



**“Perfect is the enemy of Good.”**

By Voltaire 1694-1778

-- **Severe Ellis Class III Perforation**

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**19/01/2012**

**Pok Oi Hospital**

NO Disclosure



## Case Summary

- ▶ **F/80**
- ▶ History of HT, Gout, Hyperlipidemia, Osteoporosis, **Hypercalcemia**, Chronic renal impairment
- ▶ ACS +APO 06/2011
- ▶ Echo EF 37%, hypokinesia over antero-septal, anterior and lateral wall, mild MR, mod TR
- ▶ C x elective coro + PCI 01/08/2011



# Coronary Angiogram - Left

Lossy Compression - not intended for diagnosis



## Left Rotational Coro:

1. Distal **LM 95%**
2. Ostial LAD 40%, **pLAD 80%**
3. Ostial LCx 10%, **dLCx 70%**
4. **Trifurcation Lesion.**



# Coronary Angiogram - Left

Lossy Compression - not intended for diagnosis



## Spider view:

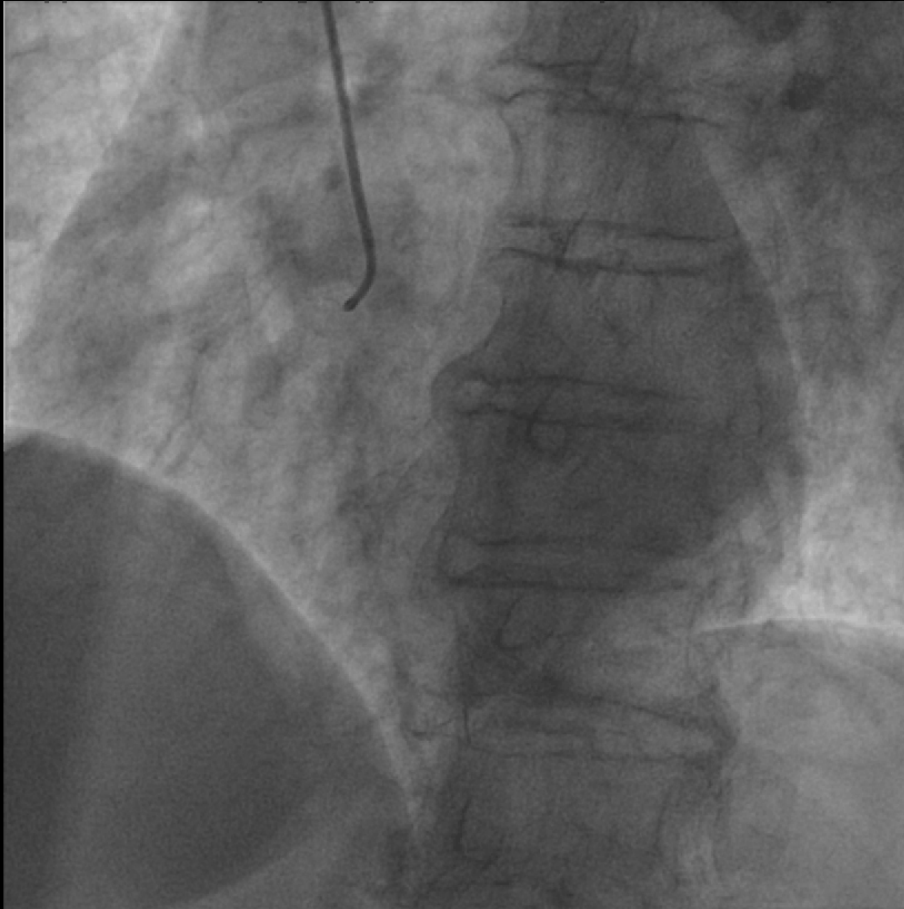
1. Distal **LM 95%**
2. **Ostial LAD 40%**, pLAD 80%
3. **Ostial LCx 10%**, dLCx 70%
4. **Trifurcation Lesion.**





# Coronary Angiogram - Right

Lossy Compression - not intended for diagnosis



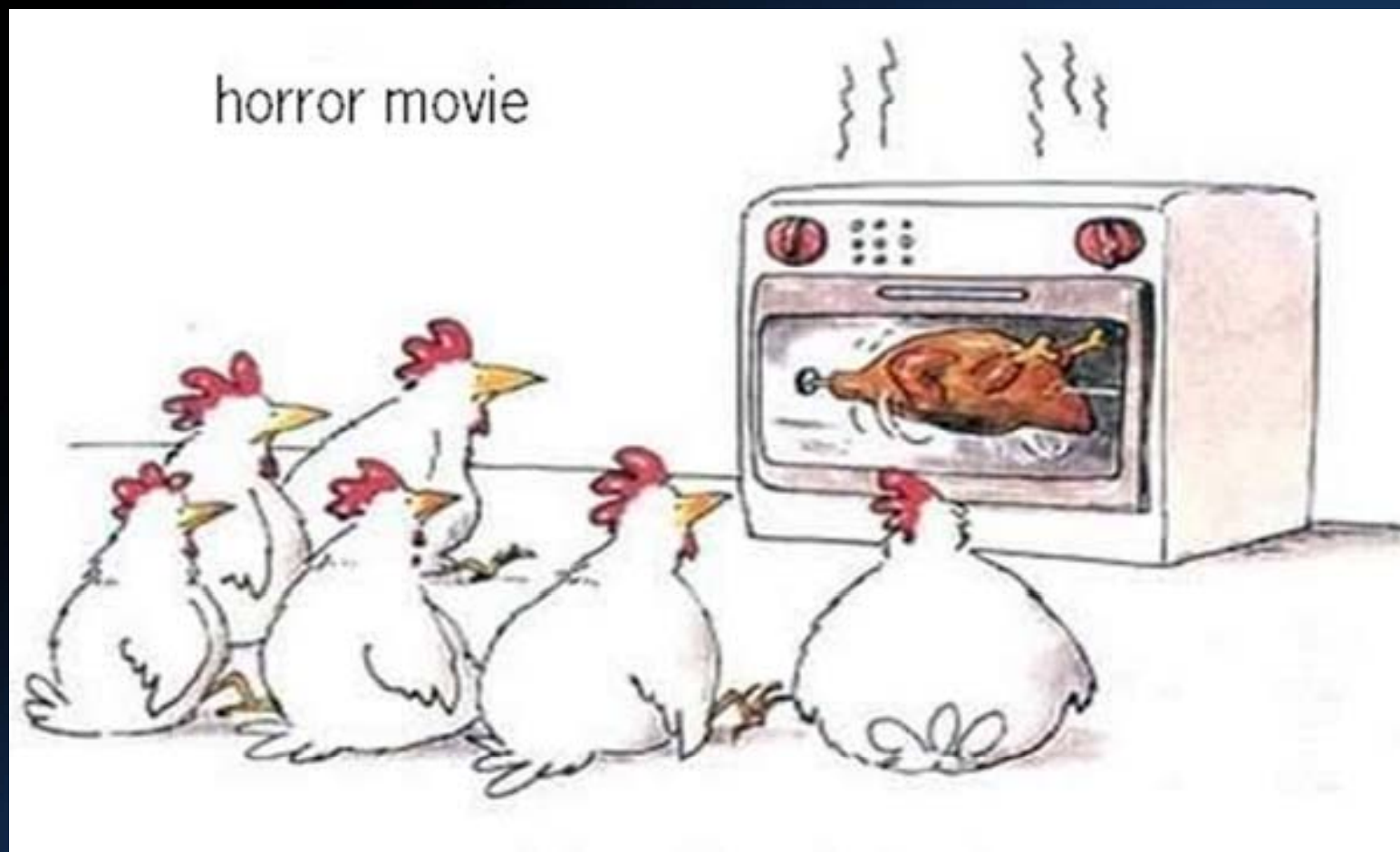
**Right Coro:**  
**RCA Minor disease**

**Pt's Risk Factors for Perforation:**

1. Female
2. Old age
3. Hypercalcemia
4. Calcified Vessel
5. Angulated Lesion



# To save time for horror movie





# Jump to final steps

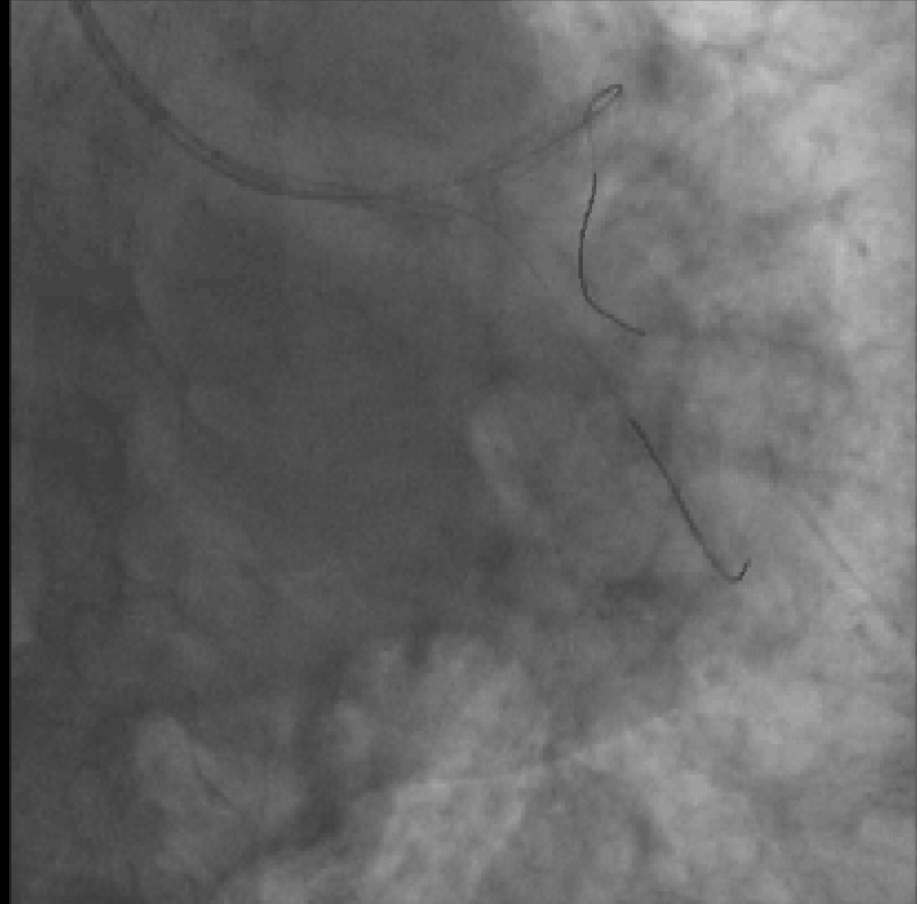


p-mLAD (Biomatrix 3.0 / 24)  
LM-pLAD (Biomatrix 4.0/18)  
Provisional strategy to LCx  
IVUS and Final Balloon Kissing

(At least **NO Harm** by NORDIC III)

Niemela, M et al circulation 2011, 123(1), 79-86

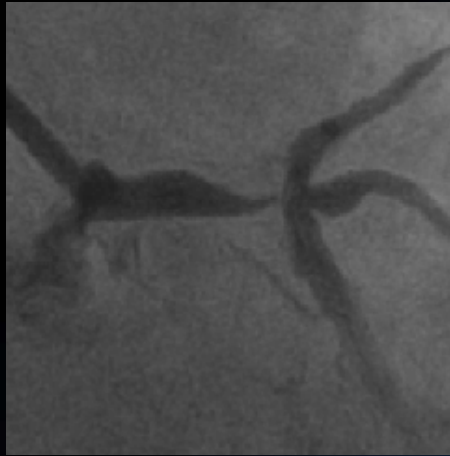
Lesion Compression - not included in diagnosis



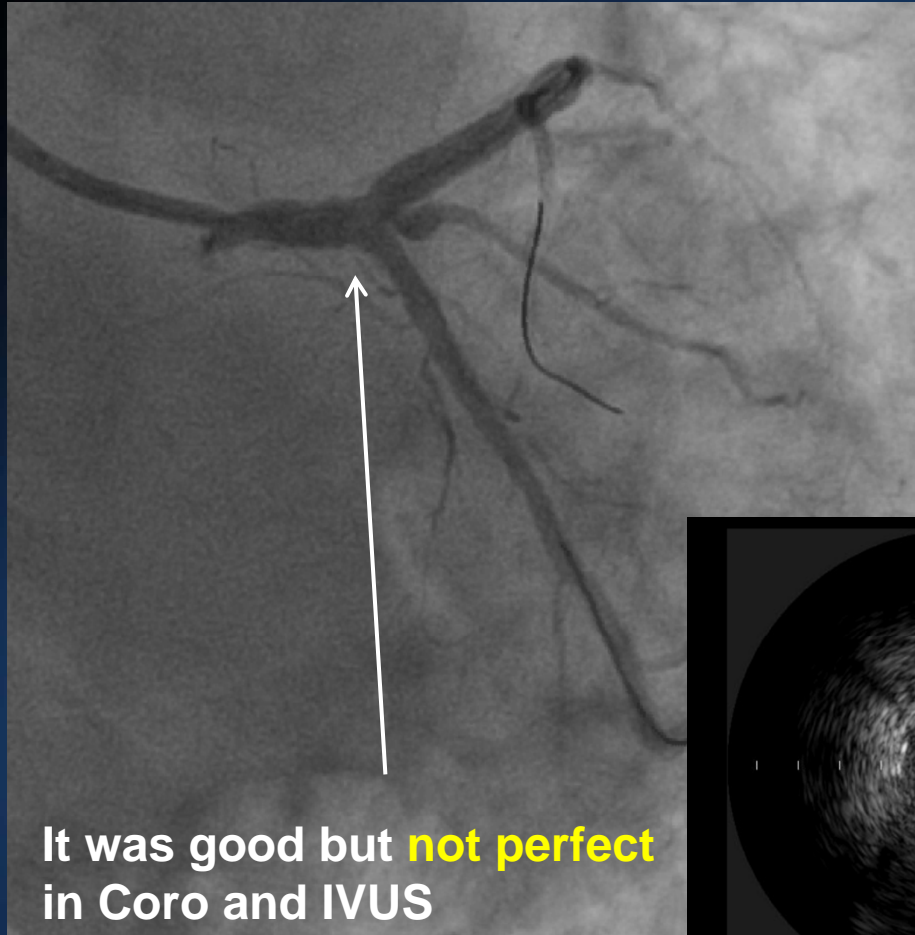
Coro after final kissing



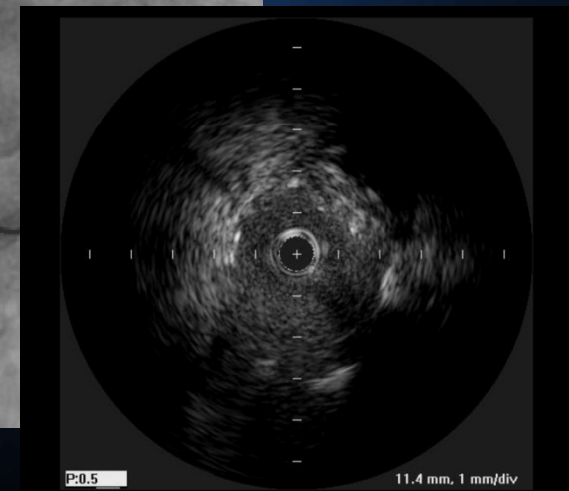
It was good but not **perfect** !



Pre-Op Coro



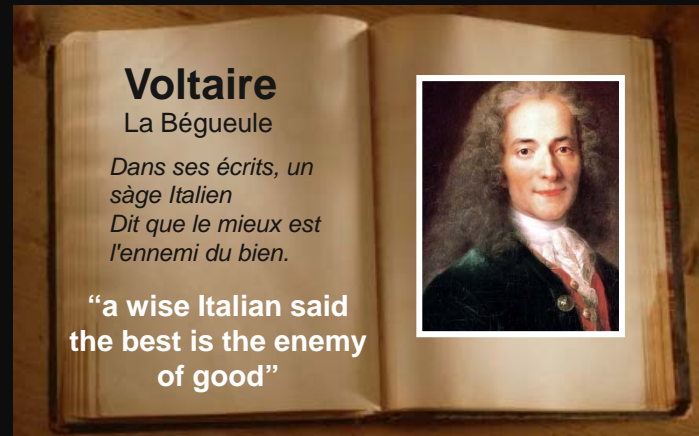
It was good but **not perfect**  
in Coro and IVUS







**Perfect is the  
enemy of good !**



Aristotle, Confucius (孔子) and other classical philosophers propound the principle of the golden mean which counsels against extremism in general. (1)

(1) Tal Ben-Shahar (2009), *The Pursuit of Perfect*





# The most **painful** gain.

Lossy Compression - not intended for diagnosis



Biomatrix 4.0 /18.  
(LM-pLAD)

NC Quantum  
4.0/15  
(up to 18 ATM)



**Good result but  
not perfect.**

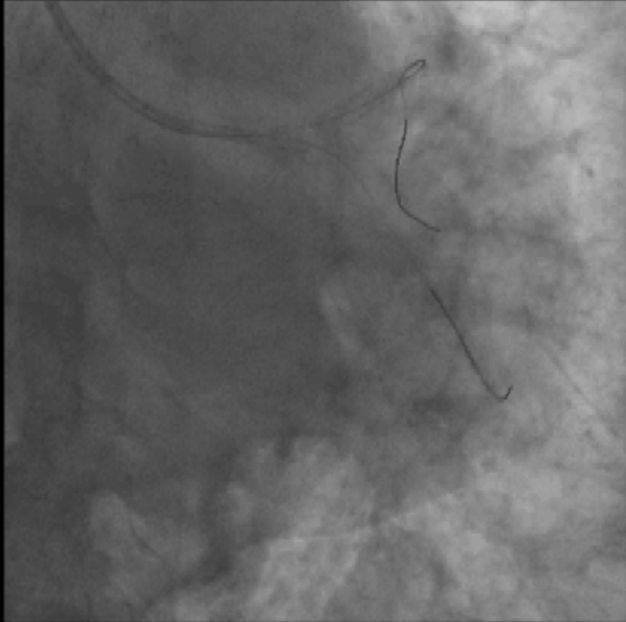


**Try 1.1 ratio NC  
Balloon  
NC Sprinter 4.5/15**



# Where was the rupture ?

Lossy Compression - not intended for diagnosis



Before

Lossy Compression - not intended for diagnosis



Afterward

5mins : BP drop to **63/42** mmHg,  
Heart rate 140bpm, Drowsy



# How to treat ?



Look at the patient ?



Call Surgeon ?



How to treat ? **Ans:Teamwork**

**T** - Together  
**E** - Everyone  
**A** - Achieve  
**M** - More

2<sup>nd</sup> operator & nurses

1<sup>st</sup> operator





# 1<sup>st</sup> operator do

Lossy Compression - not intended for diagnosis



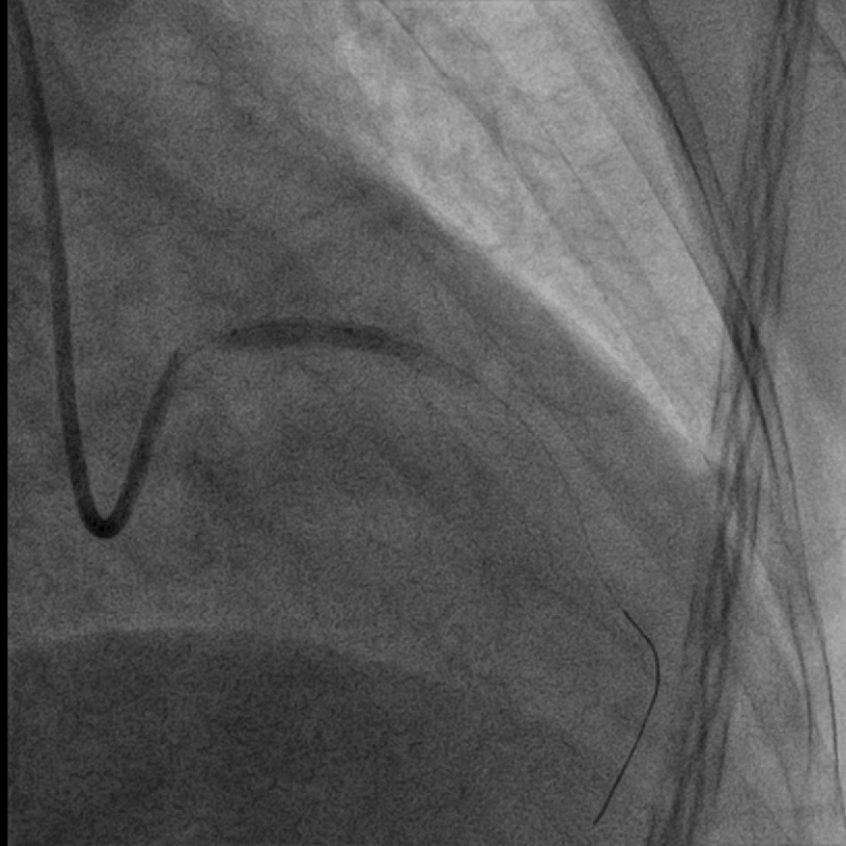
**Inflate balloon to stop bleeding at once and keep occlusion for 10 mins.**





# 1<sup>st</sup> operator do

Lossy Compression - not intended for diagnosis

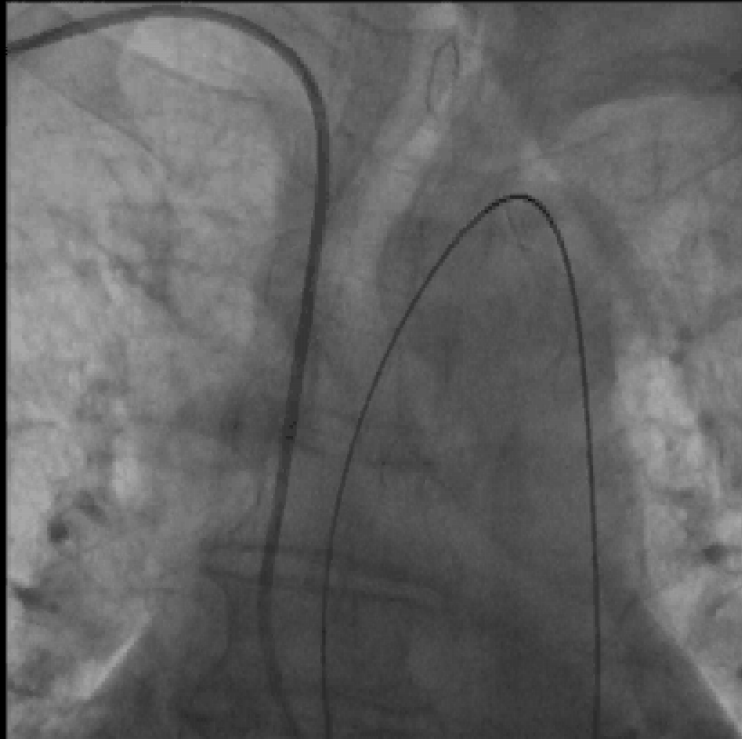


**Still Bleeding** after 10 mins occlusion



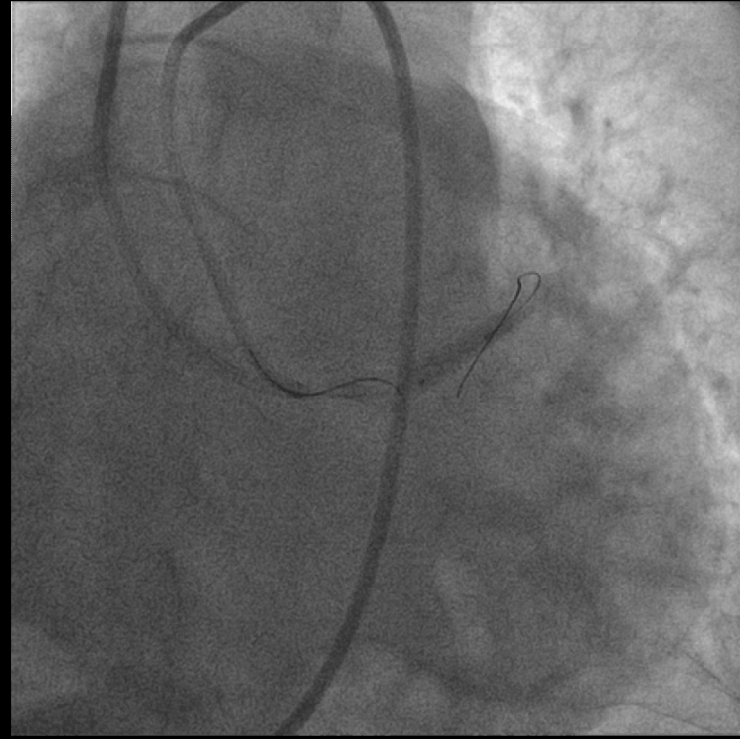
# 1<sup>st</sup> operator do

Lossy Compression - not intended for diagnosis



Establish another guide  
for cover stent via femoral

Lossy Compression - not intended for diagnosis

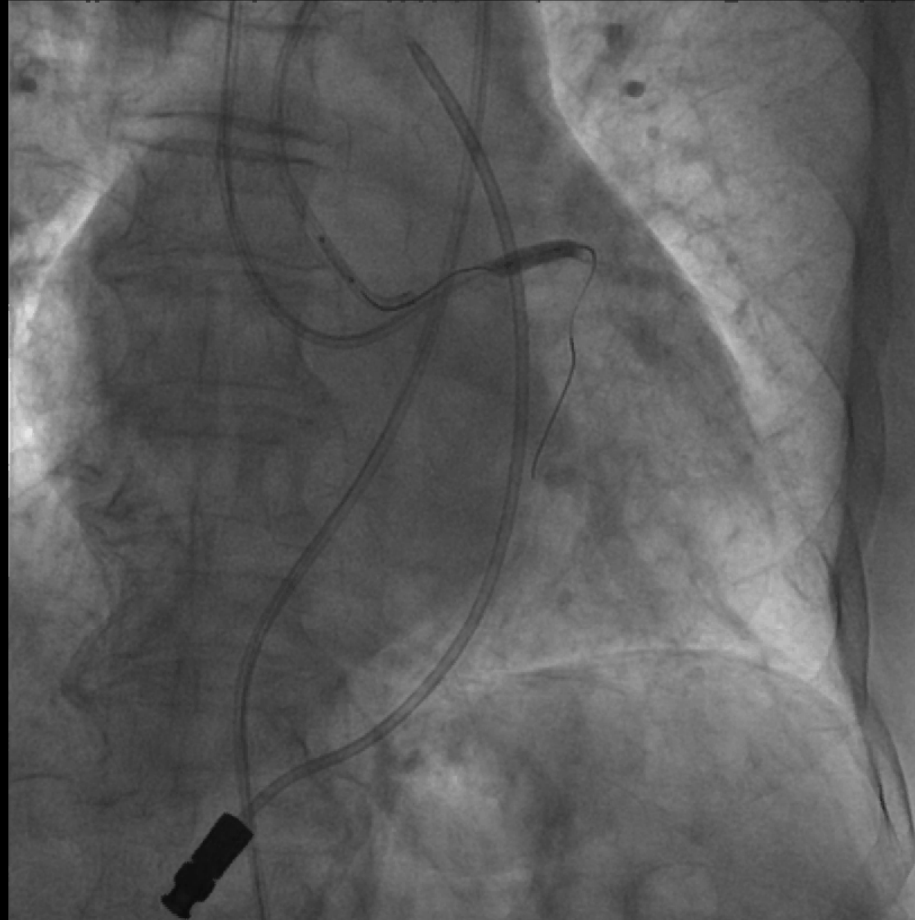


Prepare everything before  
removal of the inflated balloon



# 1<sup>st</sup> operator do

Lossy Compression - not intended for diagnosis

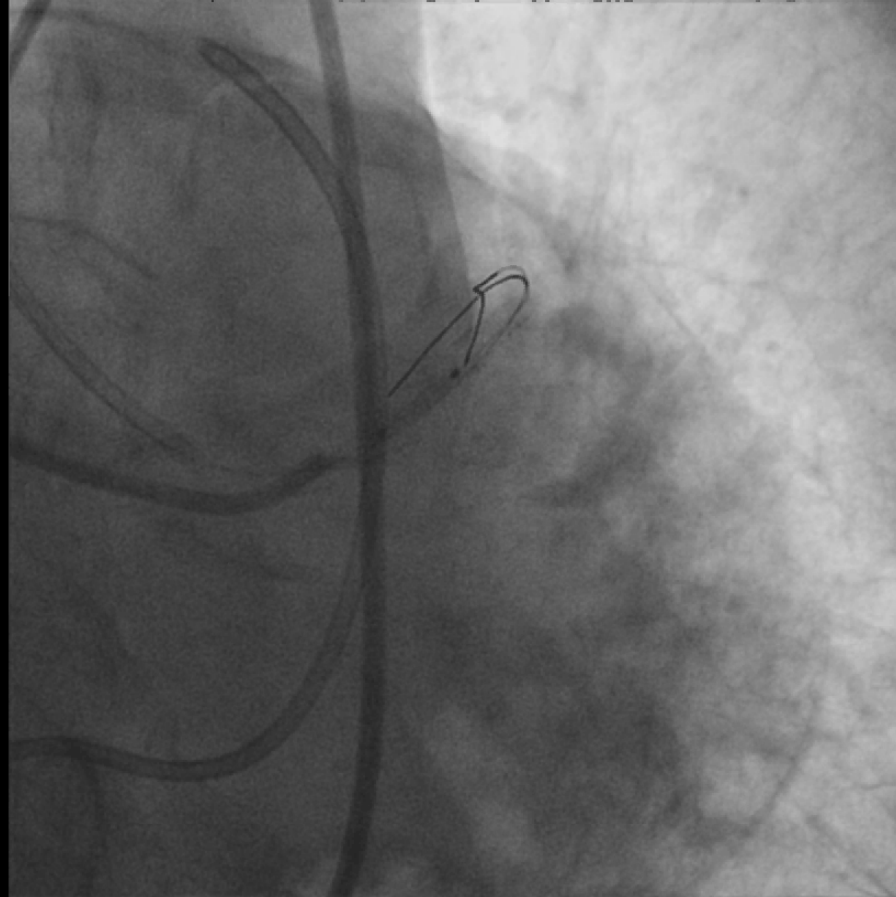


**Graftmaster stent 4.0/12**  
**(Make sure a good pericardial drain available)**



# 1<sup>st</sup> operator do

Lossy Compression - not intended for diagnosis



Still **bleeding** after cover stent !!  
What would you do ?

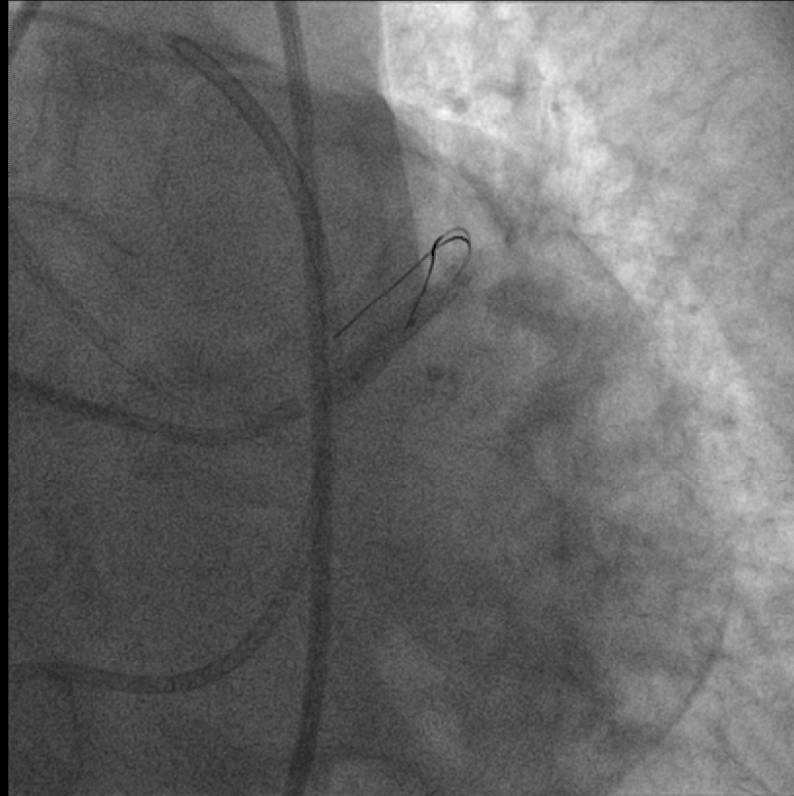




## 1<sup>st</sup> operator do

► **Inflate stent balloon again to 16 ATM** (RBP 16ATM)

Lossy Compression - not intended for diagnosis



Bleeding was reduced but **Still bleeding !!**

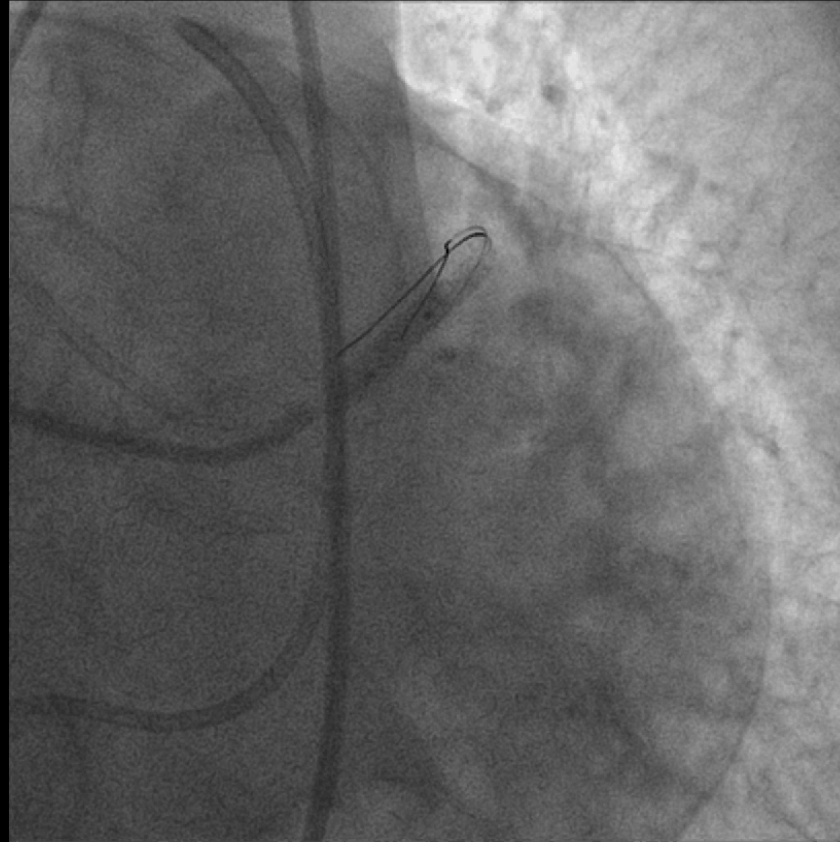




**1<sup>st</sup> operator do – never give up!**

► **Inflate the balloon to 18 ATM (>RBP 16ATM)**

Lossy Compression - not intended for diagnosis





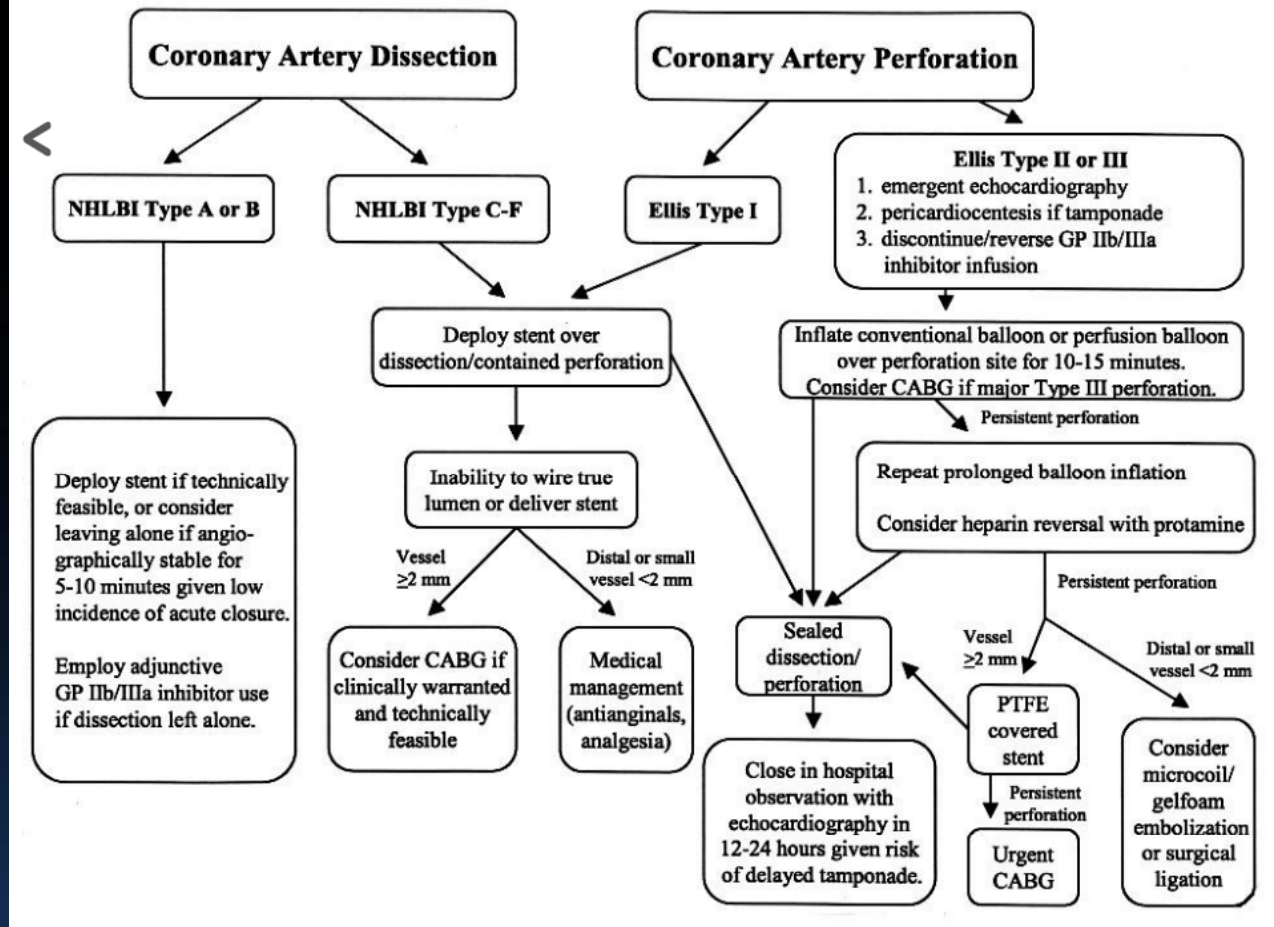
# Finally no more bleeding

Lossy Compression - not intended for diagnosis





## 2<sup>nd</sup> operator and nurses



J Invasive Cardiol. 2004;16(9)



## 2<sup>nd</sup> operator and nurses

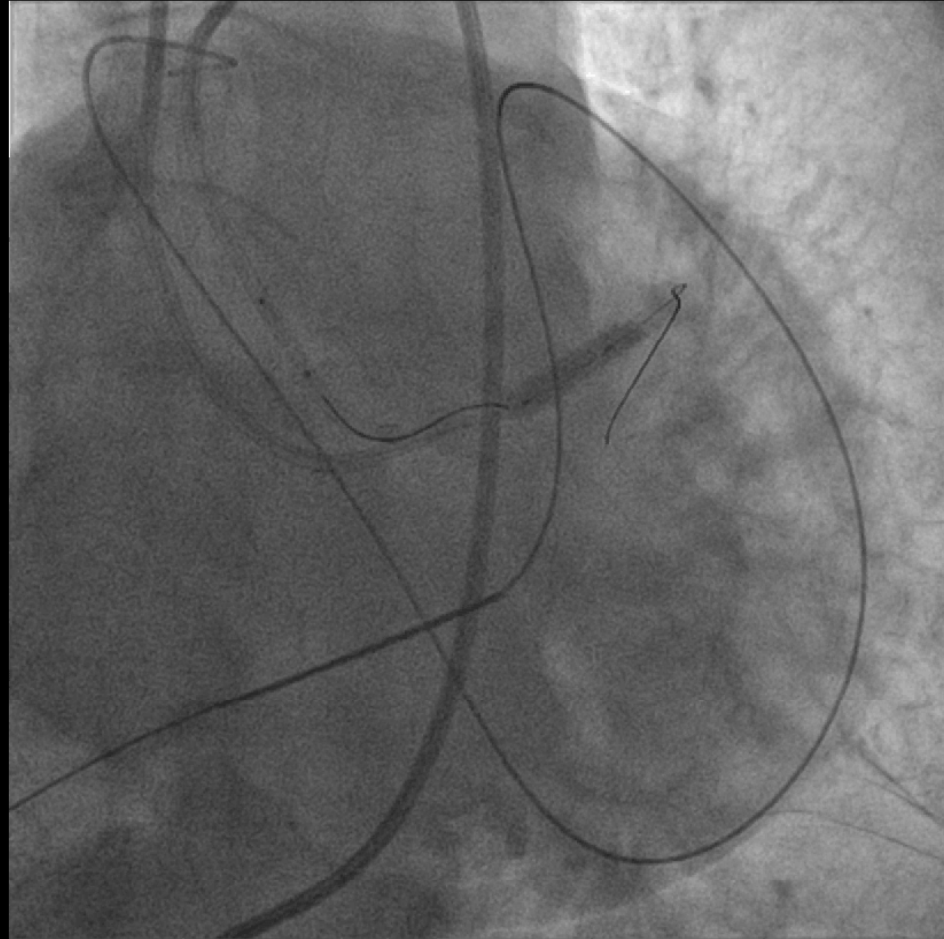
# IABP

▶ I → Inotropes

▶ A → **Aspiration**

Otherwise Blood may not come out.

Lossy Compression - not intended for diagnosis



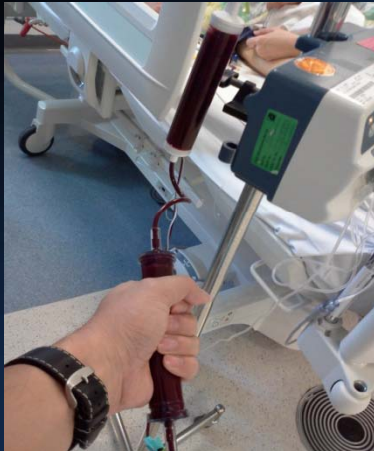




## 2<sup>nd</sup> operator and nurses

# IABP

- ▶ B → Blood transfusion
- ▶ P → **Pump set**



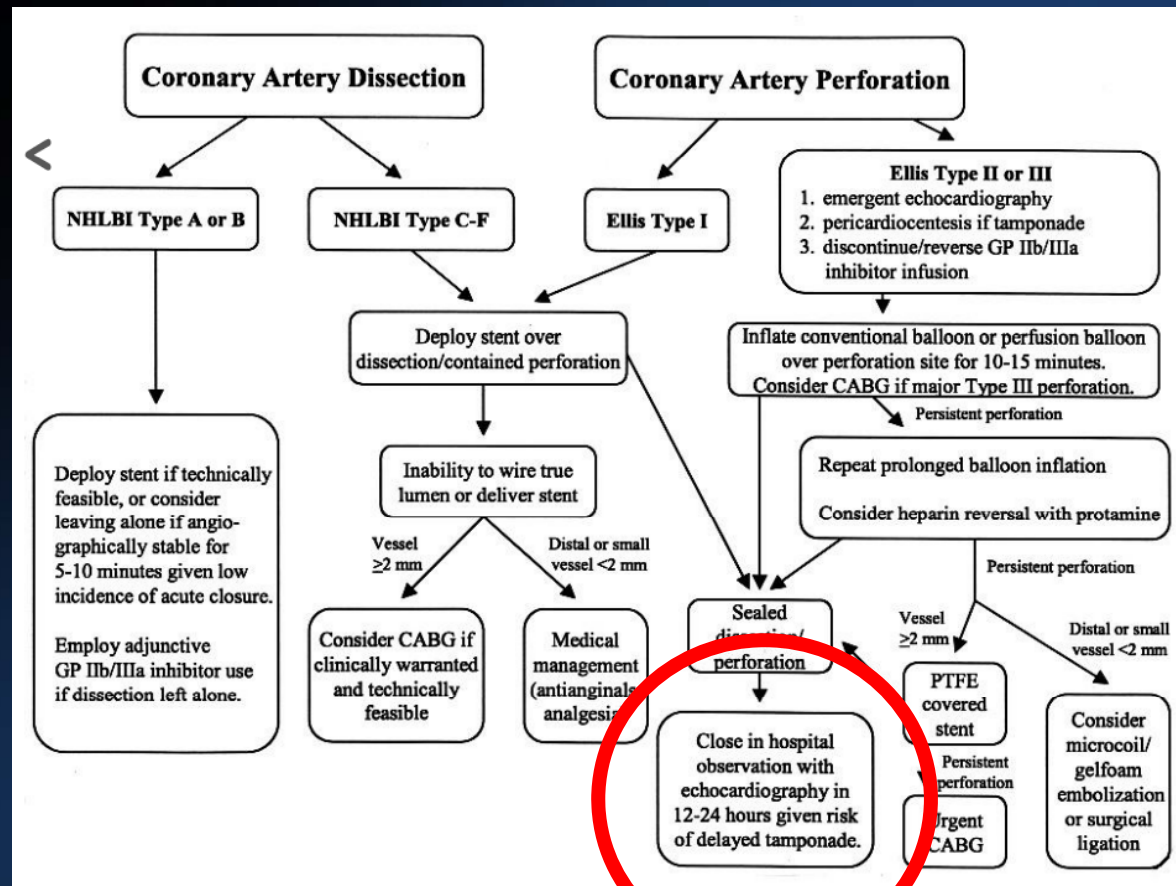
Pericardial Drainage Bag  
**1.5L in 30 mins**





# The end ?

► **NO !!!!!!!!!!!!!!!**





# Proactive Close monitoring

- By **Proactive** Close monitoring with Echo
  - Sit next to patient for at least 6 hrs.
  - Delayed tamponade is common.



2 hrs later BP ~ 107/63  
Heart Rate ~120→ 130



# Echo and **Aspiration** again



**Delayed Tamponade  
Despite pericardial drain**

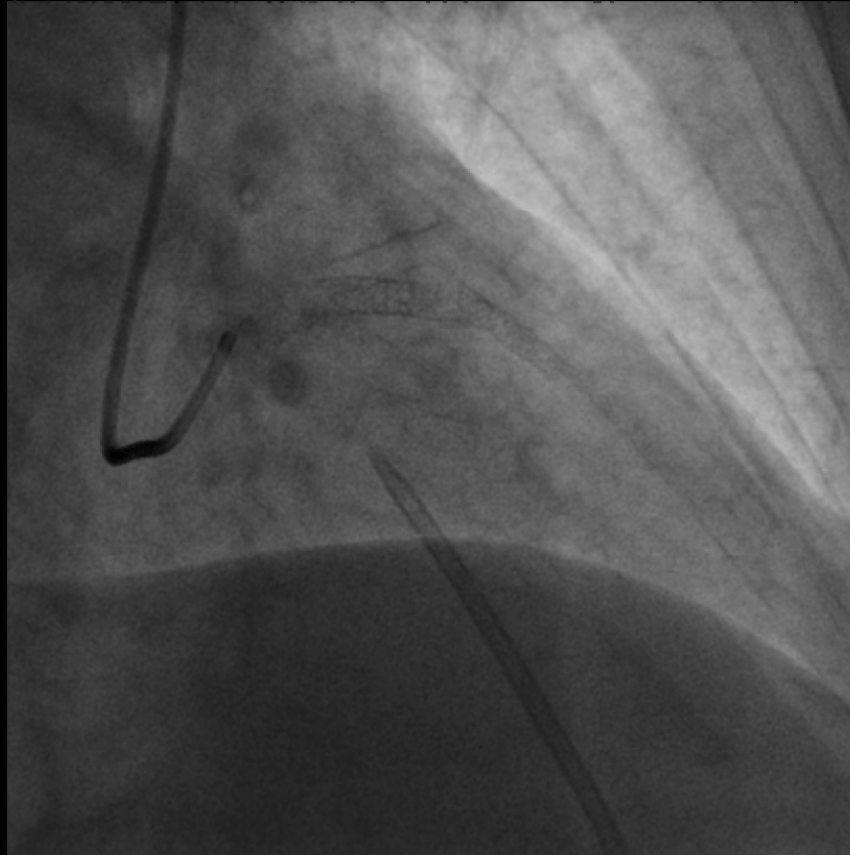


**Post **Aspiration** Again**



# Repeat Coro

Lossy Compression - not intended for diagnosis

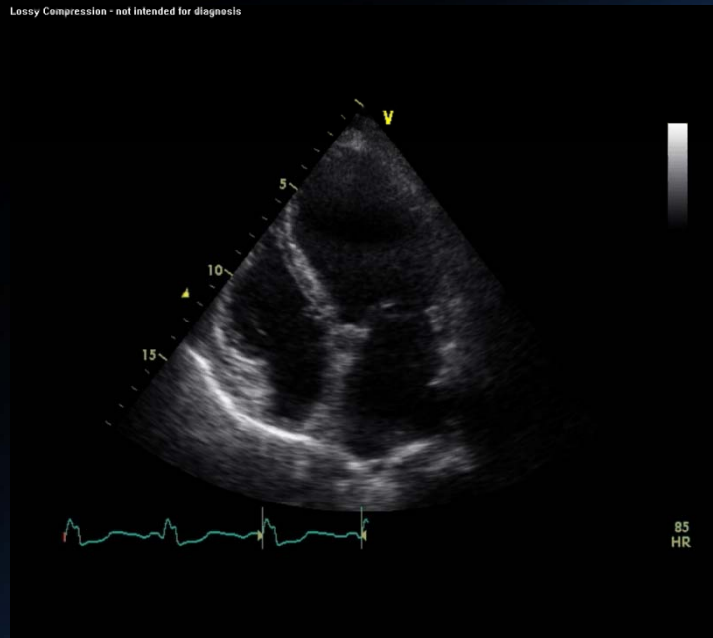


**NO Bleeding**

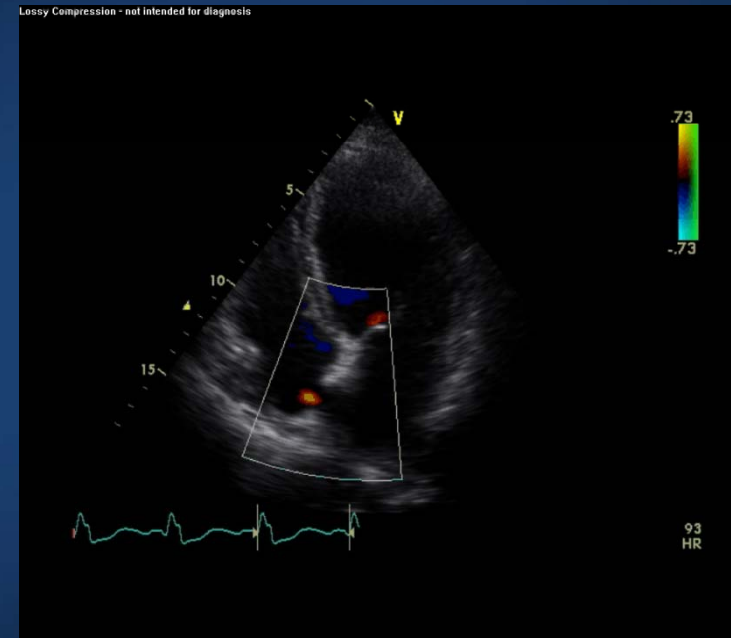




# Patient is fine till now!



**25.07.2011**  
**Before PCI**



**04.10.2011**  
**2 months**  
**Post PCI**



# Conclusion

- ▶ Prefect is the enemy of Good.
- ▶ IABP and delayed tamponade

## Voltaire

La Bégueule

*Dans ses écrits, un sàge Italien  
Dit que le mieux est l'ennemi du bien.*

A wise Italian Cardiologist said: "It is important to take into consideration that some severely calcified lesions will not expand even at high pressure. In these cases, a conservative strategy may be more appropriate than an obstinate pursuit of an optimal result."



Antonio Colombo et al J Invasive Cardiol. 2004;16(6)