



唐山工人醫院
TANGSHAN GONGREN HOSPITAL

IVUS guided stenting of LAD diffuse long lesions

Clinical School of Hebei Medical University
Affiliated Hospital of Hebei United University
Tangshan Gongren Hospital
唐山工人医院, P.R. China

Zheng Ji, MD



History

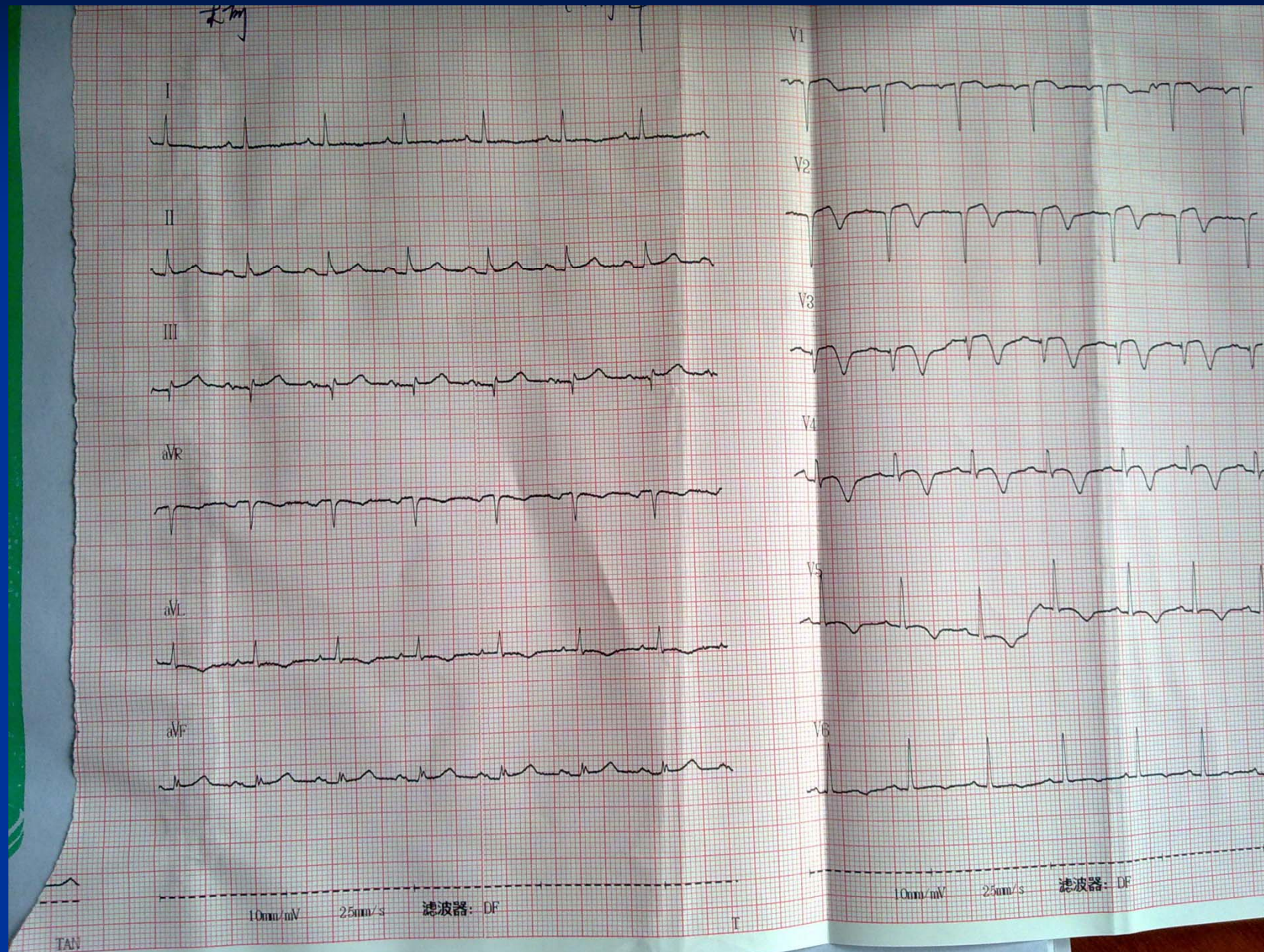
- Male, 67y
- Chief complain: Onset of chest pain and stuffy for seven years, worsening over the past two days.
Admitted time: 2011-10-3

Risk factors

- Hypertension ten years, BP (max) : 160/120mmHg, BP controlled not well with nifedipine
- Smoking history ten years, 20 cigarettes/day, now have quitted five years
- No history of Diabetes



ECG(2011-10-3 in CCU)



Relative Laboratory tests

- Troponin-I:1.36ng/ml(H)
- CK-MB:65u/L(H);CK:540u/L(H)
LDH:246u/L(H);AST:83u/L(H)

UCG(CCU bed side):

LA:25mm,LV48mm,EF65%, left ventricular diastolic function decreased



Diagnosis

Coronary heart disease

acute anterior myocardial infarction

cardiac function grade 1(killip class)

Hypertion grade 3(severe)



Regimen

**Load dose as admitted: Plavix 300mg, Aspirin 300mg,
Atorvastatin 80mg**

- **Plavix 75mgQD**
- **Atorvastatin 40mg QN**
- **Asprin 100mg QN**
- **Nifedipine 30mgQD**
- **Valsartan 80mgQN**
- **Bisoprolol 2.5mgQD**
- **Isosorbide mononitrate 60mgQD**
- **Low molecular weight heparin calcium 0.4ml:
Subcutaneous injection 1/12h**

Strategy

- From the symptom appeared to CCU, it has been about forty-eight hours, and he has no chest pain and stuffy and no other symptoms.
- So we decided to give him a selective coronary angiography.



Diagnostic coronary angiography 2011-10-8, 5 days after admitted

- mRCA 40-50%,dRCA 50-60% stenosis
- pLAD diffuse stenosis 70-95%,pD1 80%
- pLCX 30-50% mLCX 60-90% stenosis



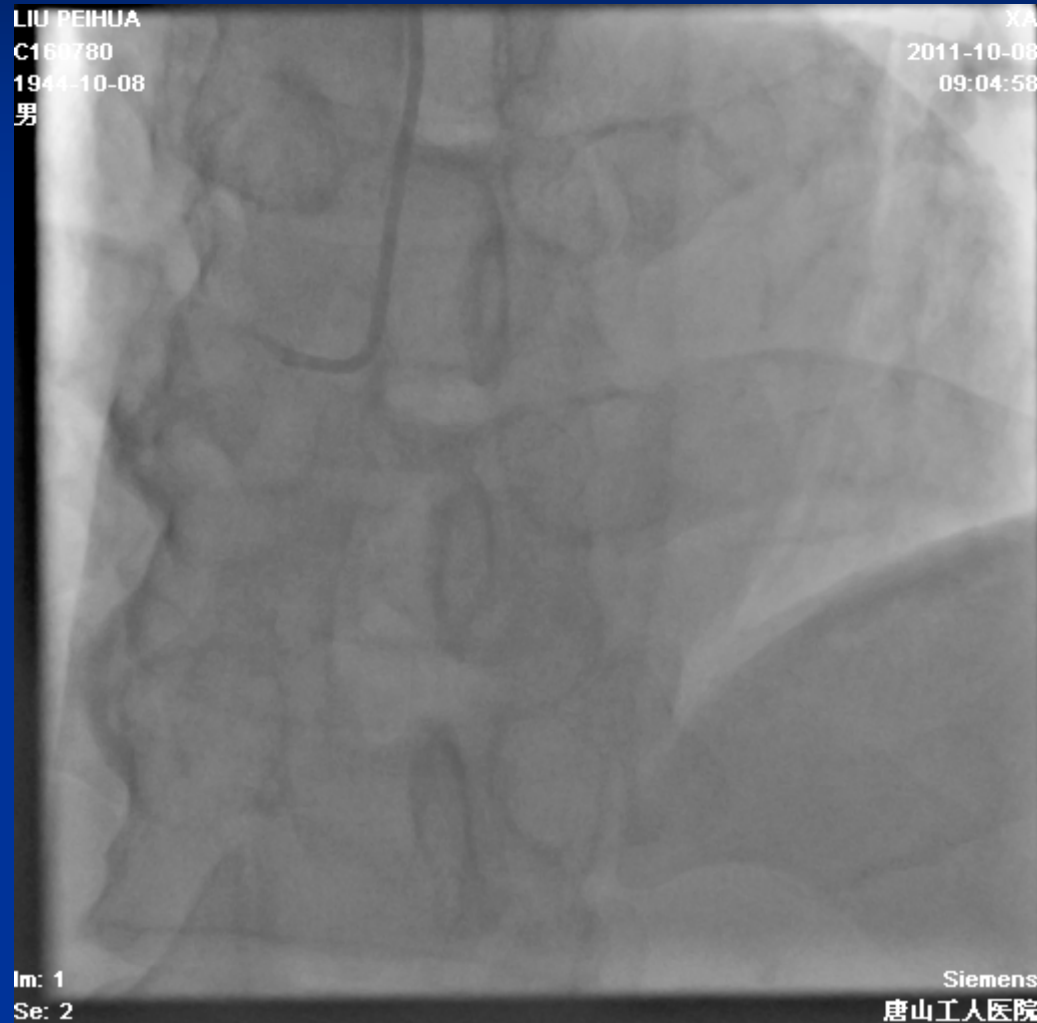
Diagnostic coronary angiography





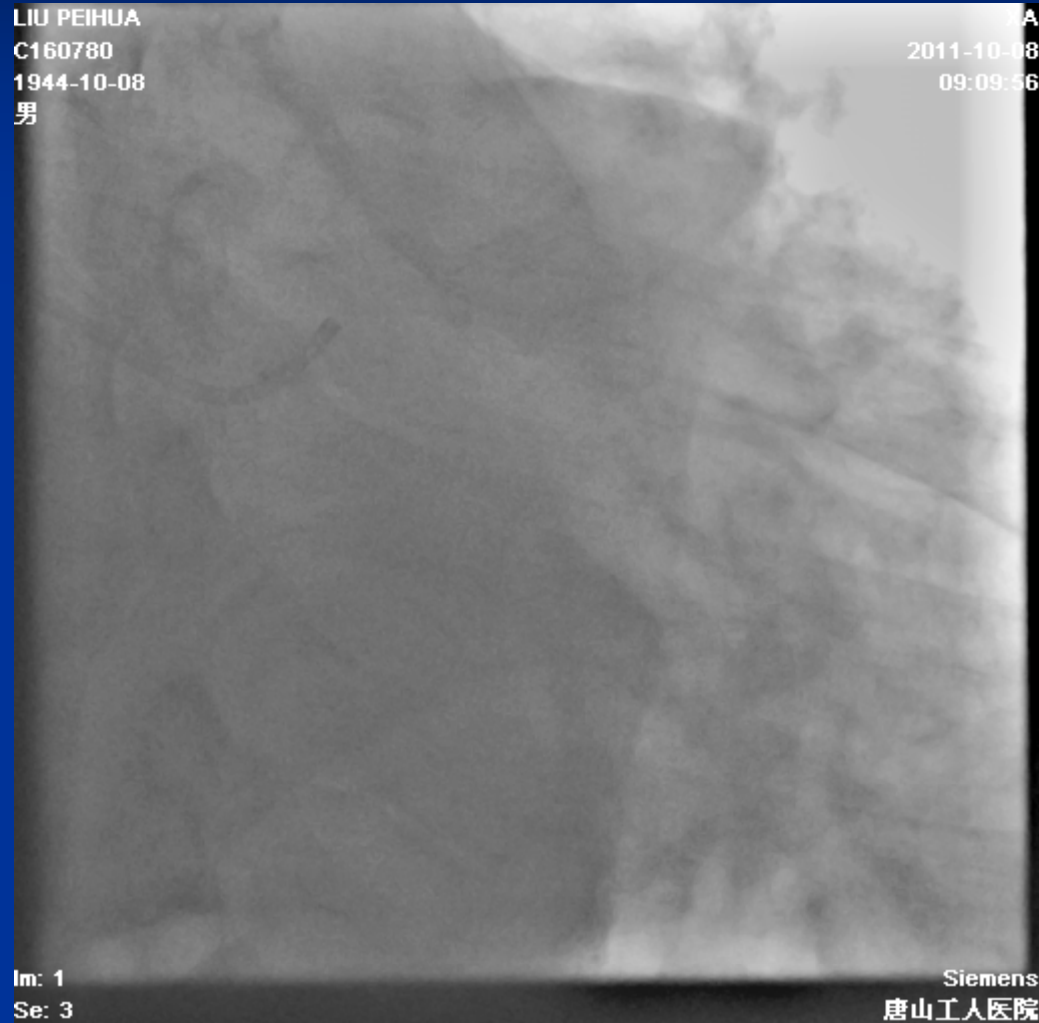
唐山工人醫院
TANGSHAN GONGREN HOSPITAL

Diagnostic coronary angiography



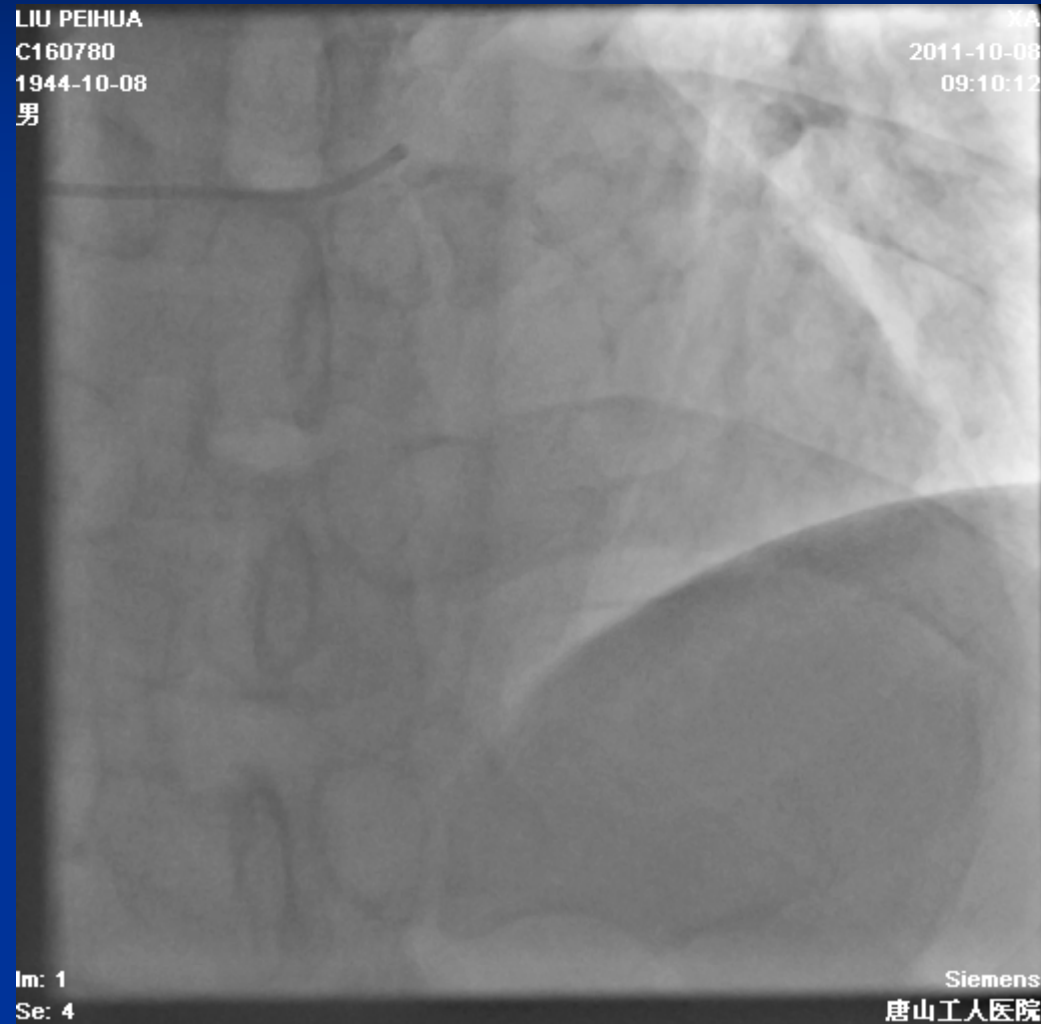


Diagnostic coronary angiography



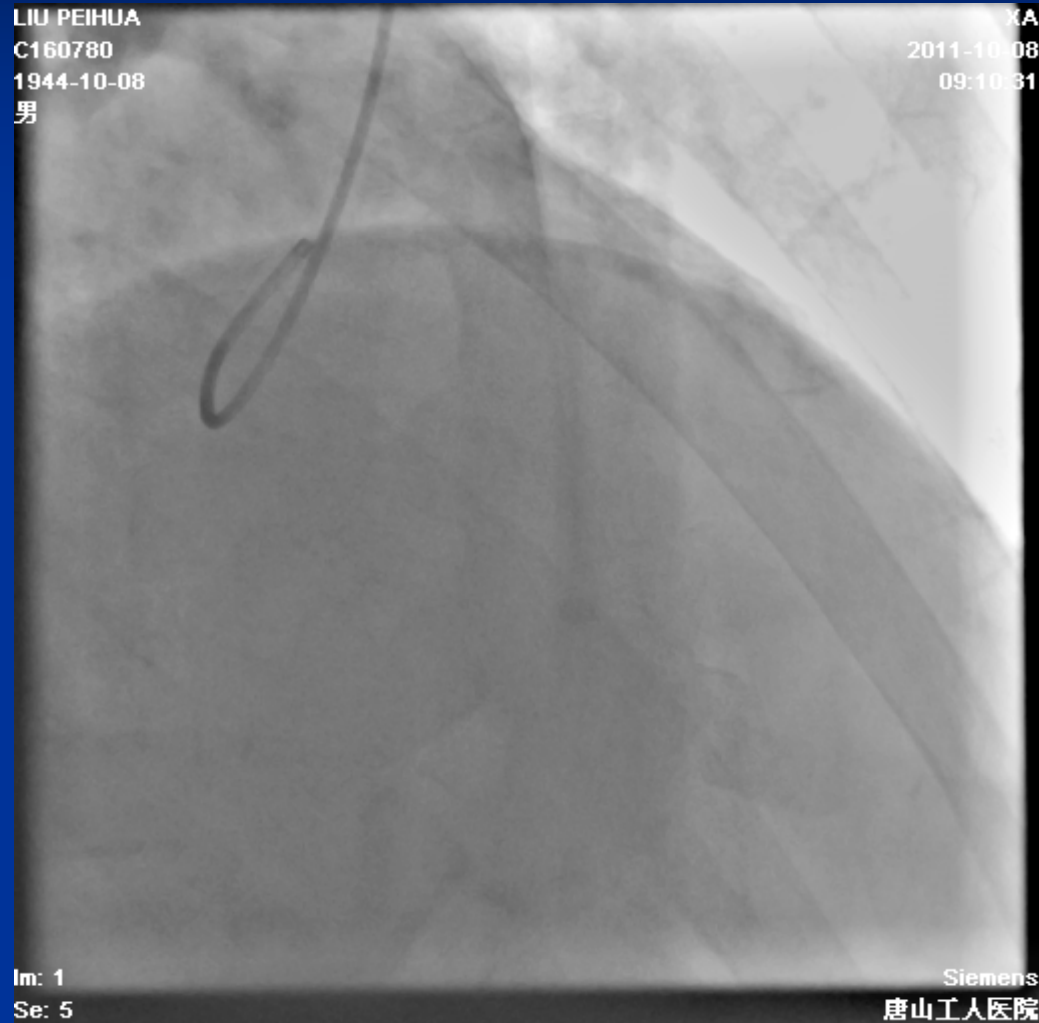


Diagnostic coronary angiography





Diagnostic coronary angiography



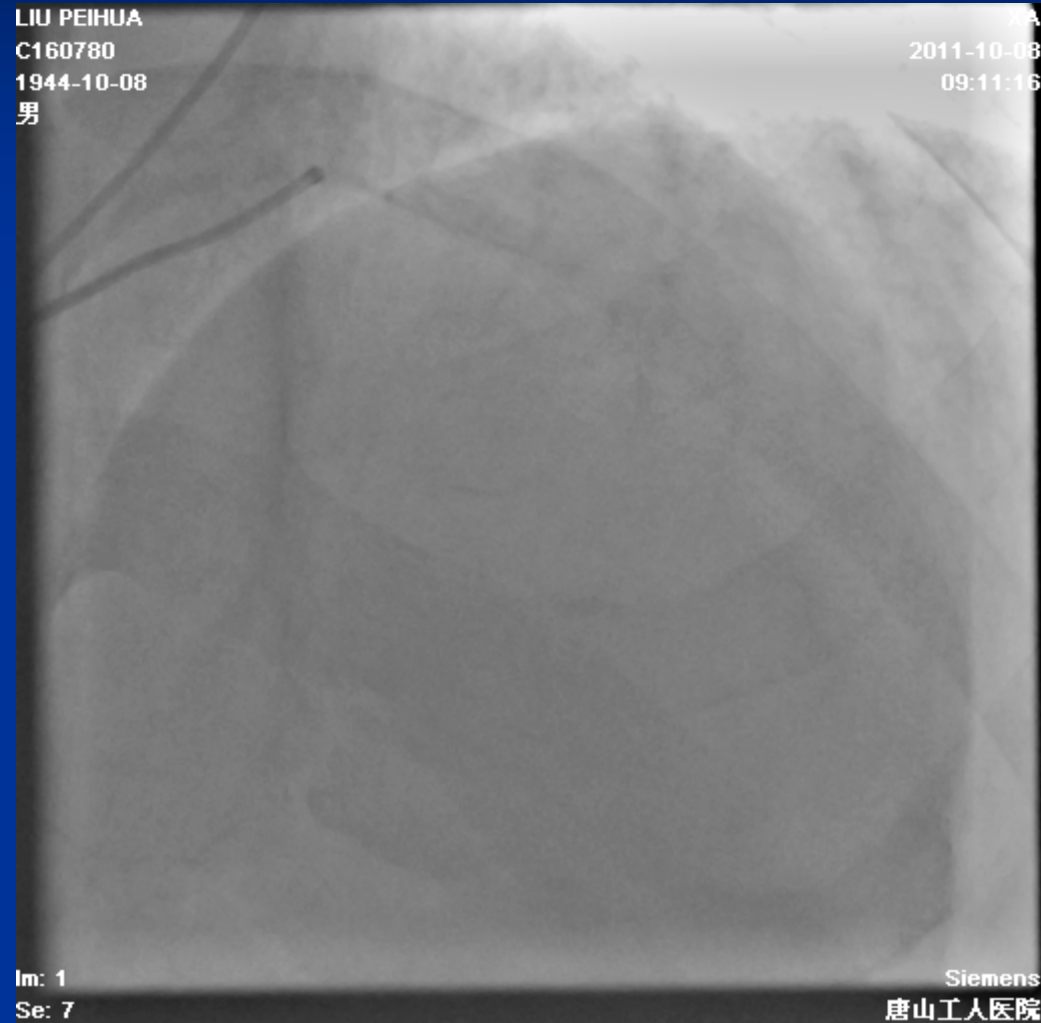


Diagnostic coronary angiography





Diagnostic coronary angiography



What's strategy for this patient?



CABG or PCI?



What's strategy for this patient?

From the angiogram, we find the proximal of LAD is a diffuse long lesion, so if we want to solve the long lesion by PCI, the best way is guided by IVUS .

Because we don't know the morphology of the pLAD plaque and the degree of calcified, meanwhile we also don't be sure where does the plaque stretched to? If the LM also has heavy plaque burden?

During the PCI once dissection occurs, IVUS can discover it immediately, thus decreased the risk of PCI. And IVUS help us acquire good stent expansion.

Strategy

So IVUS was adopted during the process of PCI

Before PTCA, we use IVUS to evaluate the condition of the LAD vessel, and when all stents were implanted, we should use IVUS to evaluate it again to make sure whether the stents have good position, whether it has dissection, thrombus, and whether all stents have cover all the lesions and so on.



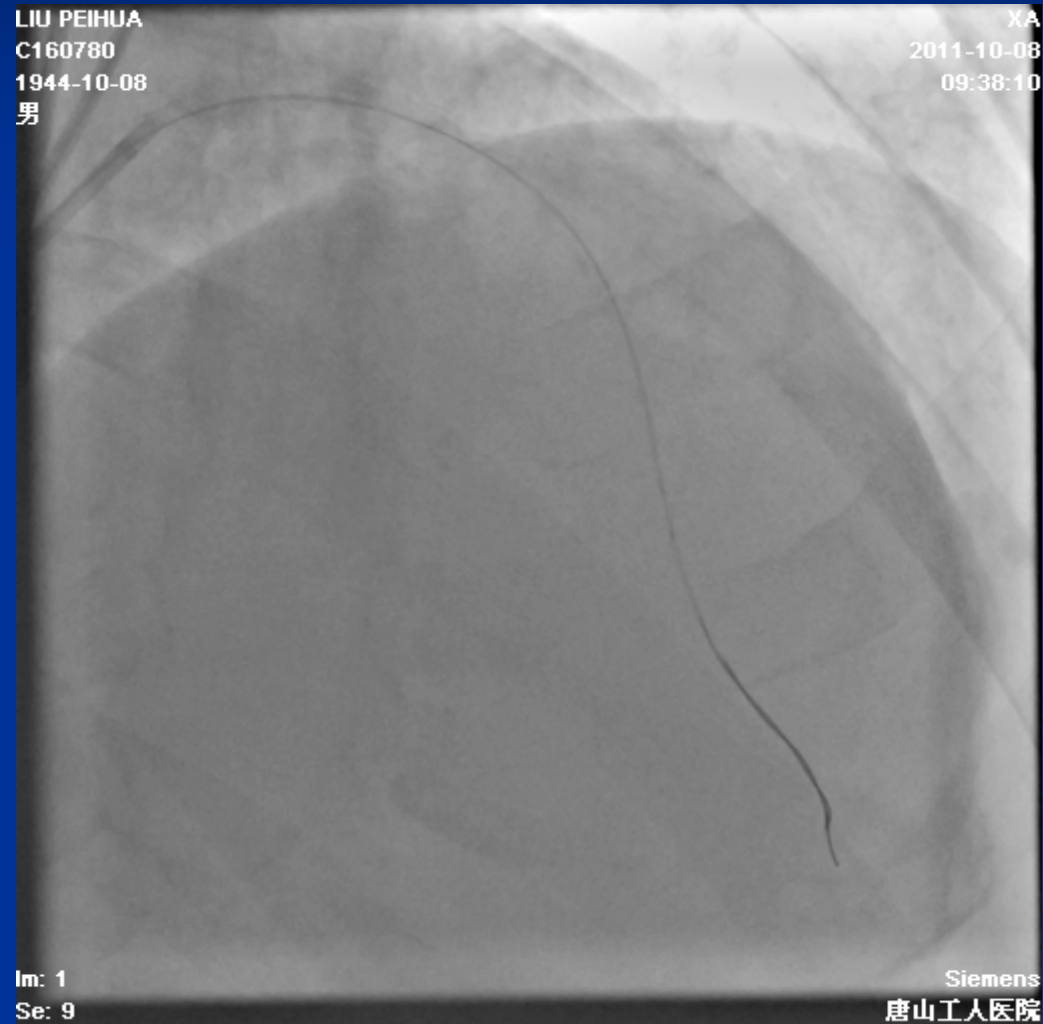
Procedure of PCI

- Approach: Trans-right Femoral Artery
- GC: 6F EBU3.5
- GW: 0.014"BMW、0.014PILOT50
- pre-dilated balloon: RYUJIN 2.5x20mm;
- post-dilated balloon: KONGOU 3.5x10mm
- Stent YINYI 2.75x28mm
- YINYI 3.5x23mm;
- YINYI 3.5x18mm

-



Procedure of PCI

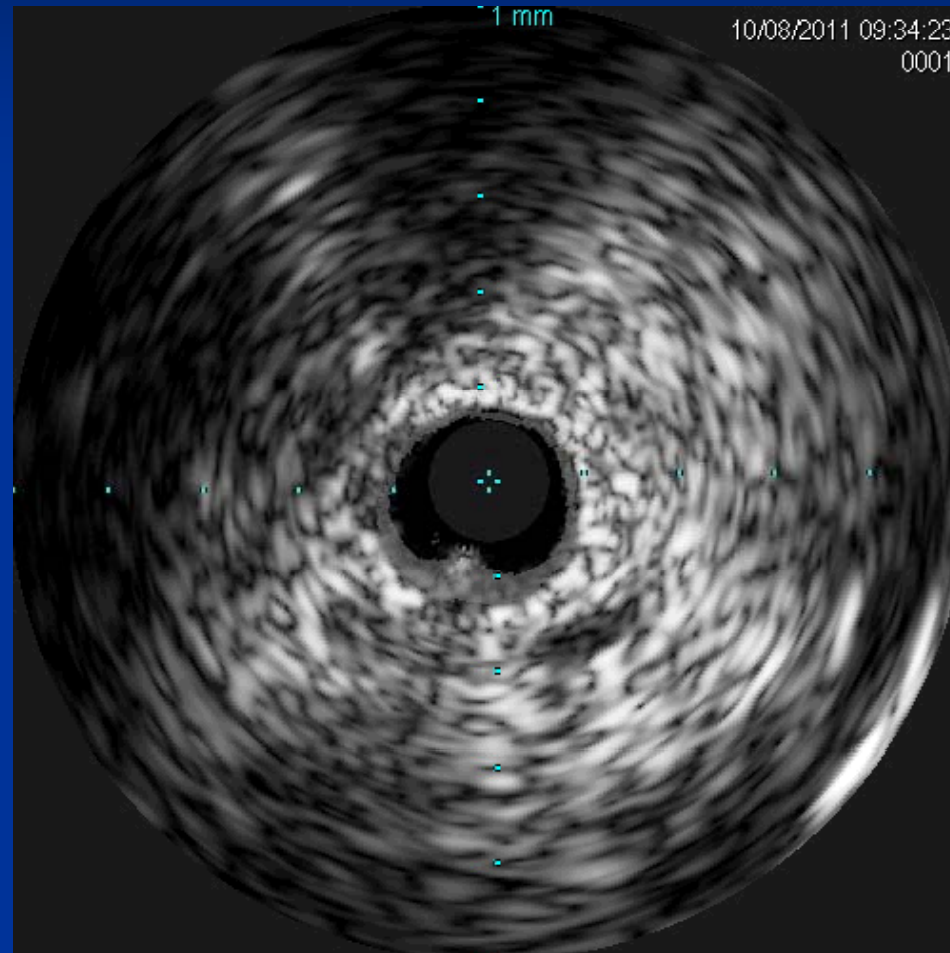




Procedure of PCI Before PTCA, IVUS confirm

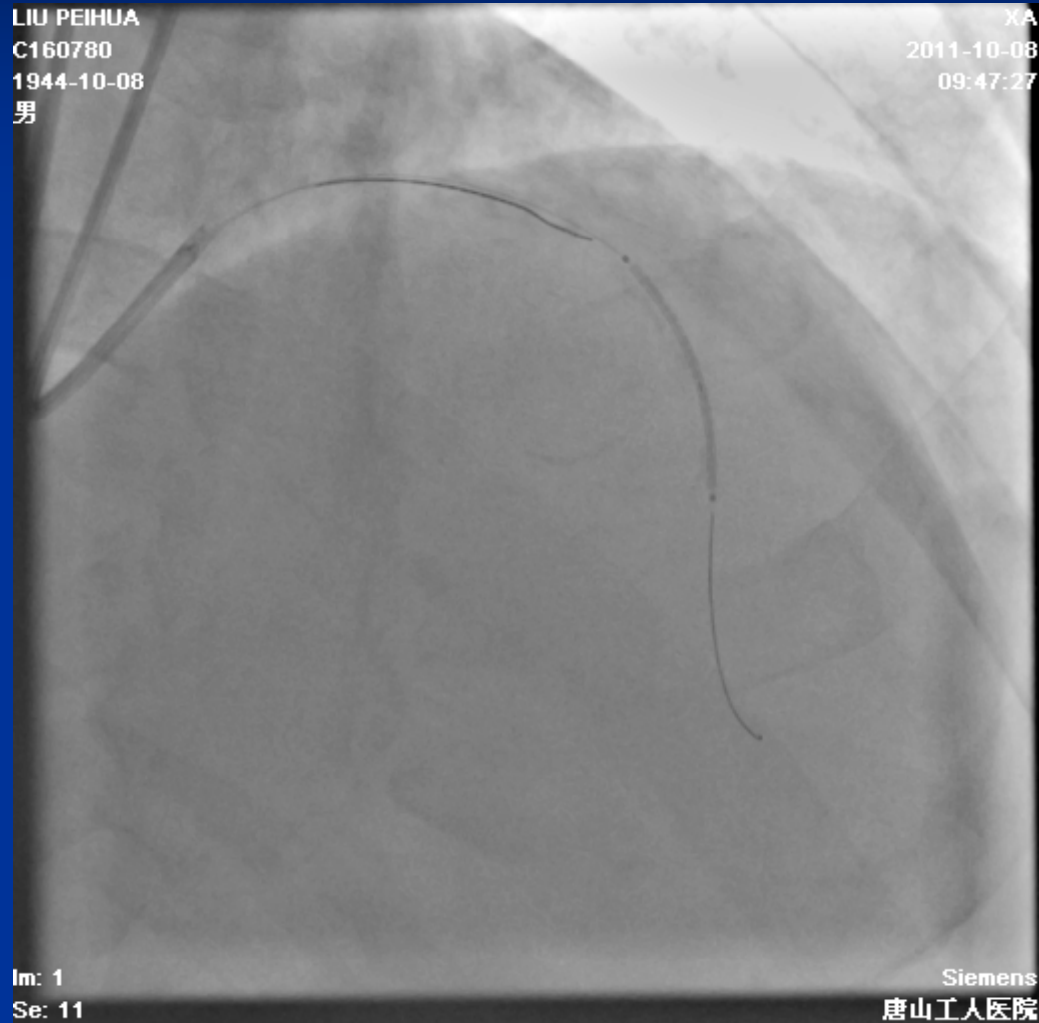


IVUS Check



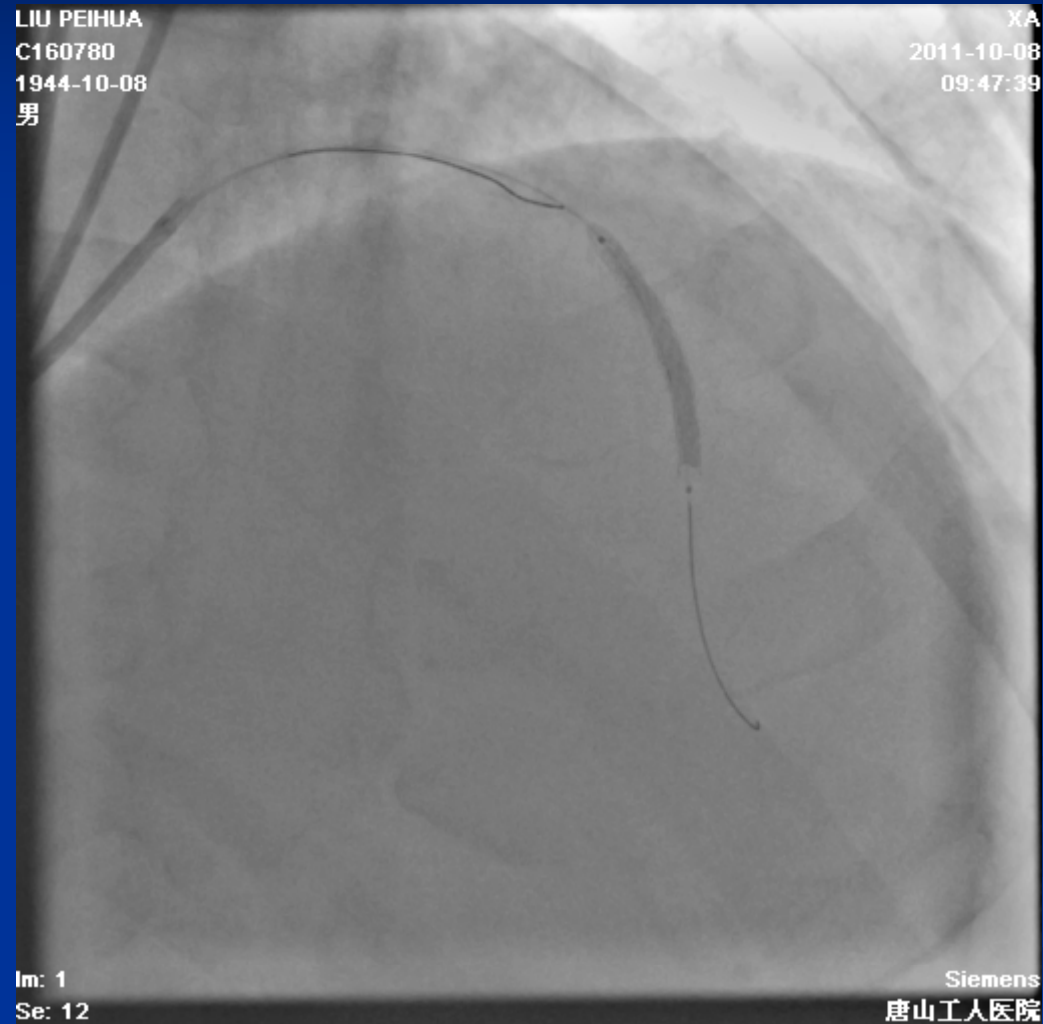


Procedure of PCI



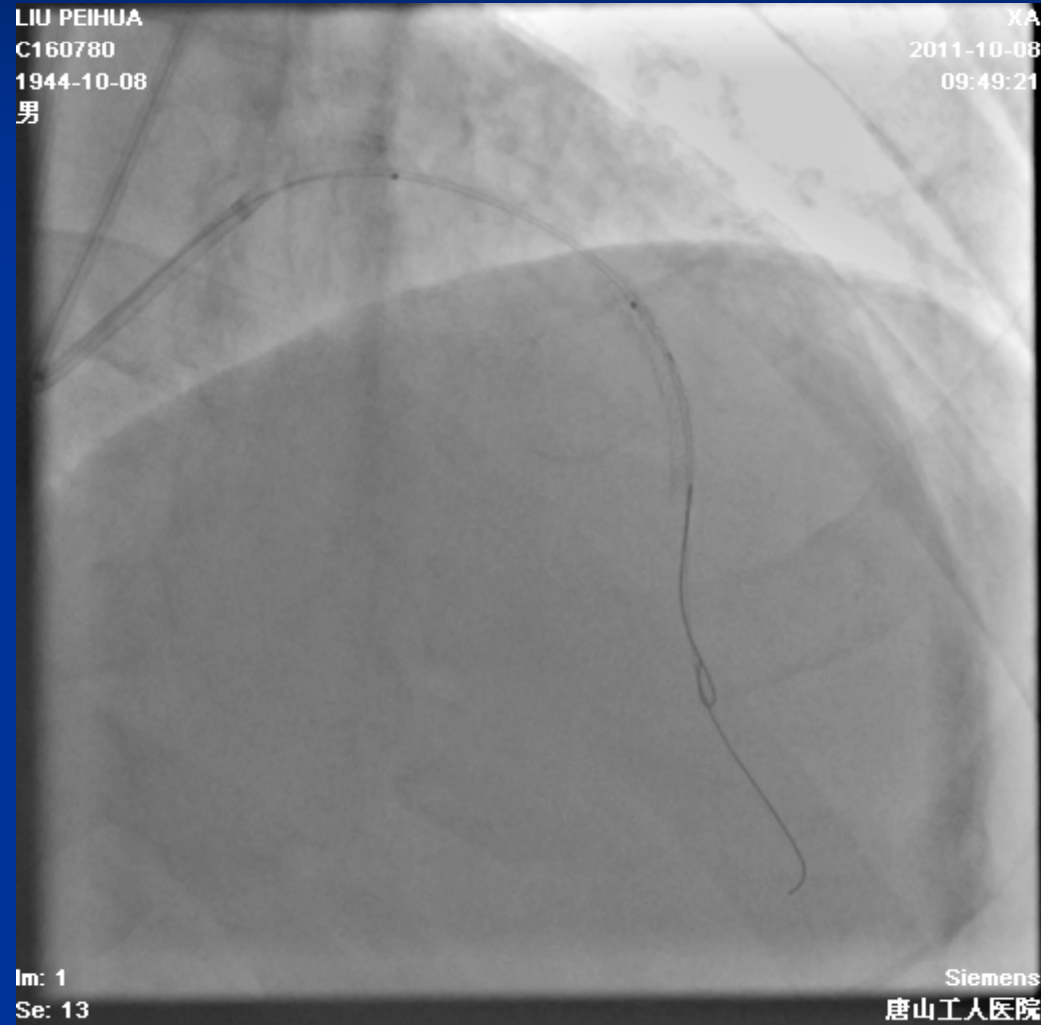


Procedure of PCI





Procedure of PCI



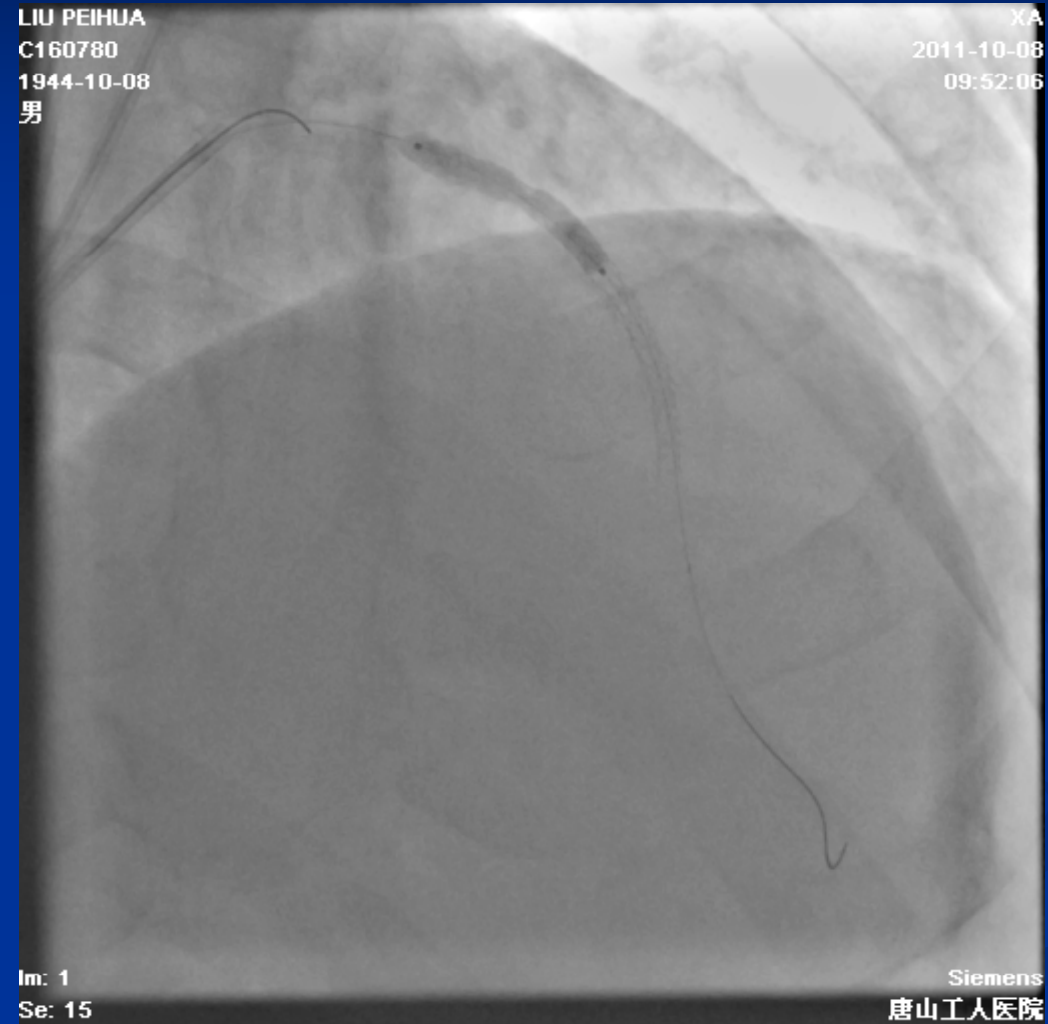


Procedure of PCI



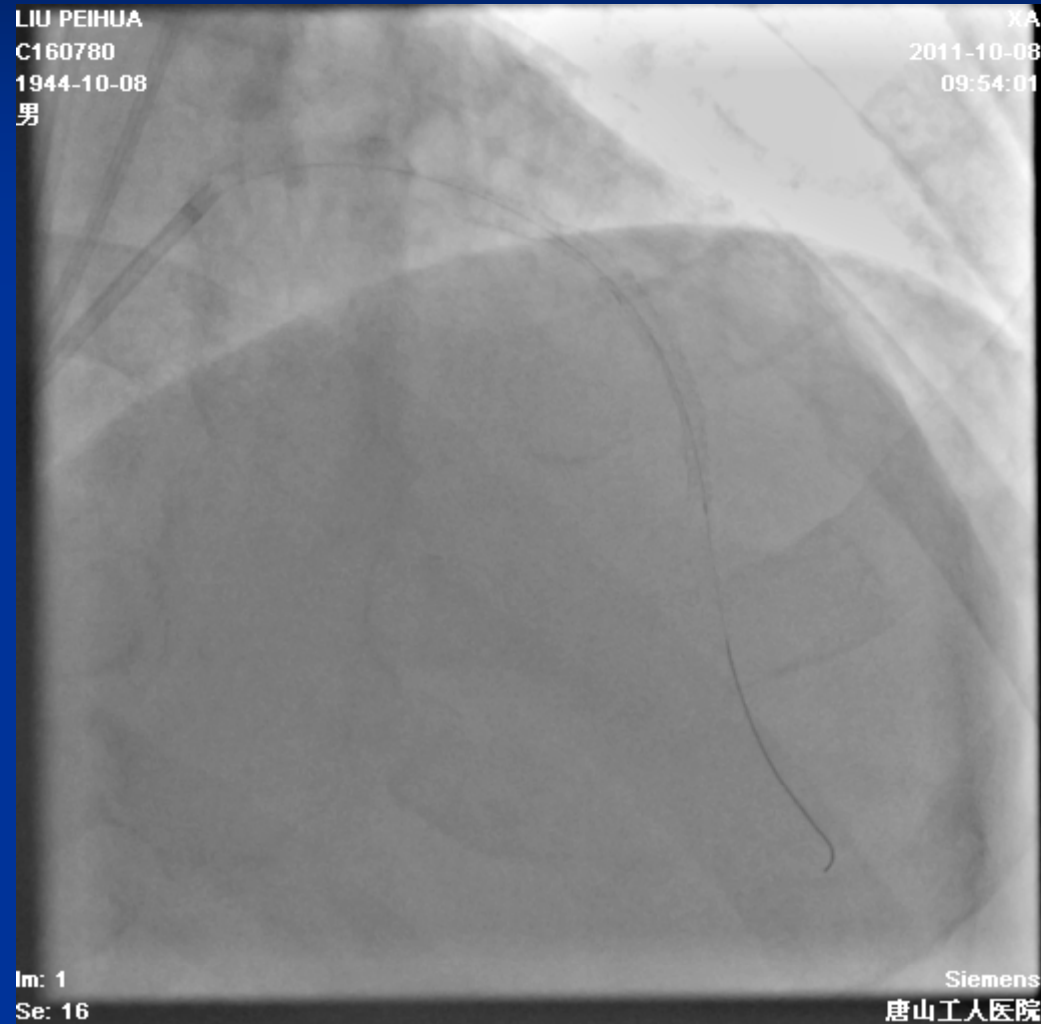


Procedure of PCI



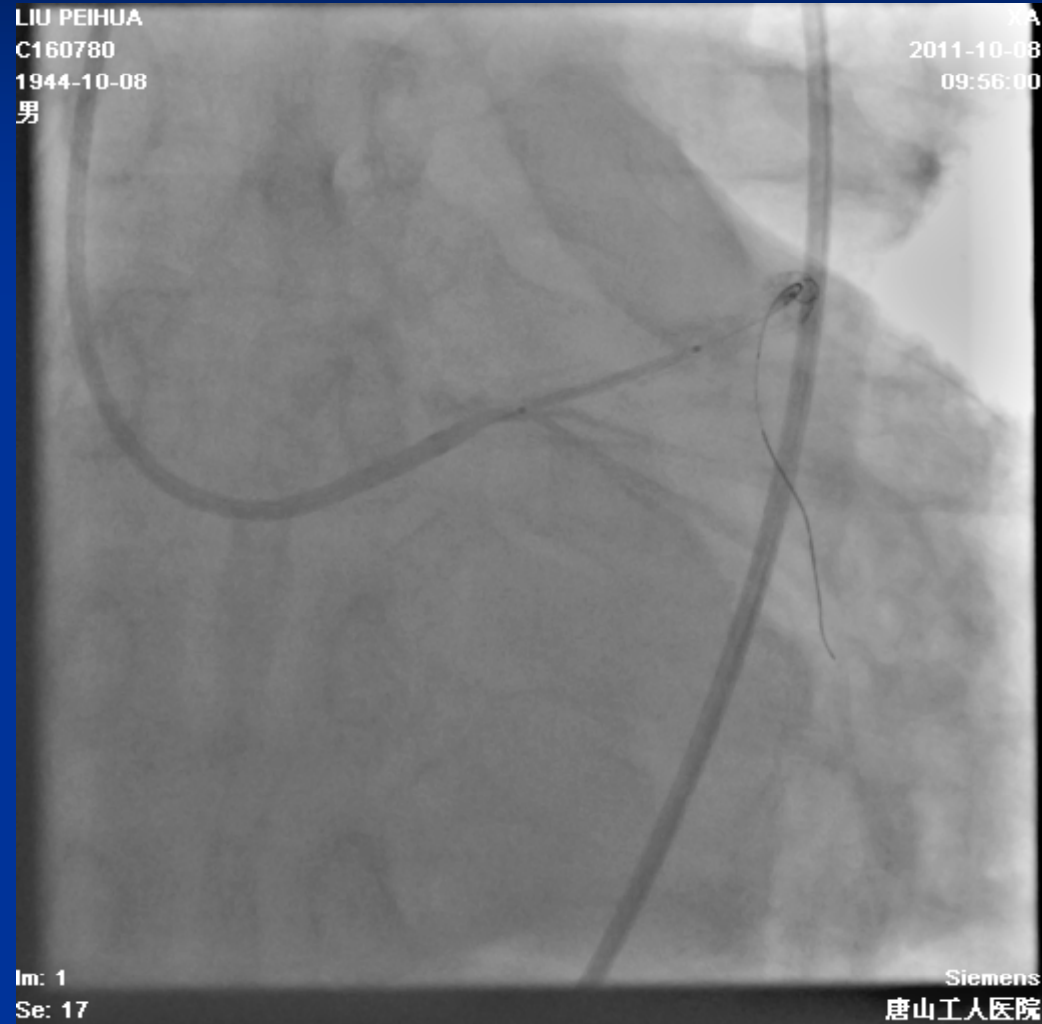


Procedure of PCI



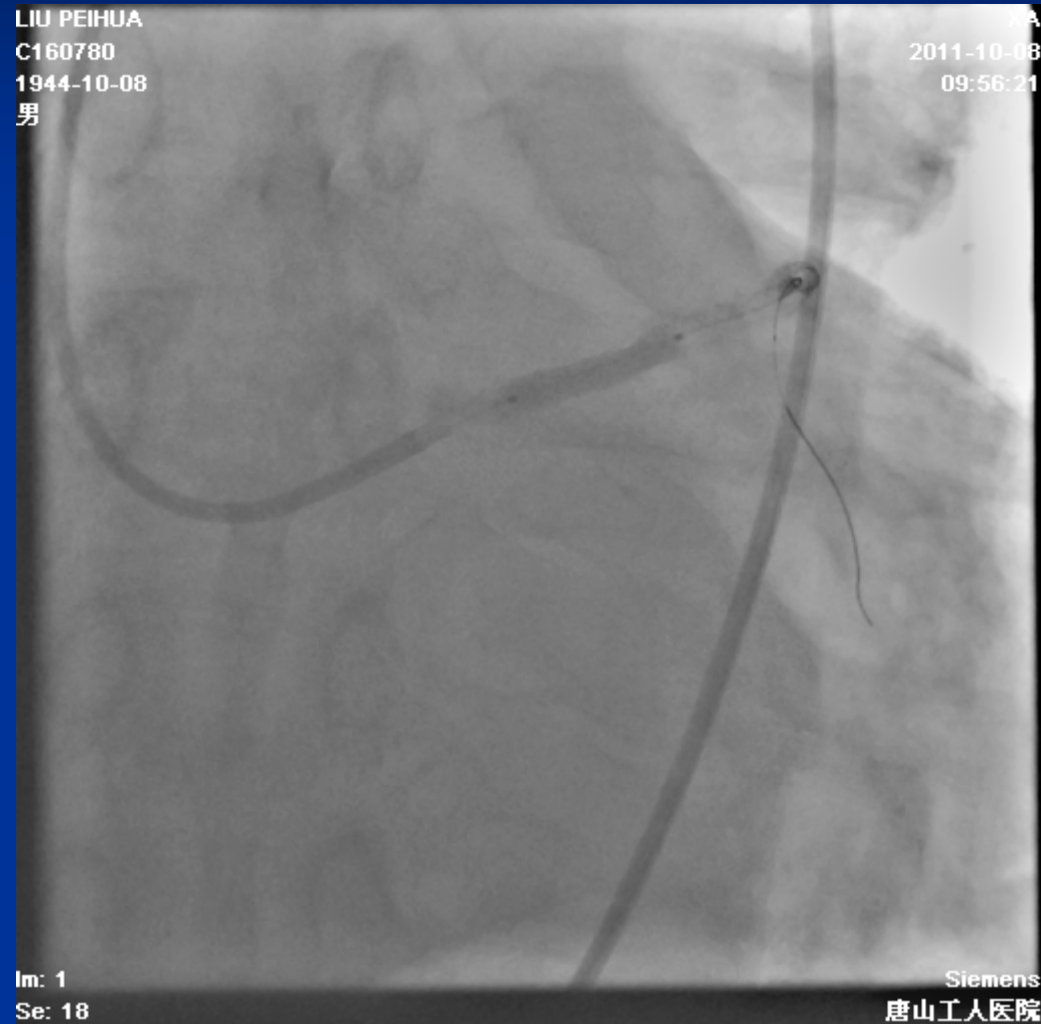


Procedure of PCI



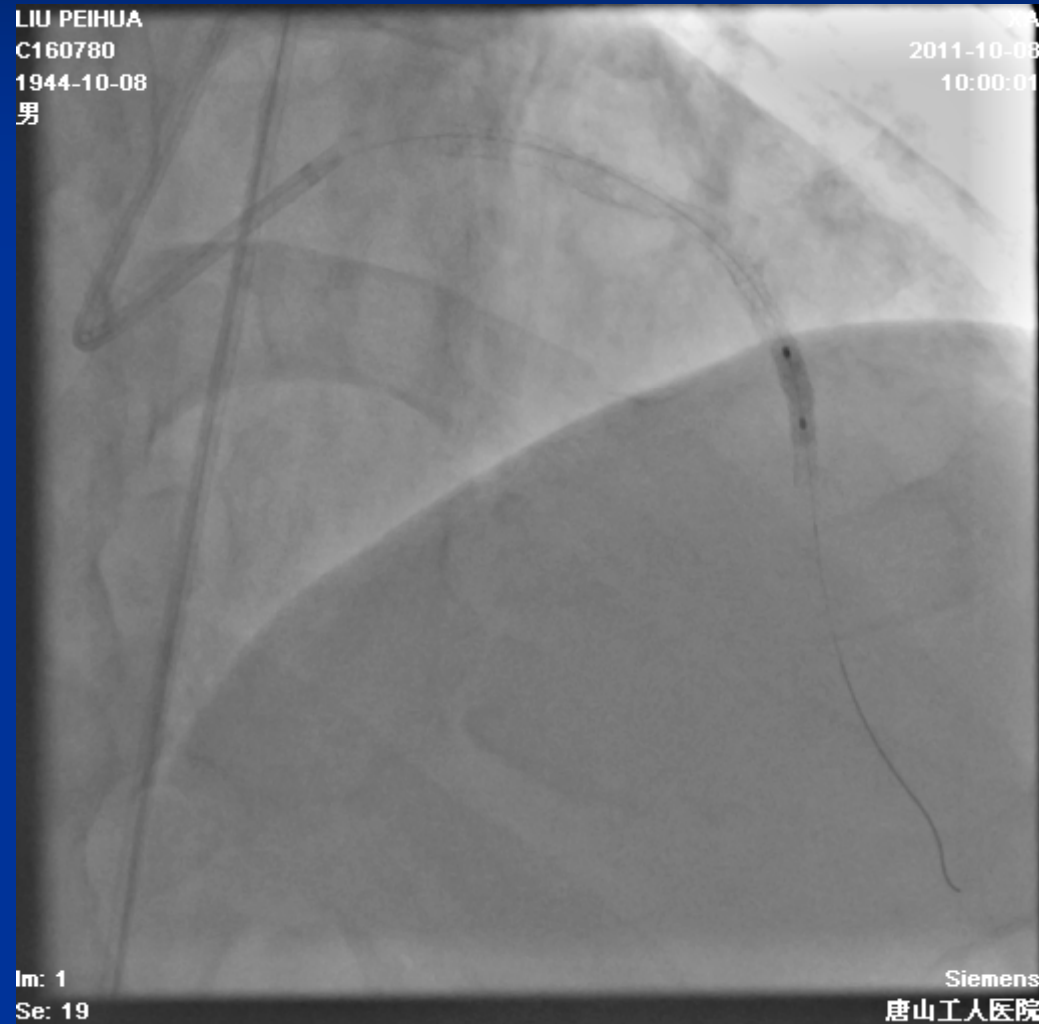


Procedure of PCI



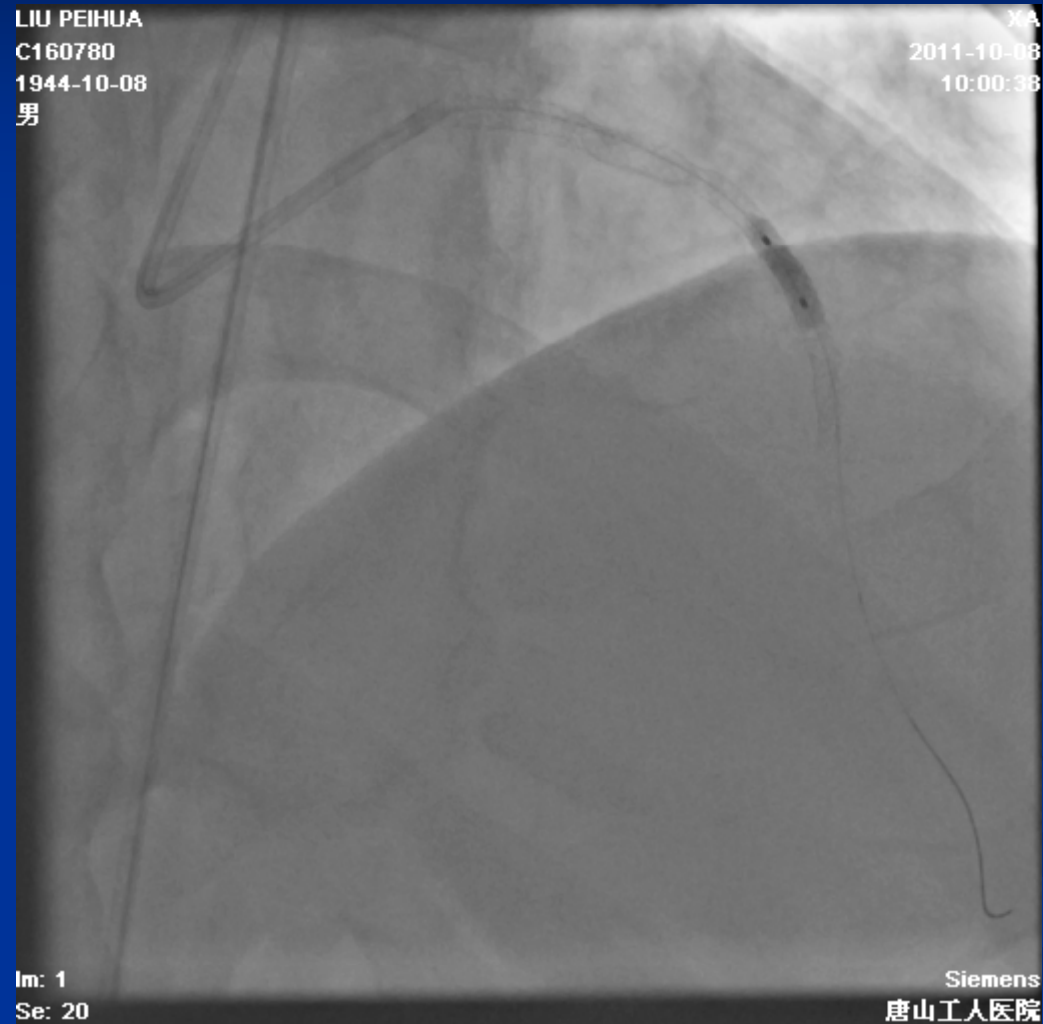


Procedure of PCI





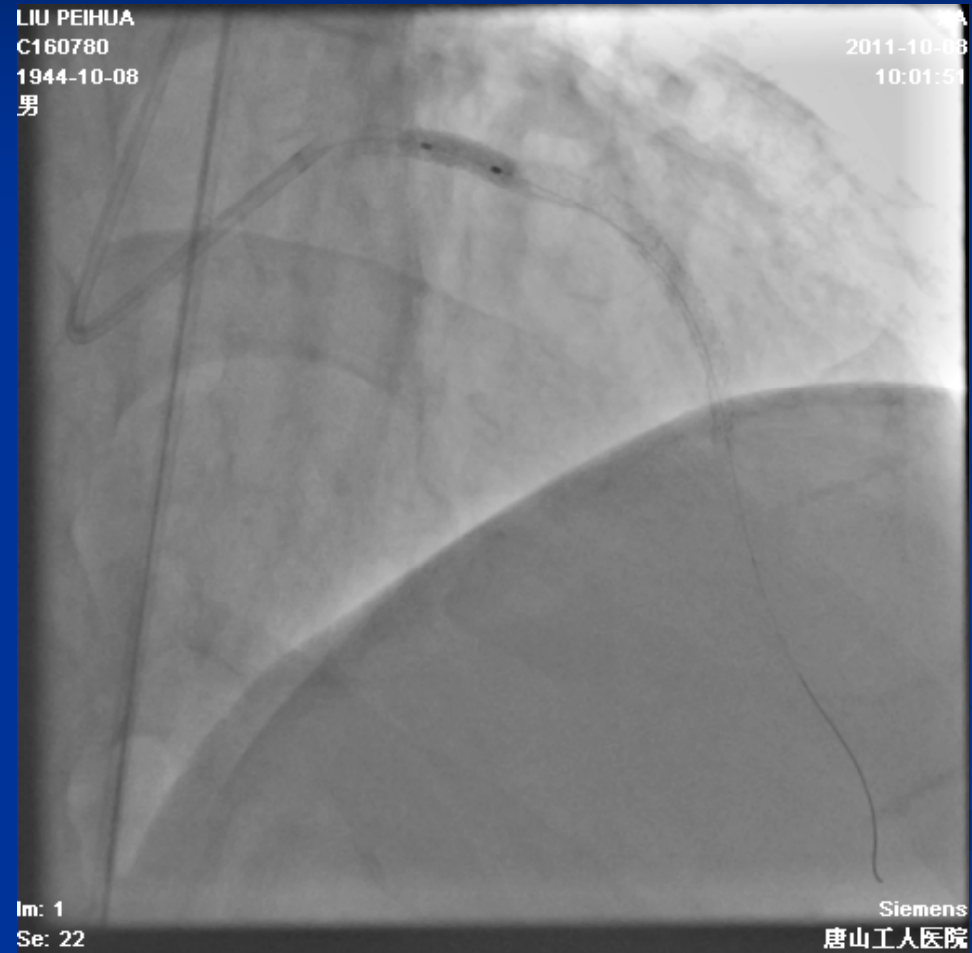
Procedure of PCI



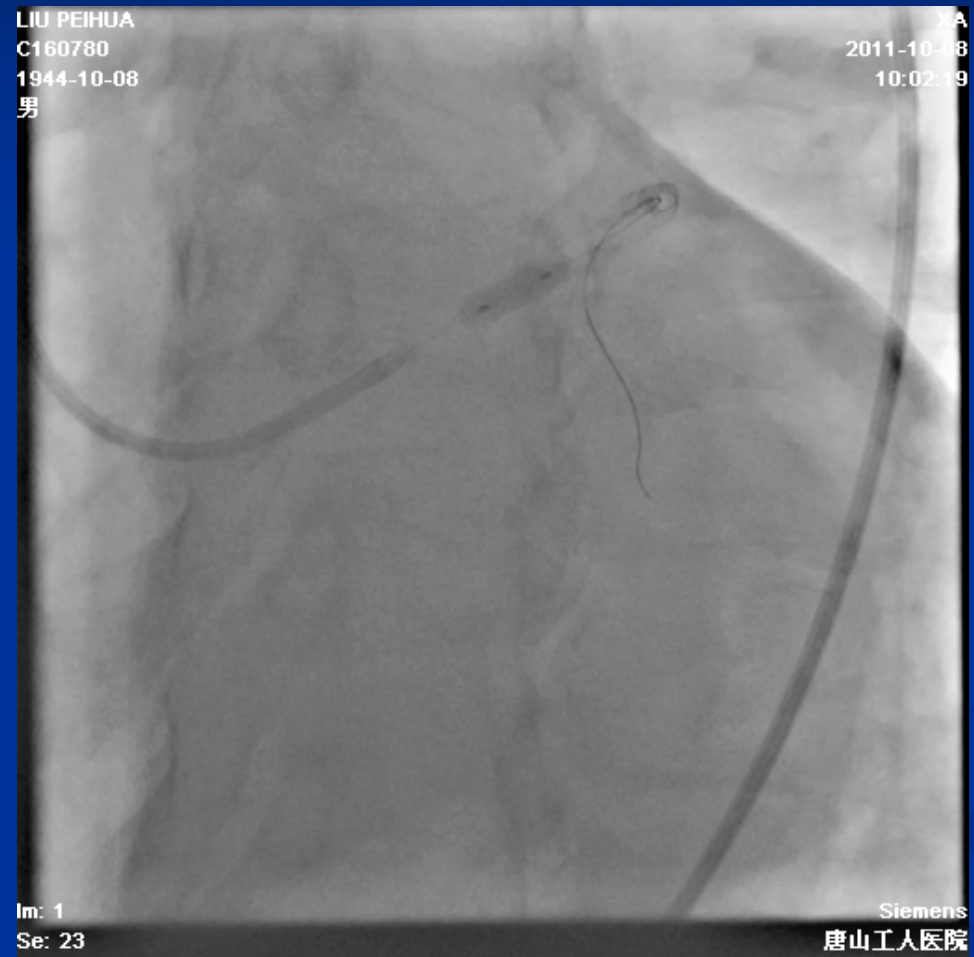
Procedure of PCI



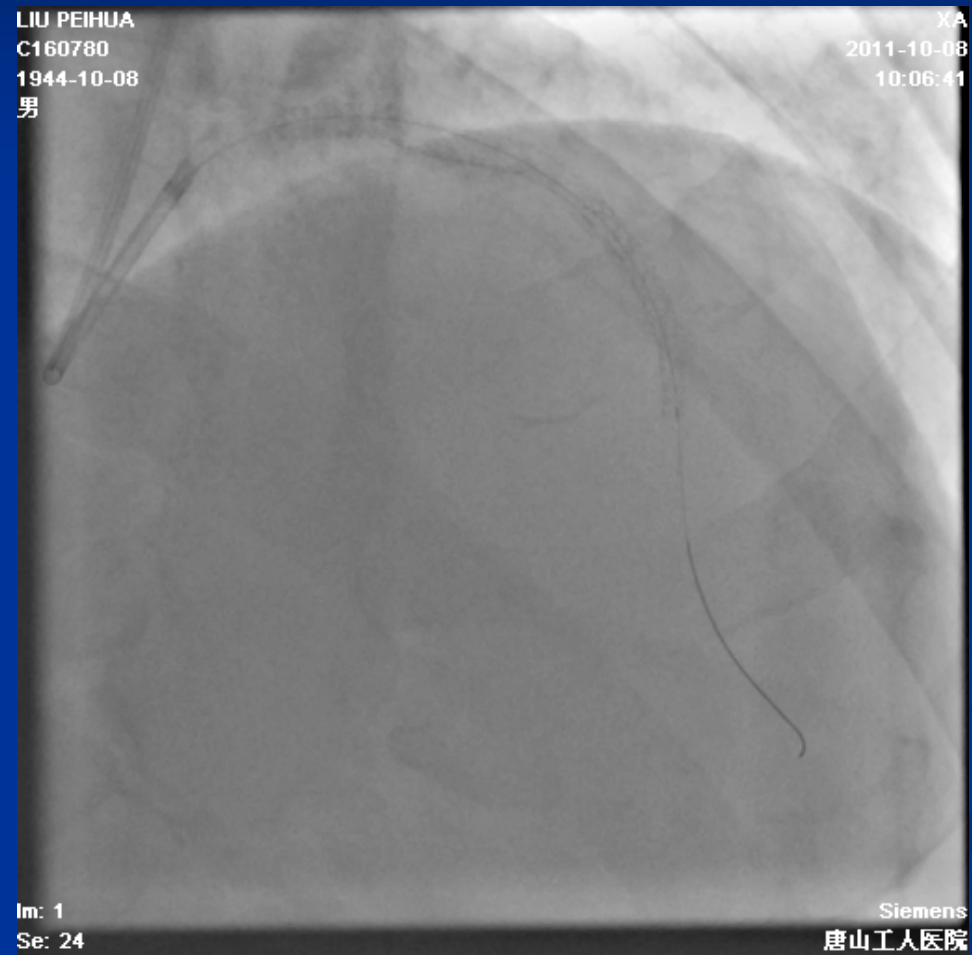
Procedure of PCI



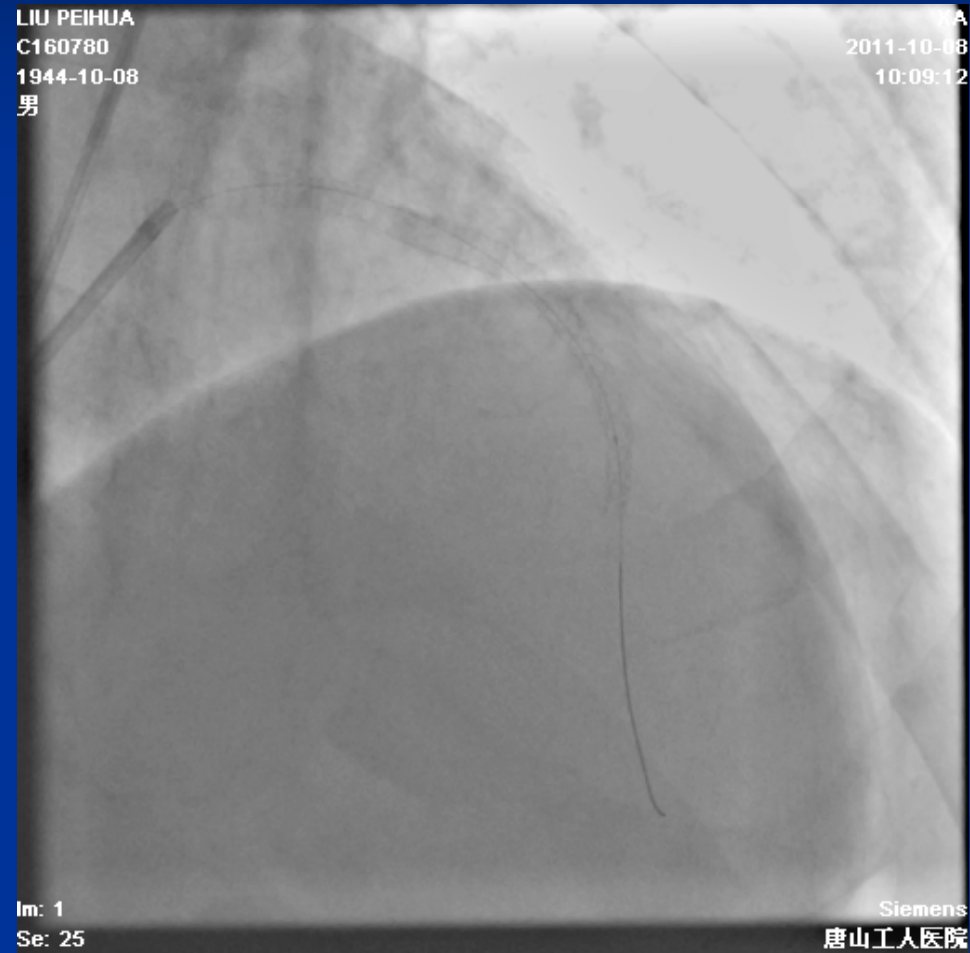
Procedure of PCI



Procedure of PCI



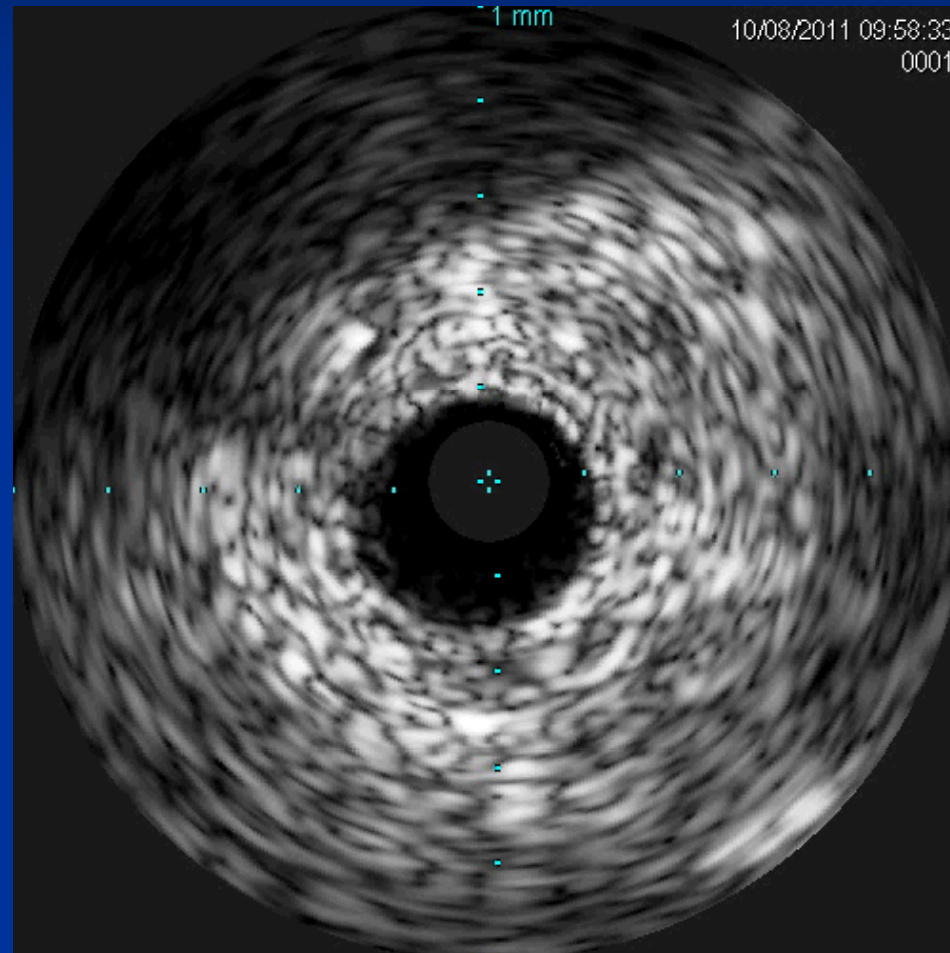
Procedure of PCI



IVUS check the situation of stents



IVUS Recheck

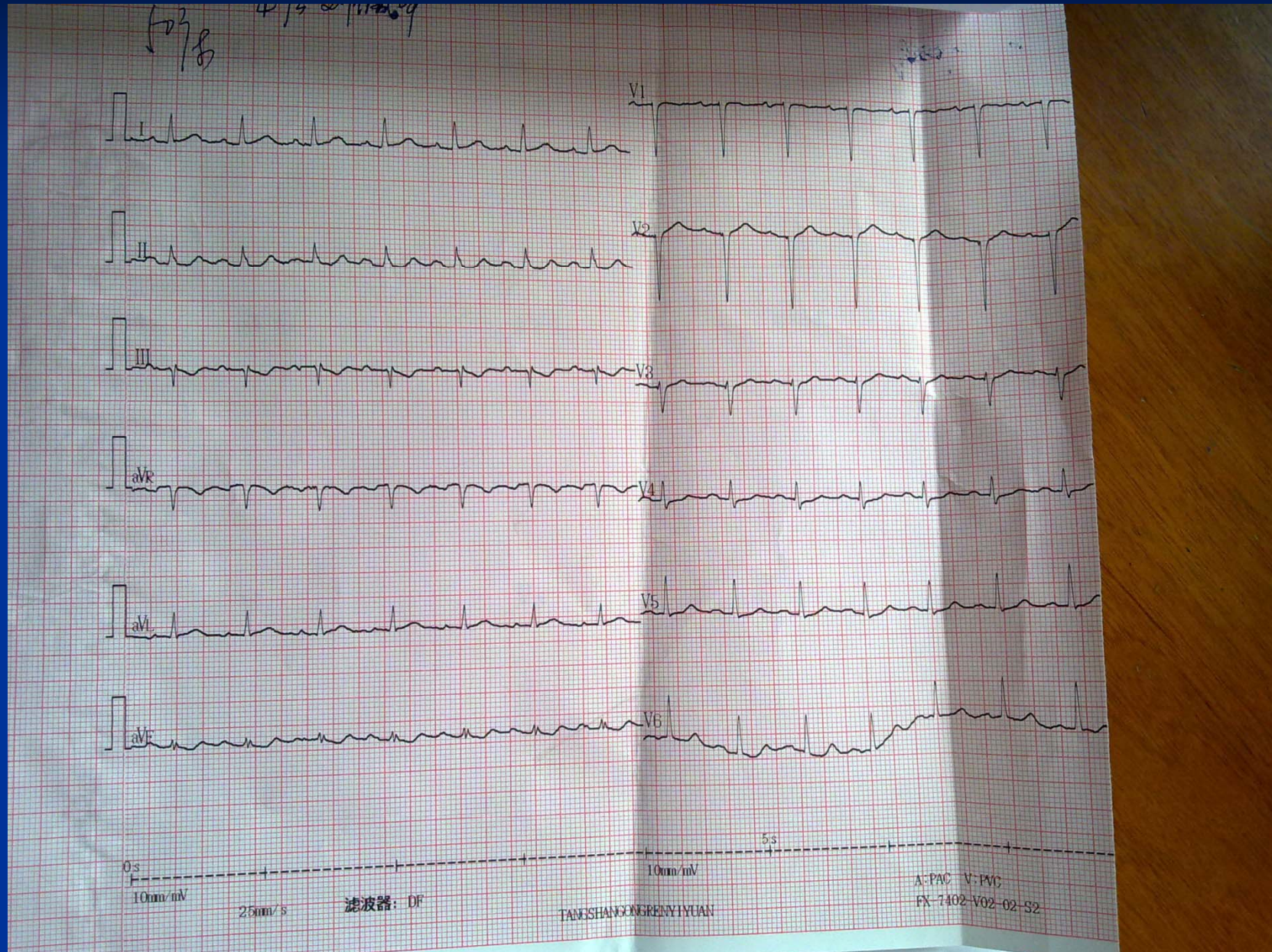




IVUS CHECK

Stent deployed perfectly, no malposition, no dissection, no thrombus, stent full expansion .
no dissections was found, so just cross-over stent is ok, the simple is best.

ECG after PCI





Discussion.

IVUS can explore the plaque morphology, calculate blood vessel diameter 、 the level of stenosis, stent size and lumen diameter after intervention accurately , which ensure the safety of stent implantation and reduce the long-term cardiac events, especially in diffuse long lesion, proximal lesion of LAD , CTO lesion and LM lesion.

Case is simple, but the strategy is important. PCI guided by IVUS in severe lesions is necessary.