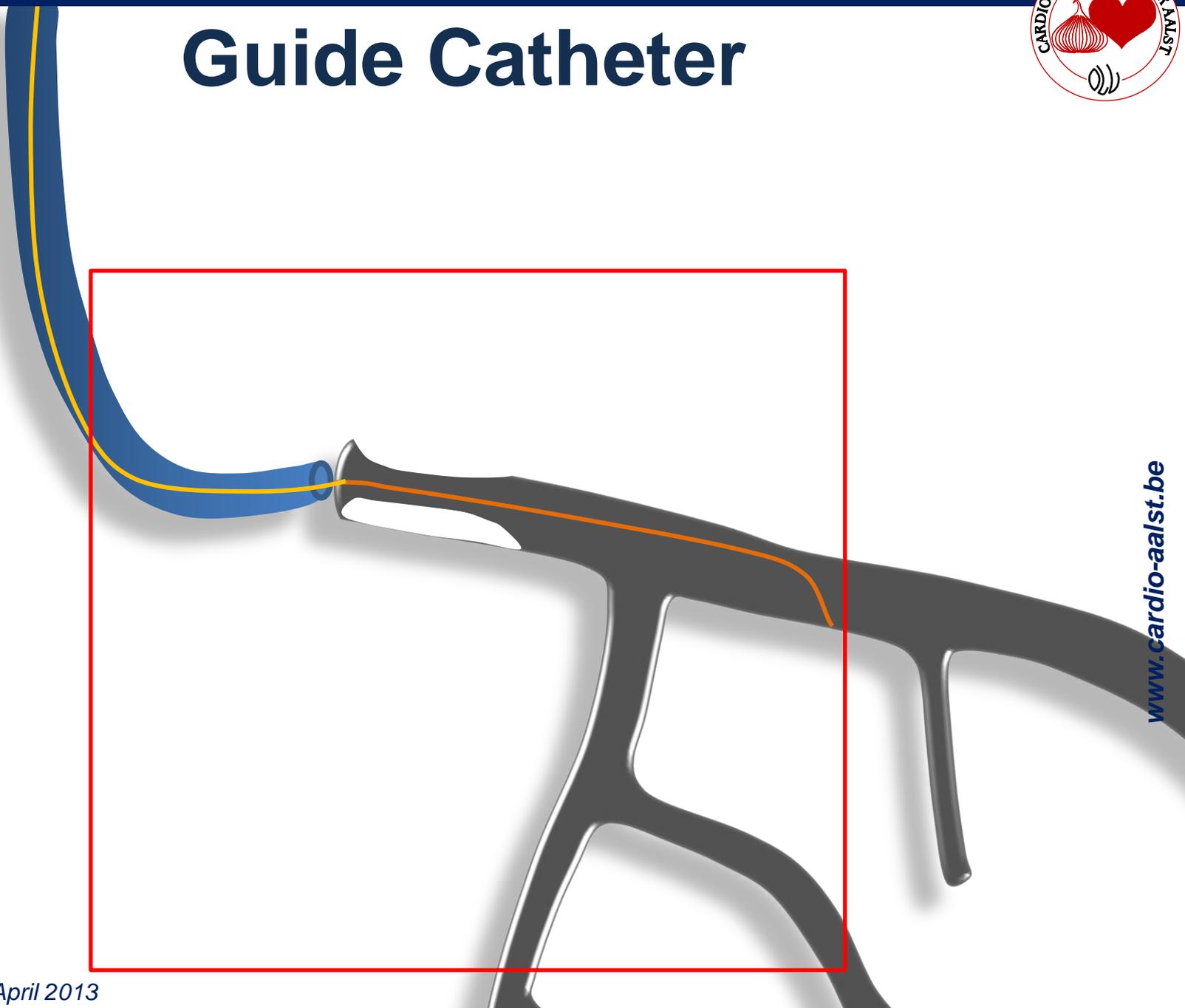
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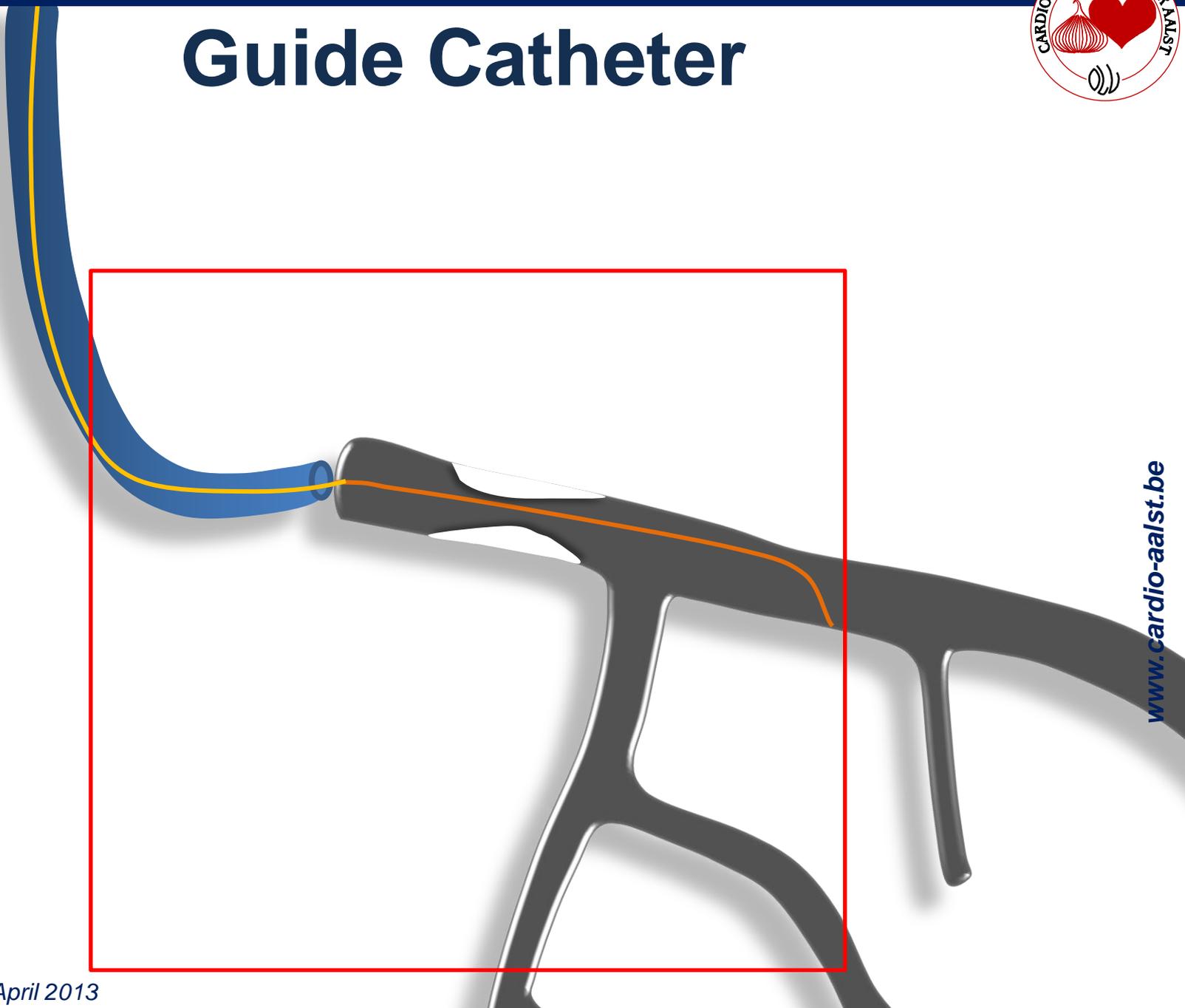
# Guide Catheter



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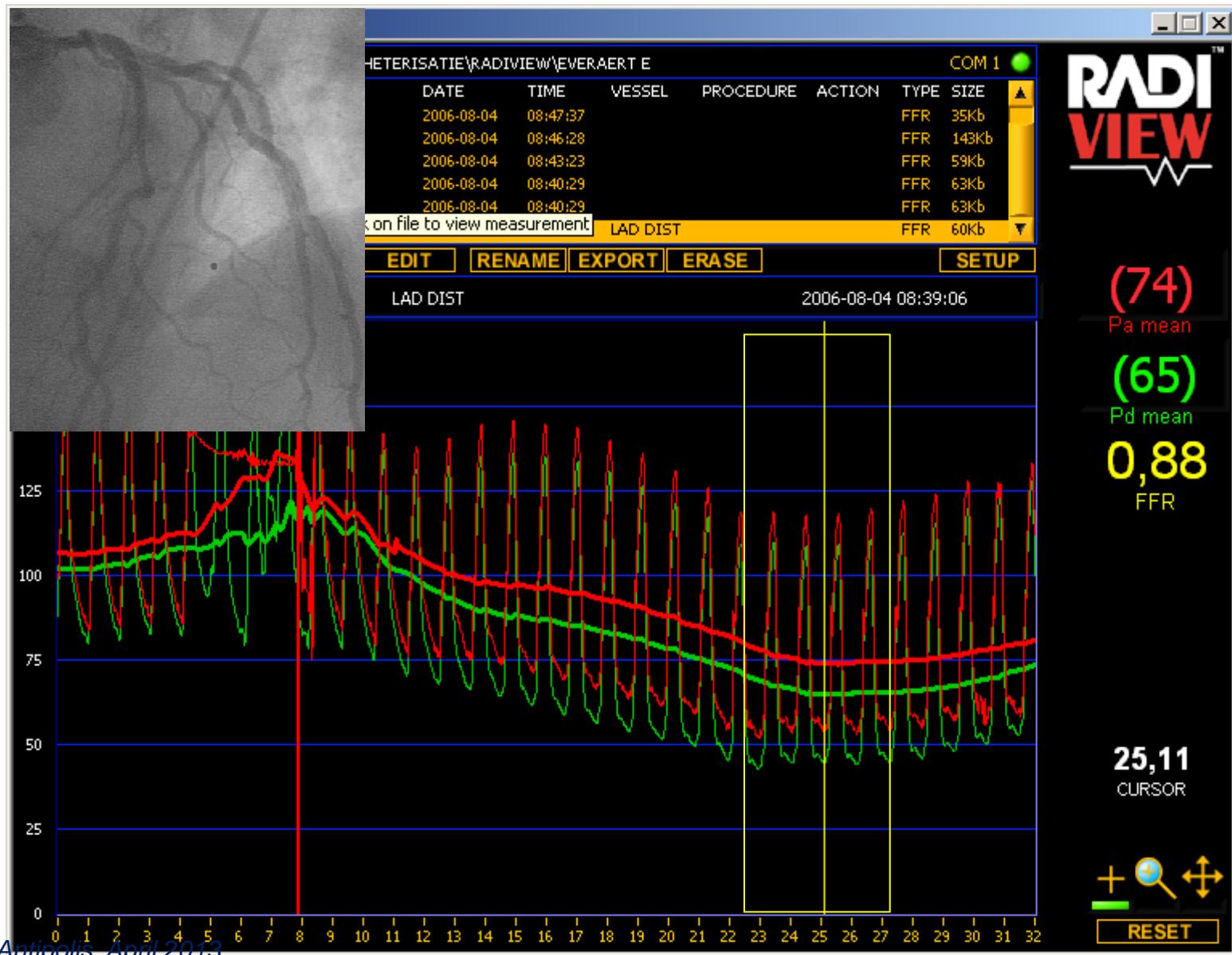


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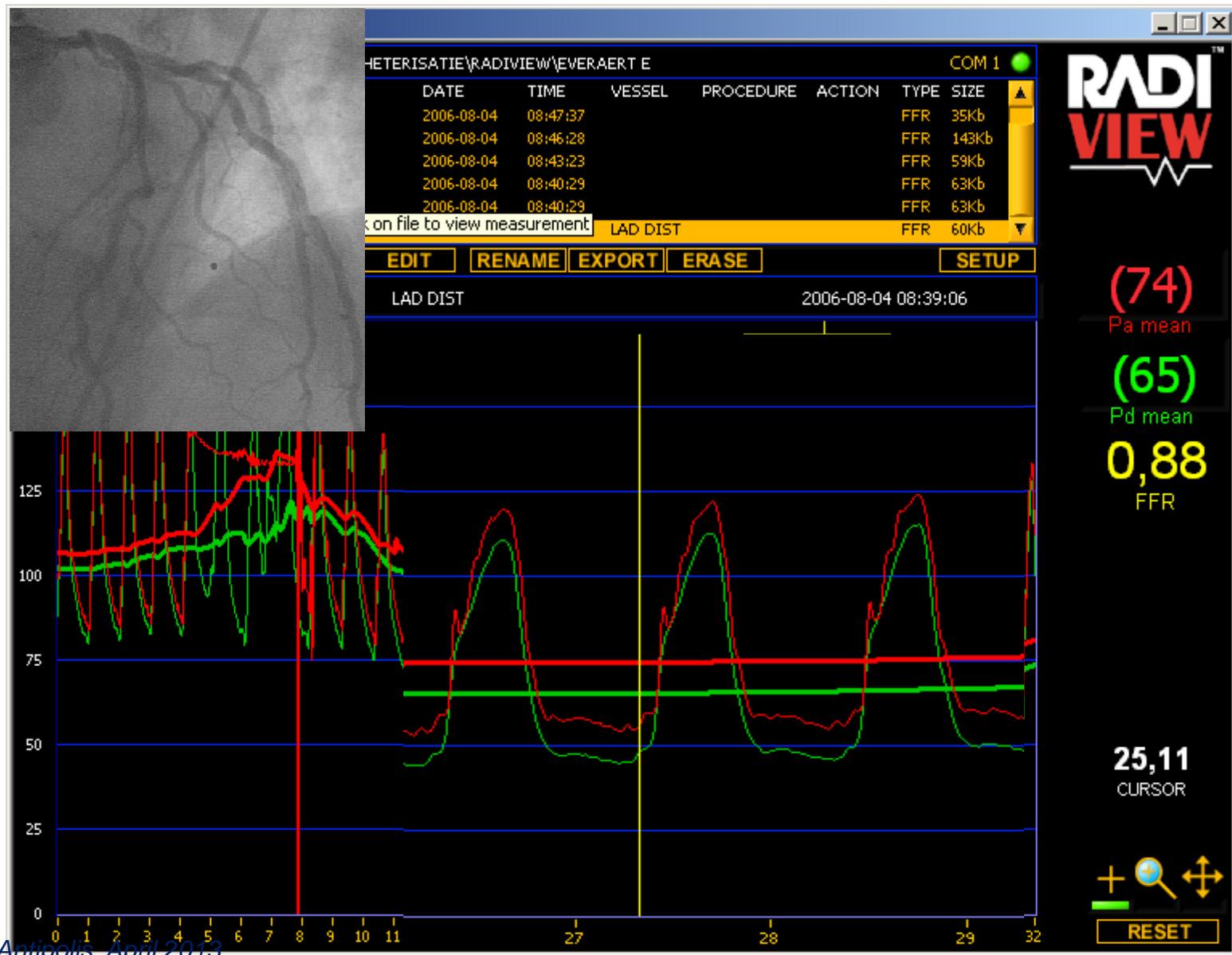


# Guide Catheter

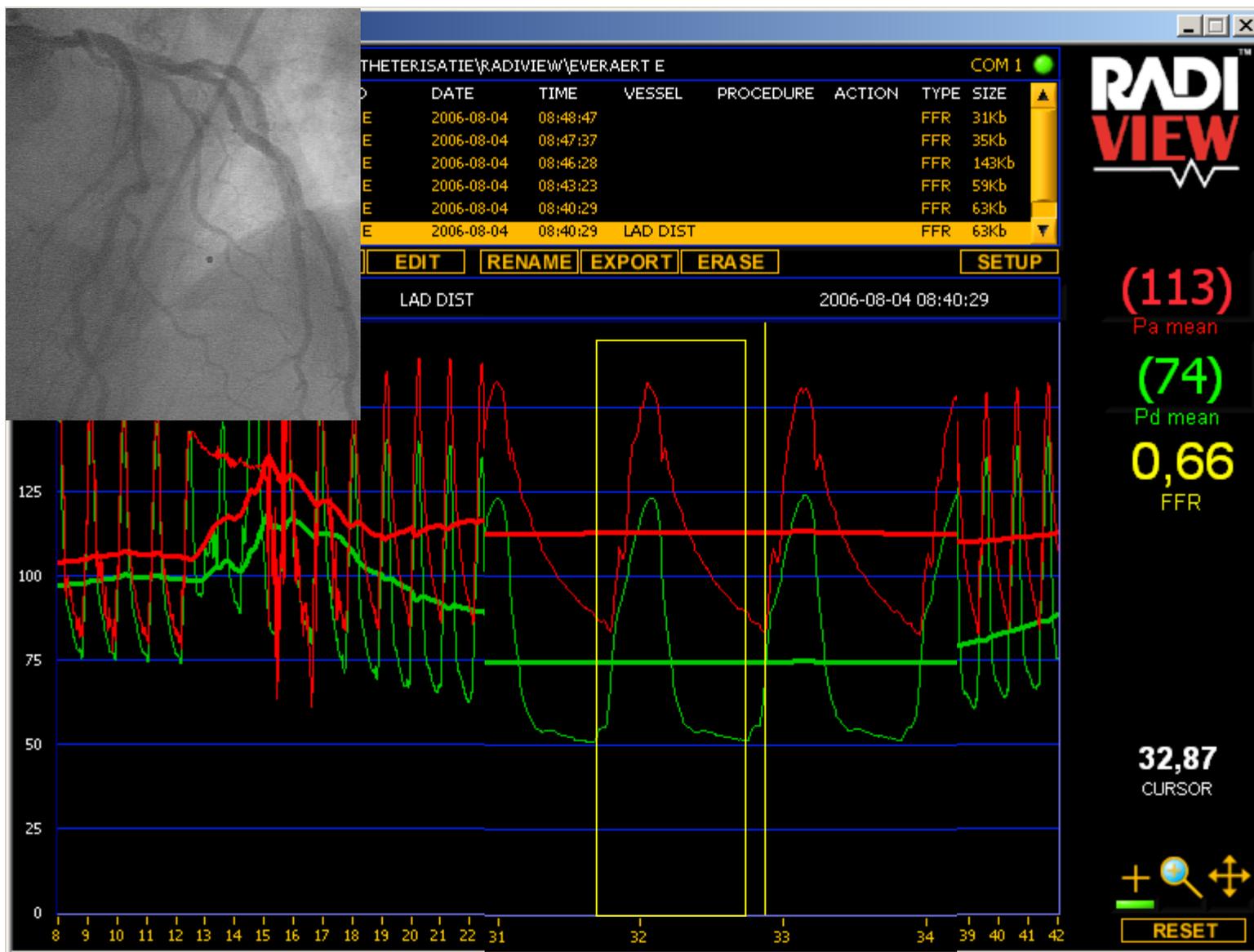




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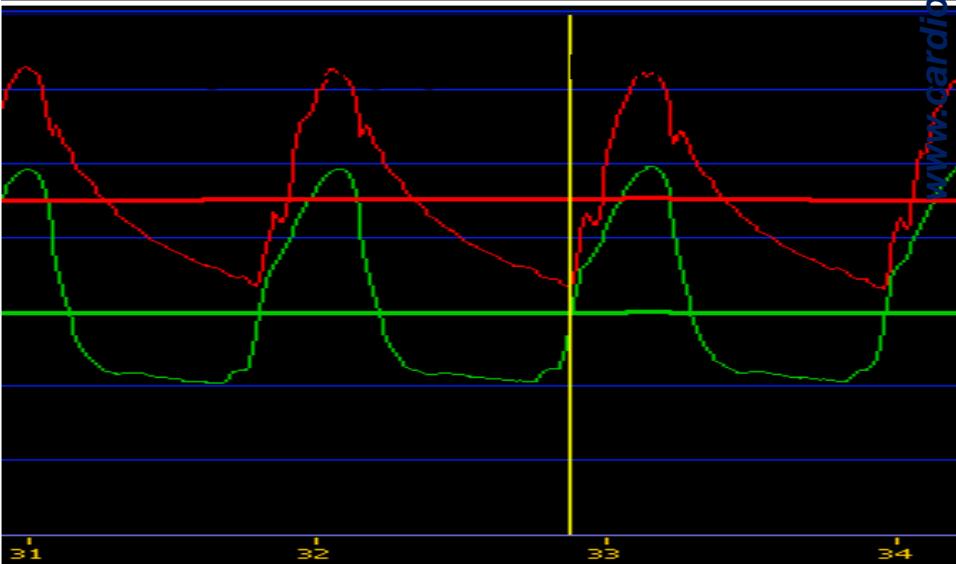
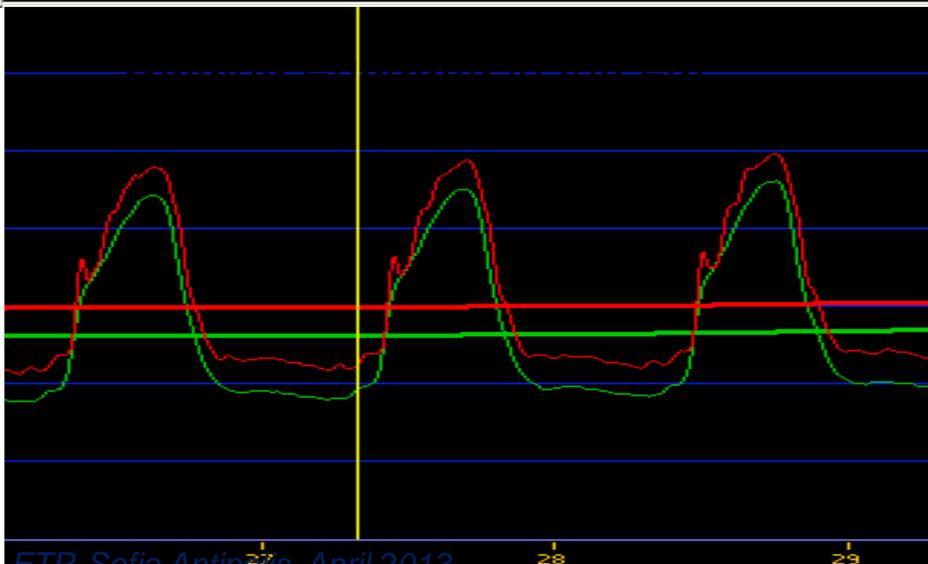
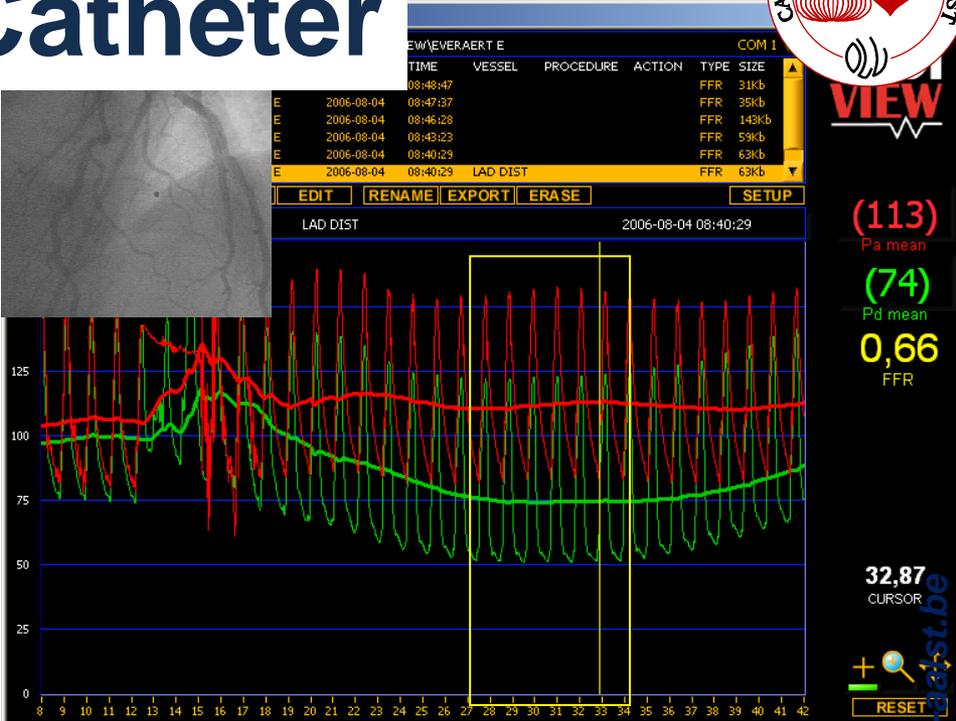
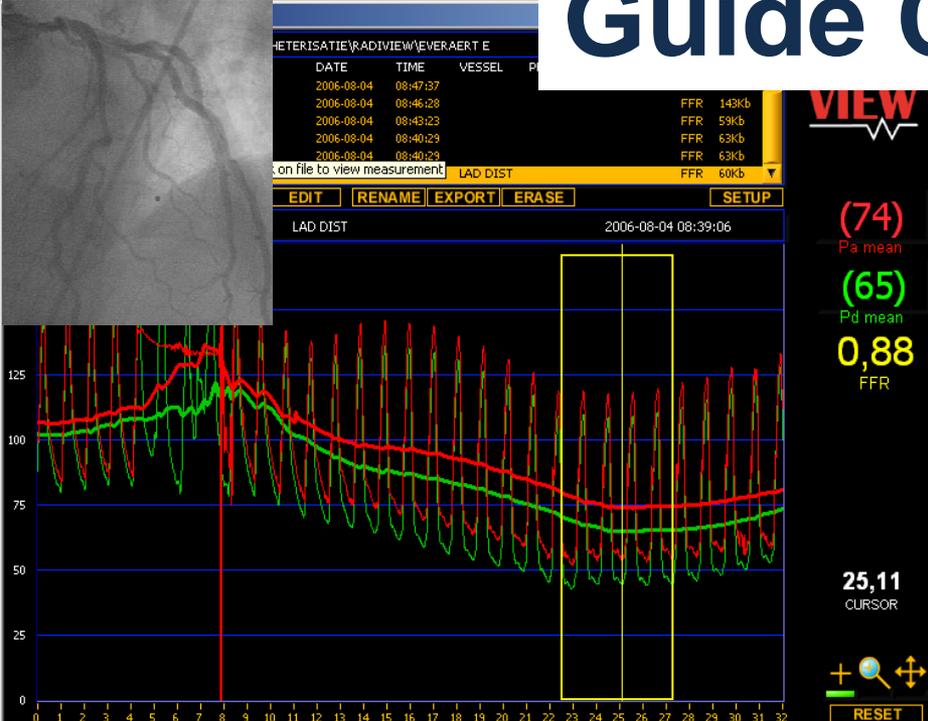


# Guide Catheter





# Guide Catheter





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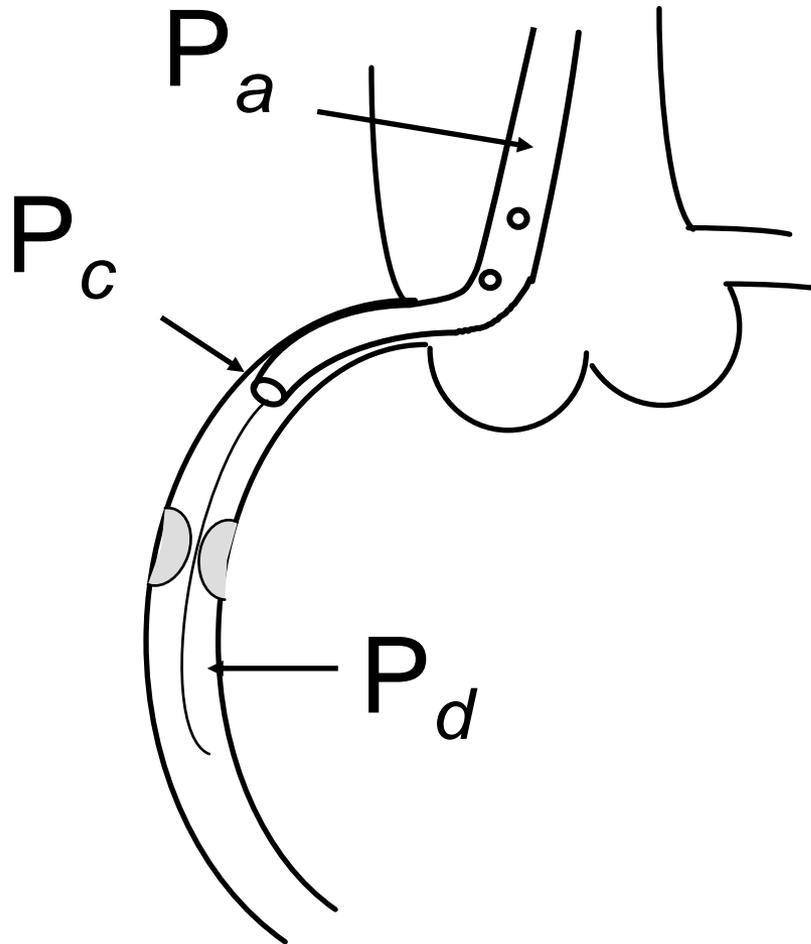
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# Side Holes



$$P_c \neq P_a$$



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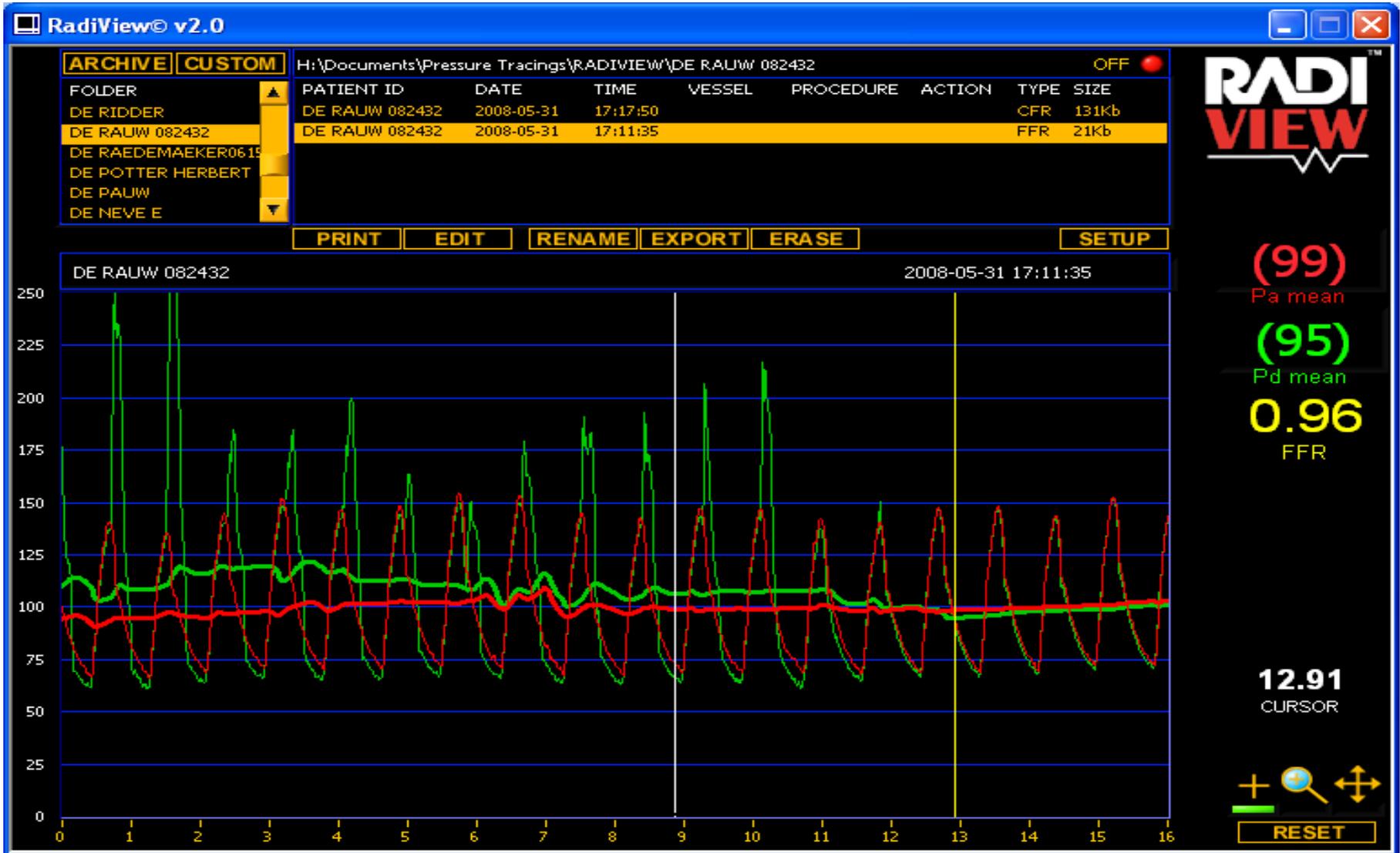
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## « Whipping »





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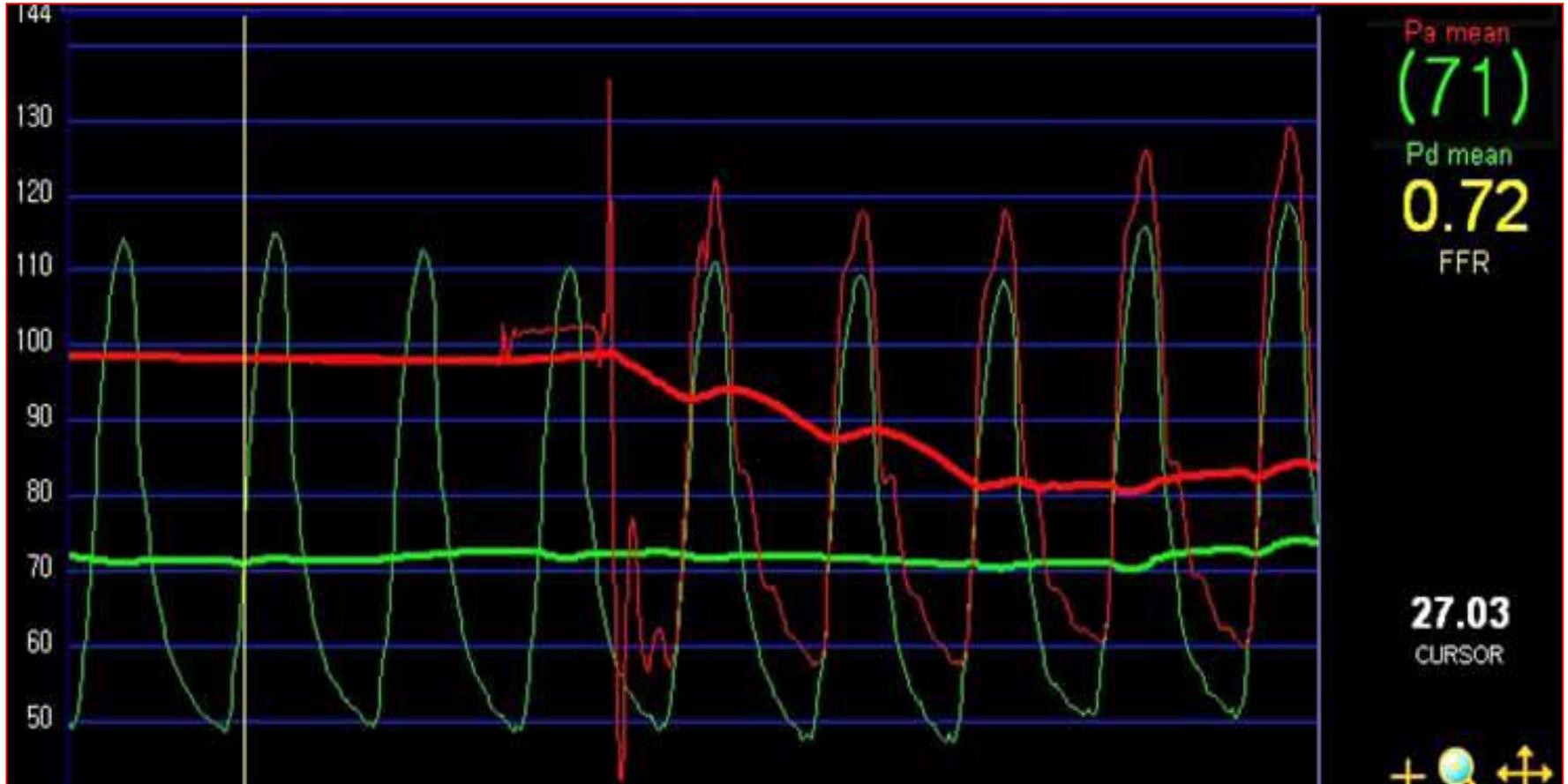
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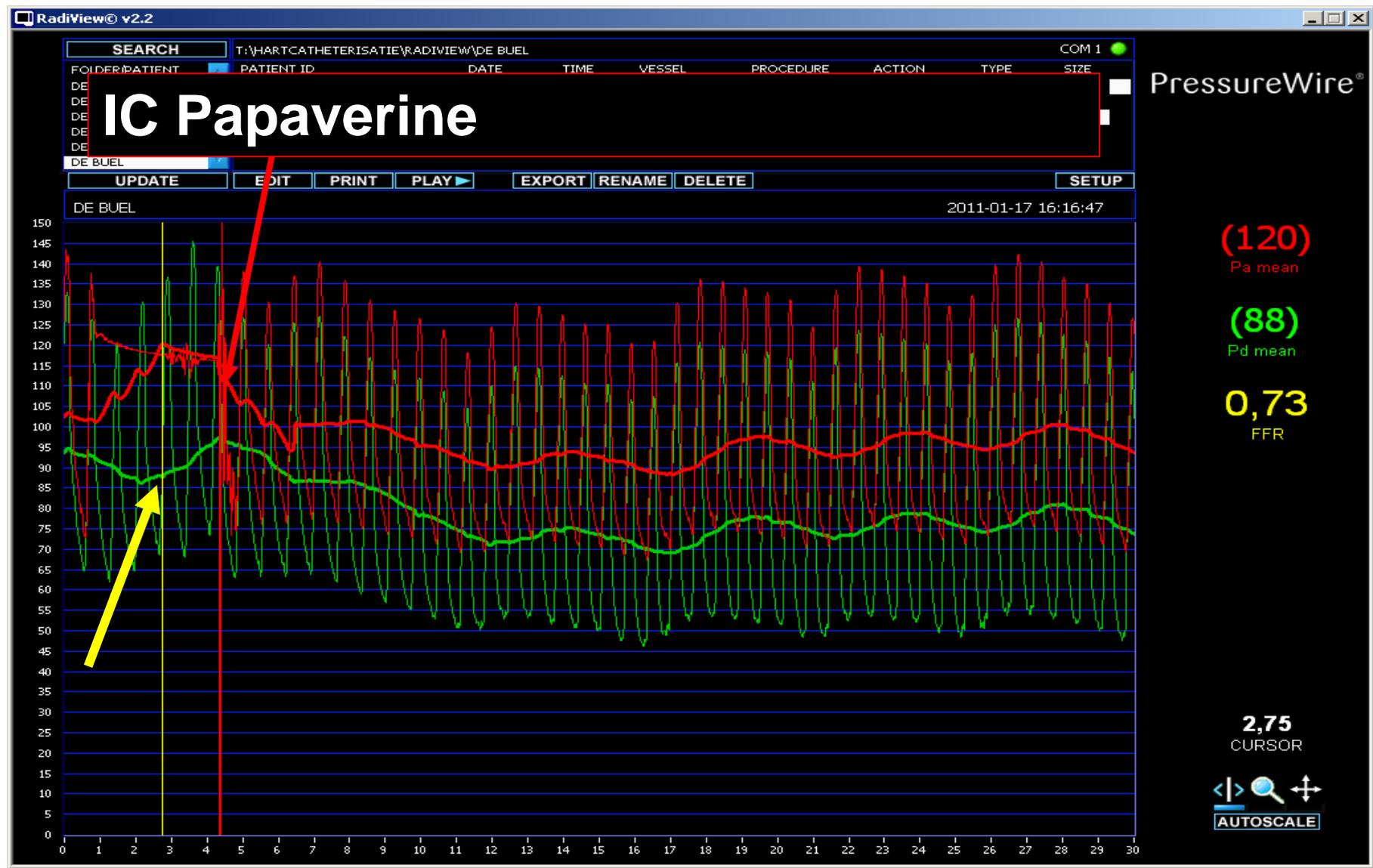
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# Position of the Cursor



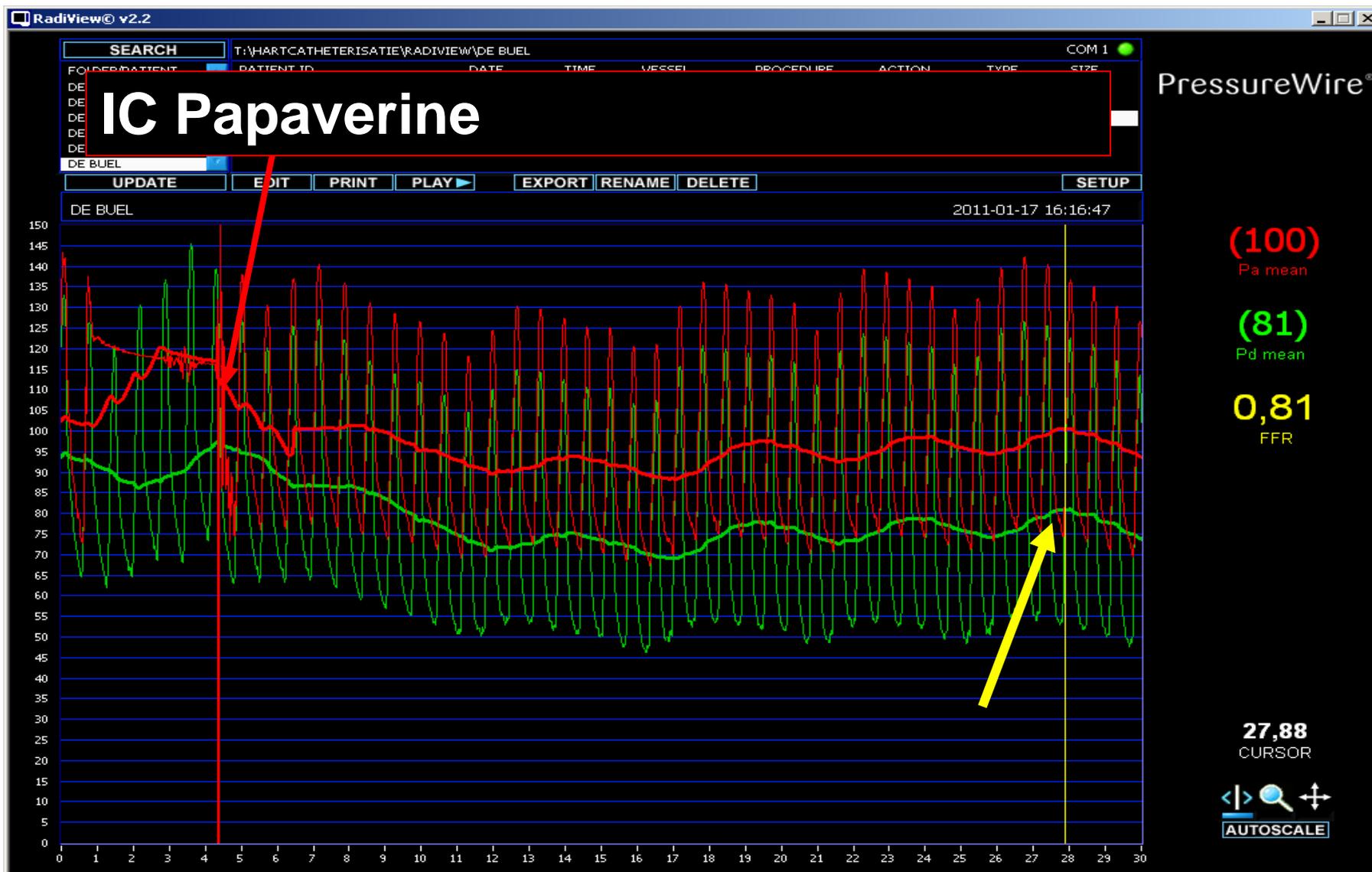


# Position of the Cursor



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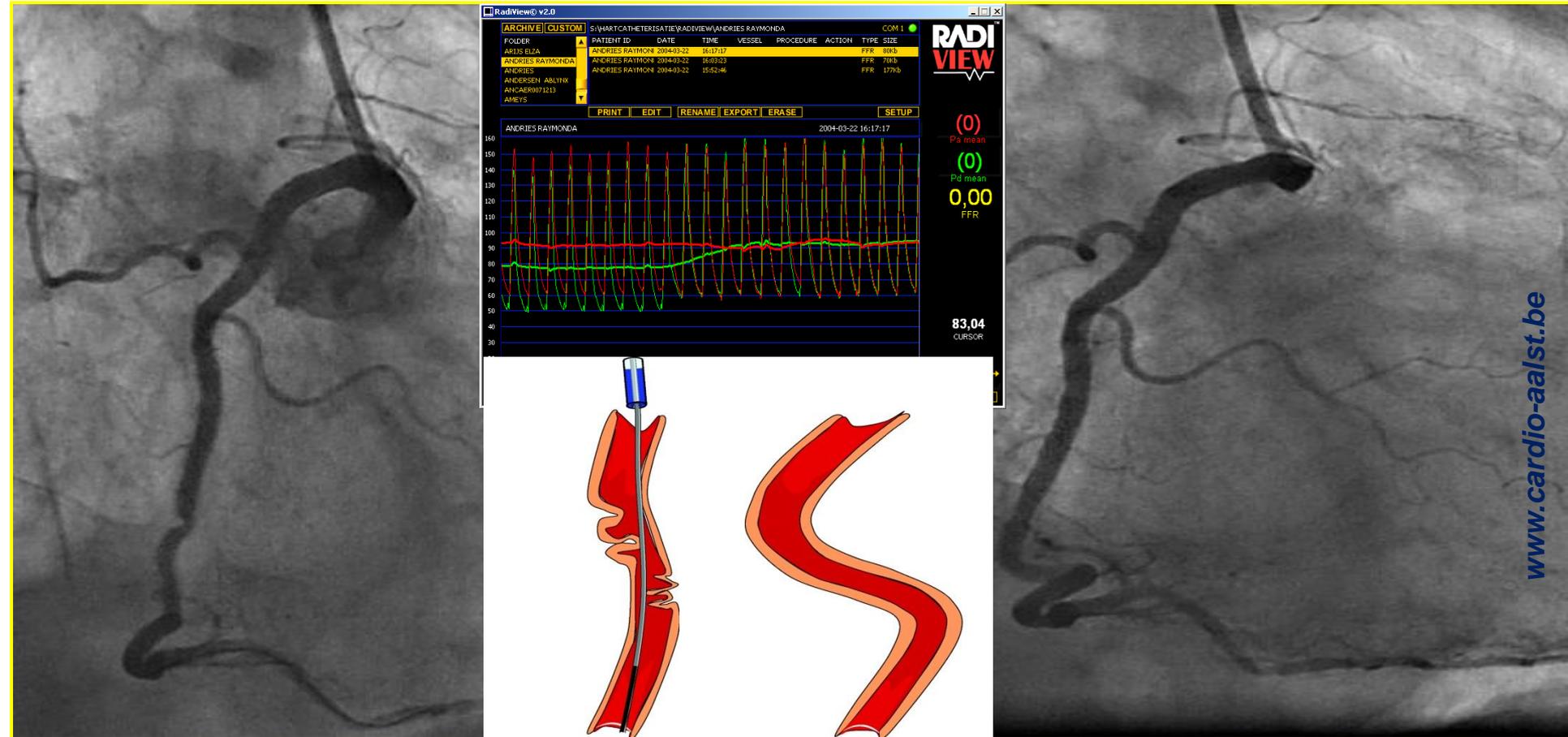
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# Accordion Effect



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## False Negative FFR: does it exist ?

*Your patient has a stenosis and/or chestpain but non-ischemic FFR*

# Checklist

- exclude insufficient hyperemia → *try more or other stimulus*
- **guiding-related problems** → *avoid deep engagement, flush vigorously*
- other culprit lesion? (same vessel or other vessel)
- diffuse disease → ***pull back curve***
- severe microvascular disease (*rarely affecting FFR significantly*)
- abundant collaterals
- small perfusion territory, old infarction, little viable tissue
- stenosis truly less severe than it looks and functionally non-significant
- chestpain atypical, non-cardiac or not due to the interrogated lesion

- exercise-induced spasm
- severe LVH?
- truly “false negative FFR” (very rare)



# If you intend to start an FFR programme...

1. Train your nursing staff and techs and explain why you do it
2. Identify key personnel to educate the others... (FFR champions)
3. Do it the same way every time
4. Start with a series of tight lesions... (easier to understand)
5. Be consistent in your decisions... (if not, don't do it)
6. Be modest (pressure never lies)...
7. If you ever think of doing, just do it

# FFR is like Instrument Flying



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