



Retrograde PCI for RCA CTO with Reverse CART Strategy

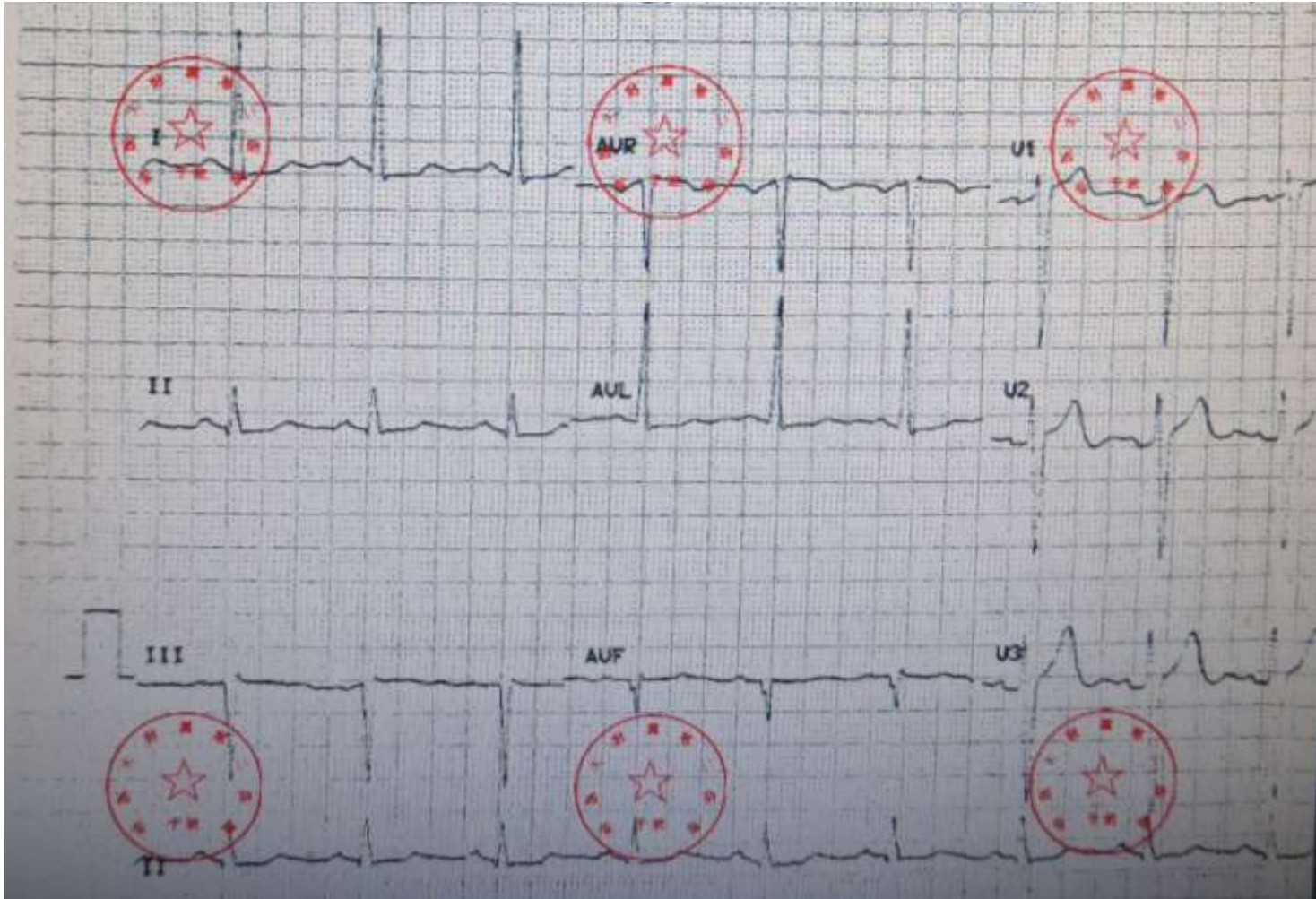
The 2nd affiliated hospital of HMU
Jingbo Hou



Clinical data

- **Male, 52-year-old, chest distress after exertion for 9 years, aggravated for 1month.**
- **Hypertension history for more than 20 years, not well controlled.**
- **Long smoking and drinking history.**

EKG



Q waves on lead II, III and avF

UCG

右室流出道内径	27.5mm	右心室内径	18.6mm
主动脉根部内径	40.8mm	右心房内径	36.6×44.5mm
左心房内径	46.2mm	肺动脉内径	23.9mm
左心室舒末内径	63.1mm	肺动脉瓣口流速	0.80m/s
左心室缩末内径	48.0mm	主动脉瓣口流速	1.20m/s
室间隔厚度	12.6mm	二尖瓣E峰流速	0.74m/s
左室后壁厚度	13.0mm	二尖瓣A峰流速	1.00m/s
左室后壁振幅	8.00mm	三尖瓣口流速	0.80m/s

左心功能测定: EF:47% Δ D:24% SV:89mL

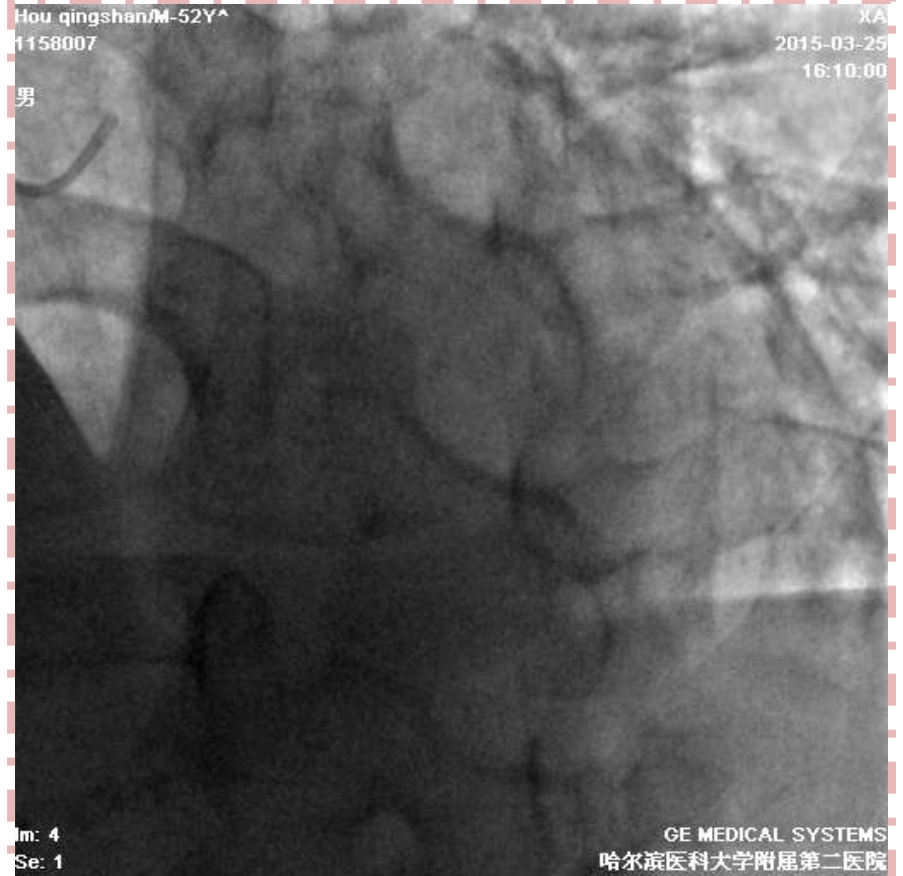
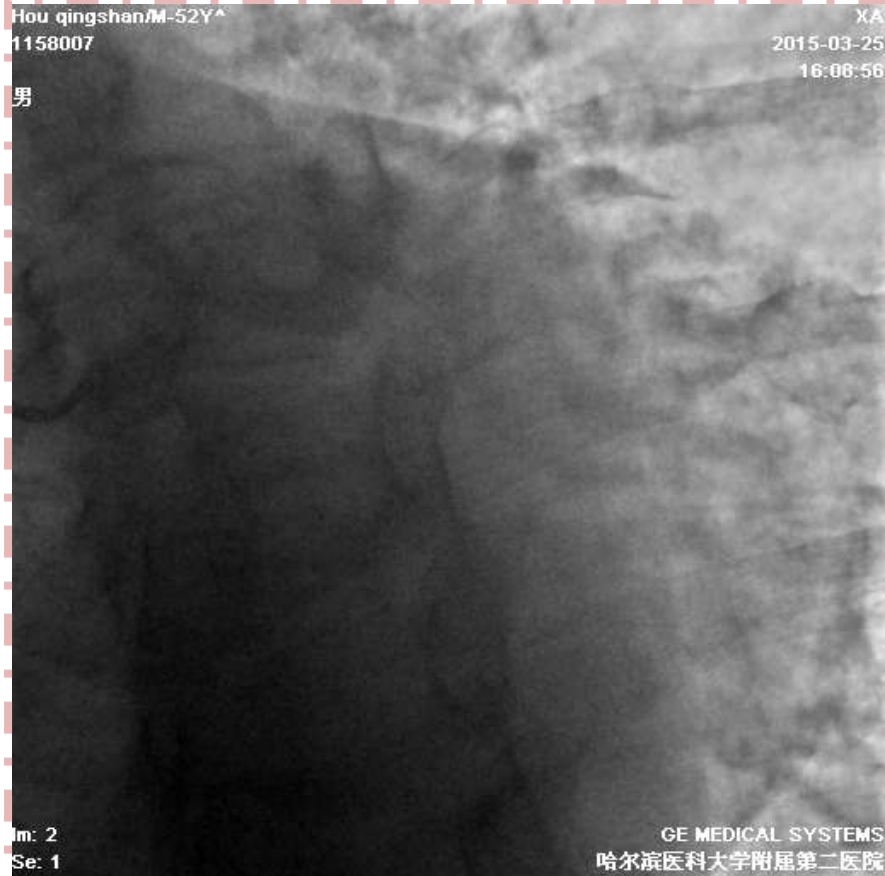
- **Ventricular septum thickness: 12.6mm; Posterior ventricular wall: 13mm.**
- **LVED: 63.1mm;**
- **EF: 47%.**

Laboratory Test

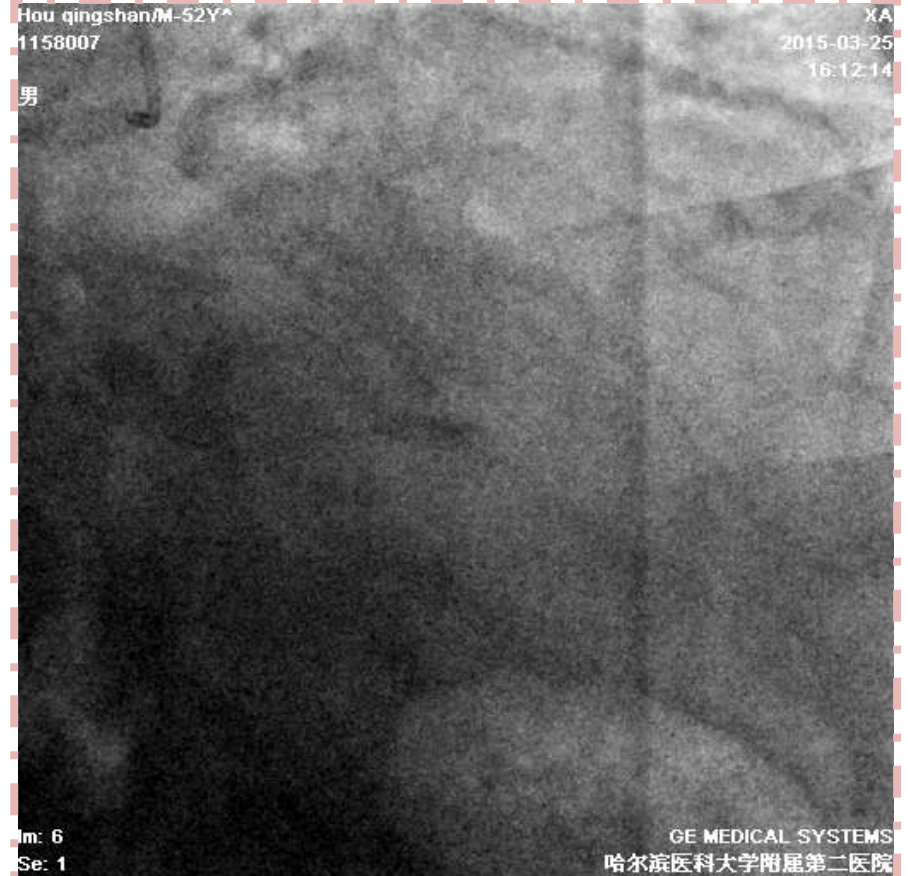
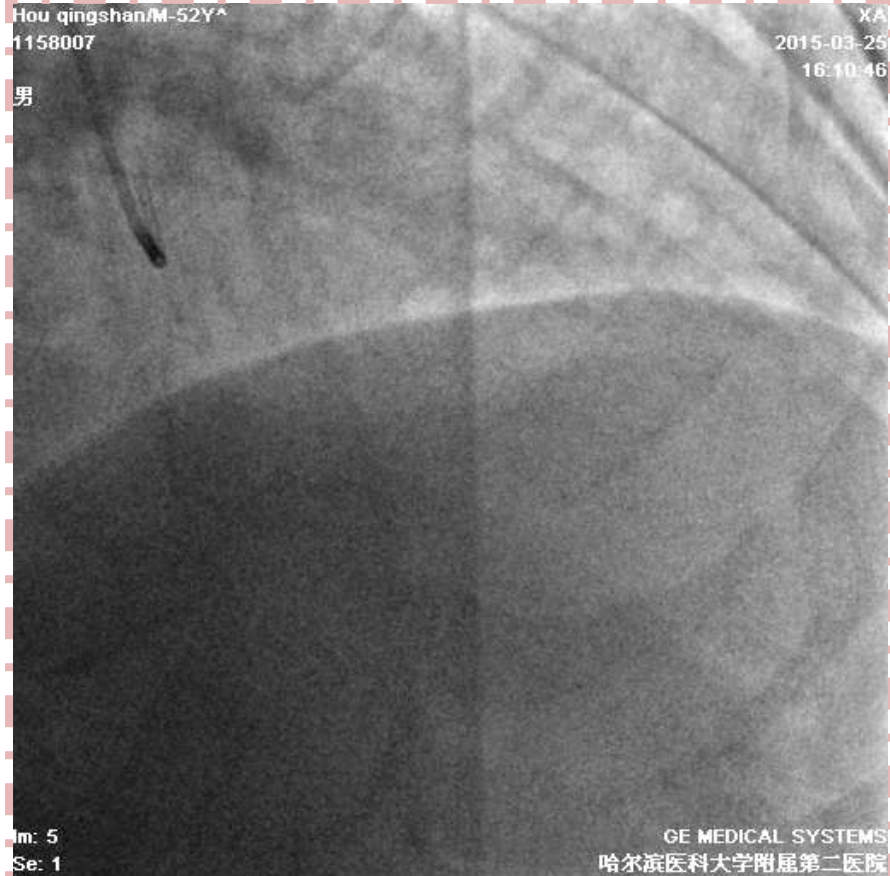
BUN	4.88		umol/L	2.30-7.20
Crea	70.9		umol/L	44.0-110.0
U/C	68.83			
UA	465.2	↑	umol/L	150.0-440.0
HCO3	25.2		mmol/L	22.0-31.0
CK	39		U/L	24-200
LDH	126		U/L	15-240
T-CH	4.93		mmol/L	1.80-5.17
TG	1.61		mmol/L	0.56-1.70
GLU	5.34		mmol/L	3.90-6.10

**Liver and kidney function, blood glucose and lipid level
were in normal range.**

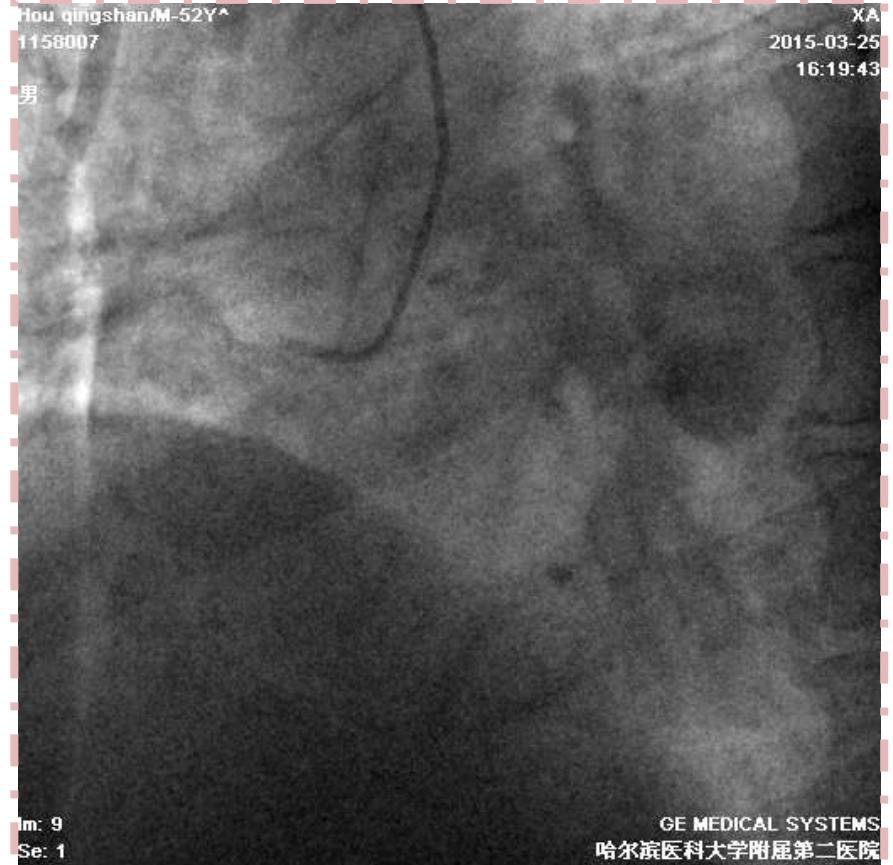
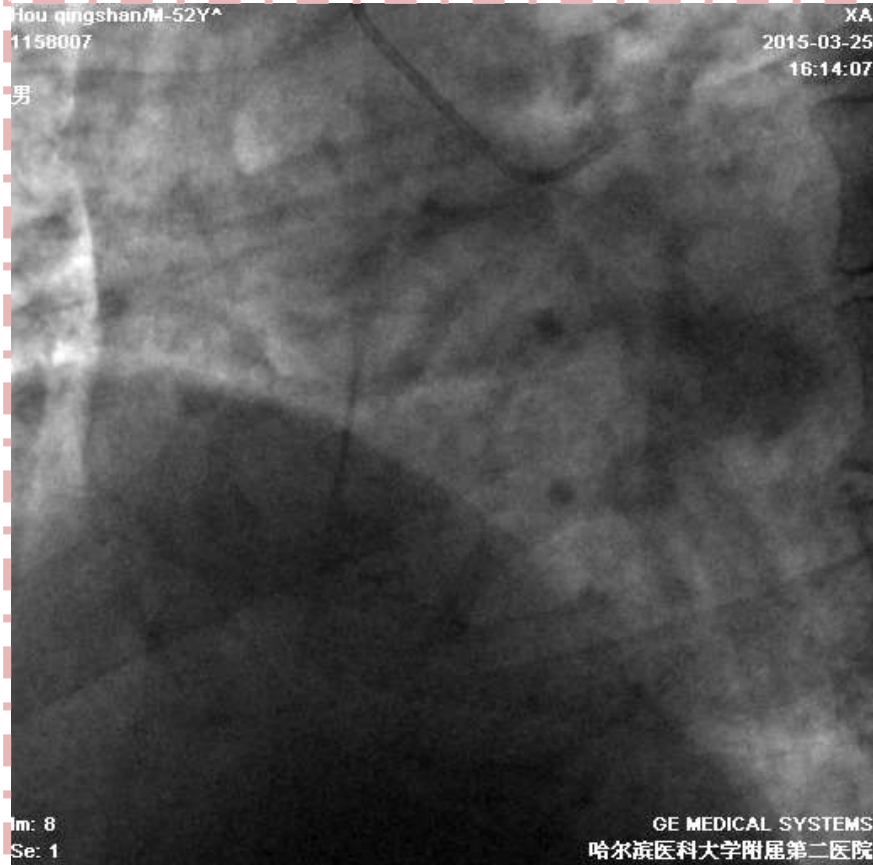
CAG



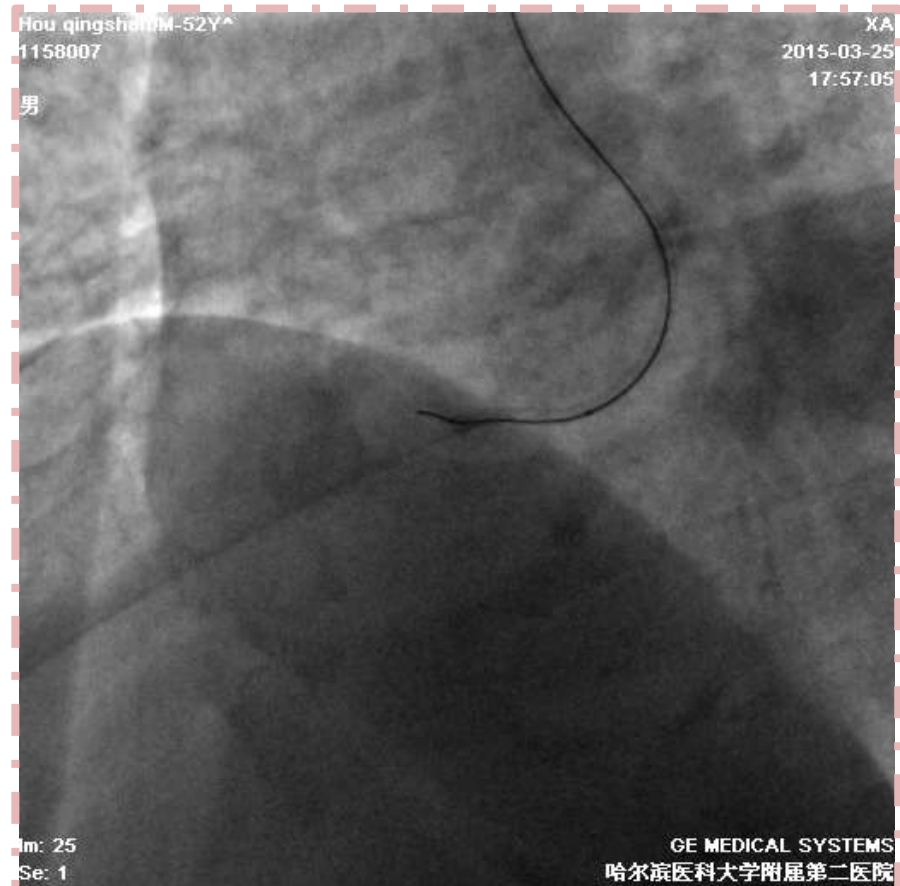
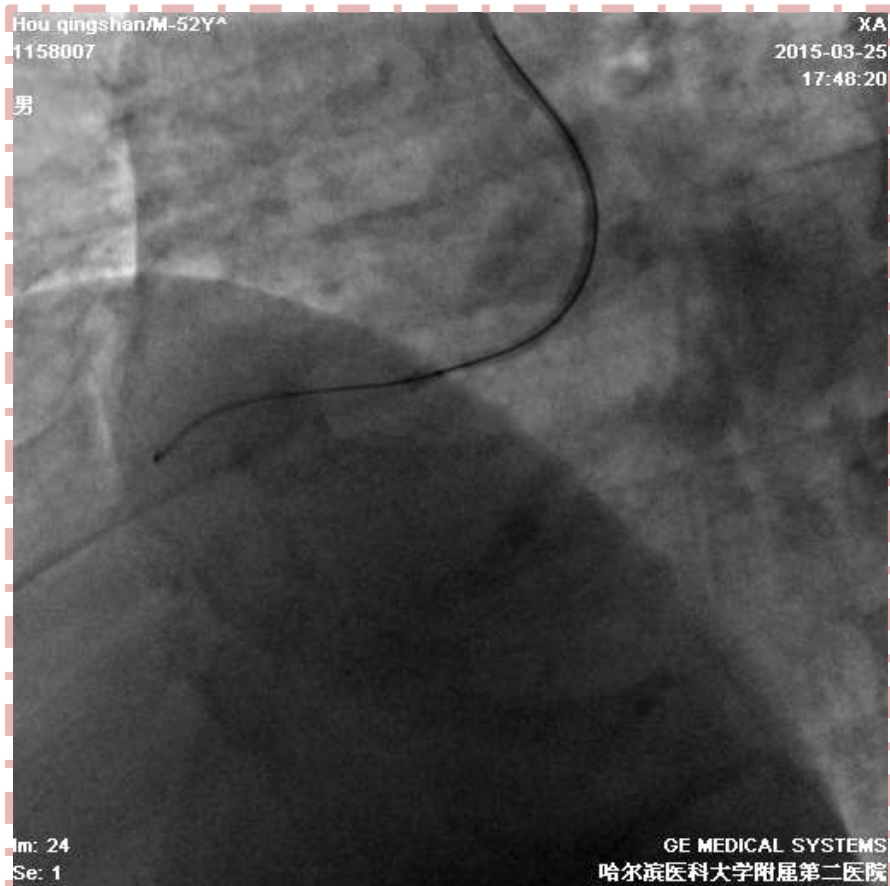
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CAG

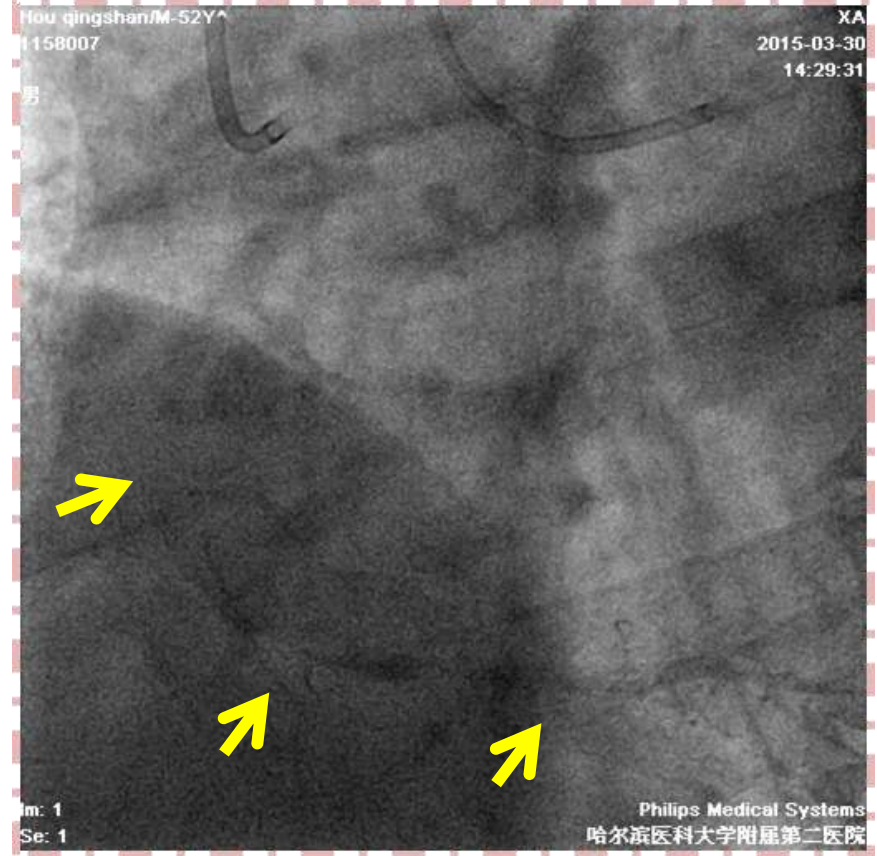
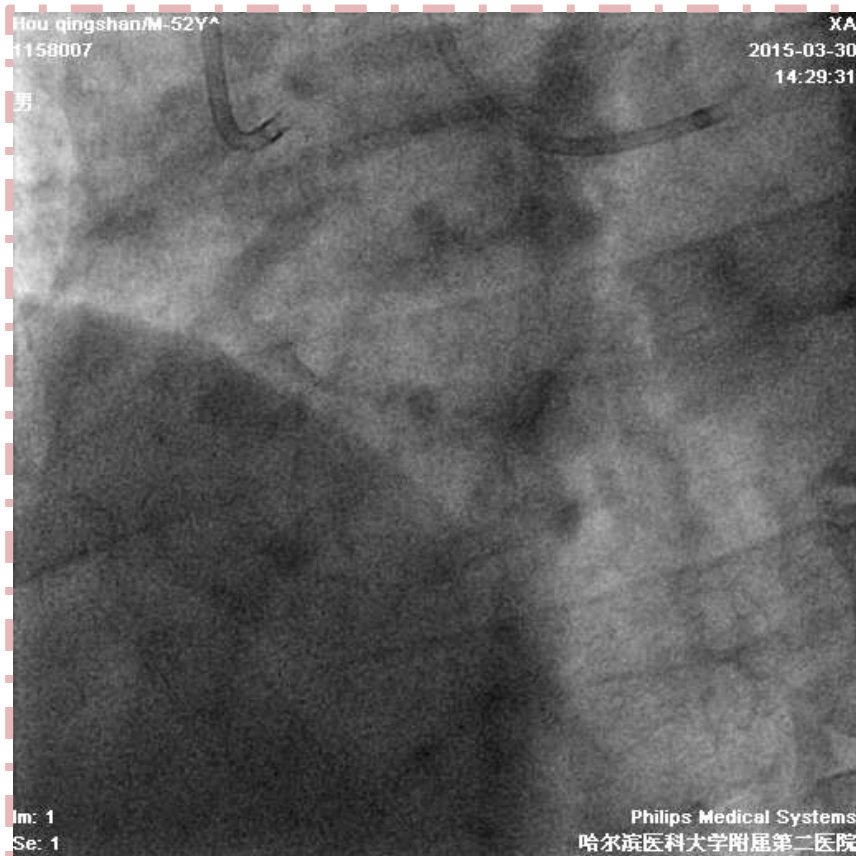


1st Antegrade PCI



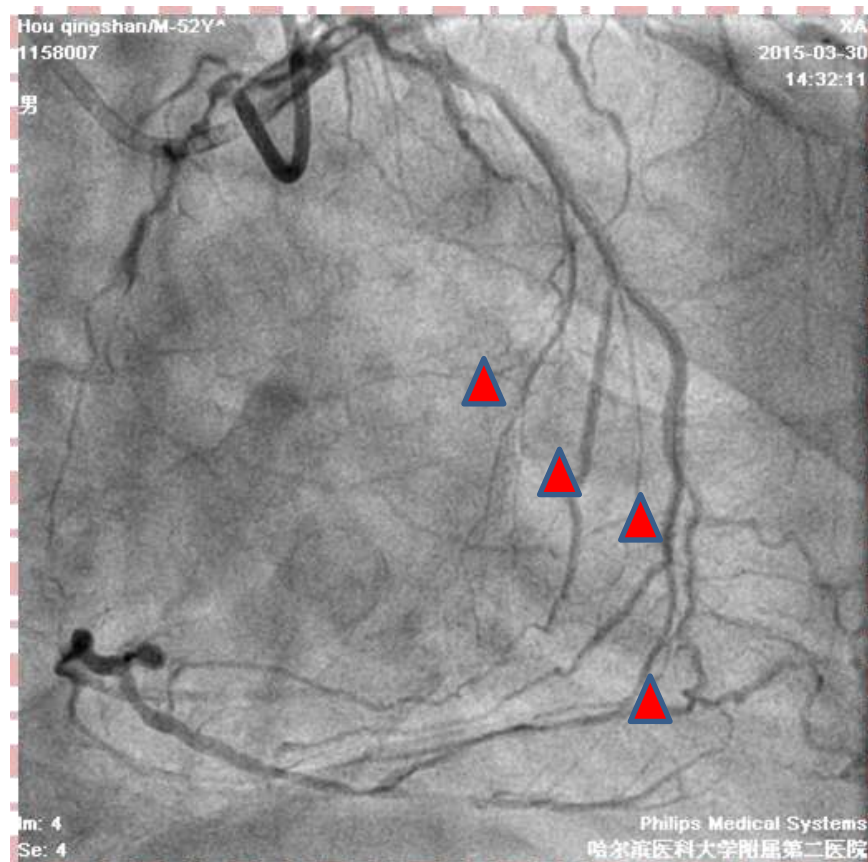
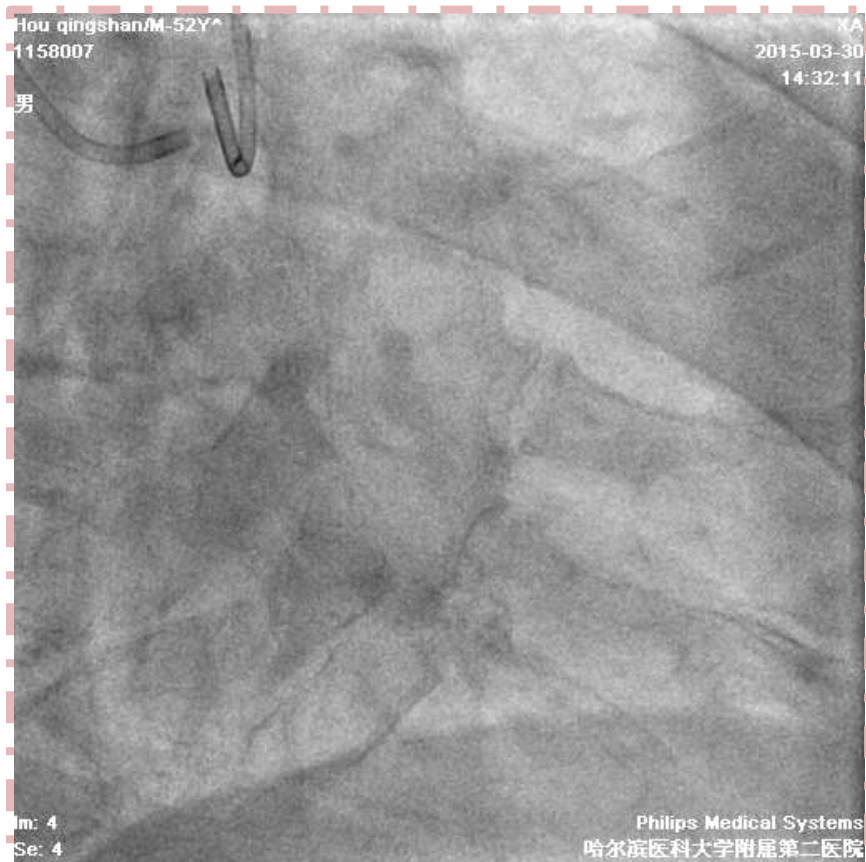
**RCA XB guiding catheter, Pilot 50, Pilot 150 and
Miracle 6 guidewires.**

2nd Retrograde PCI



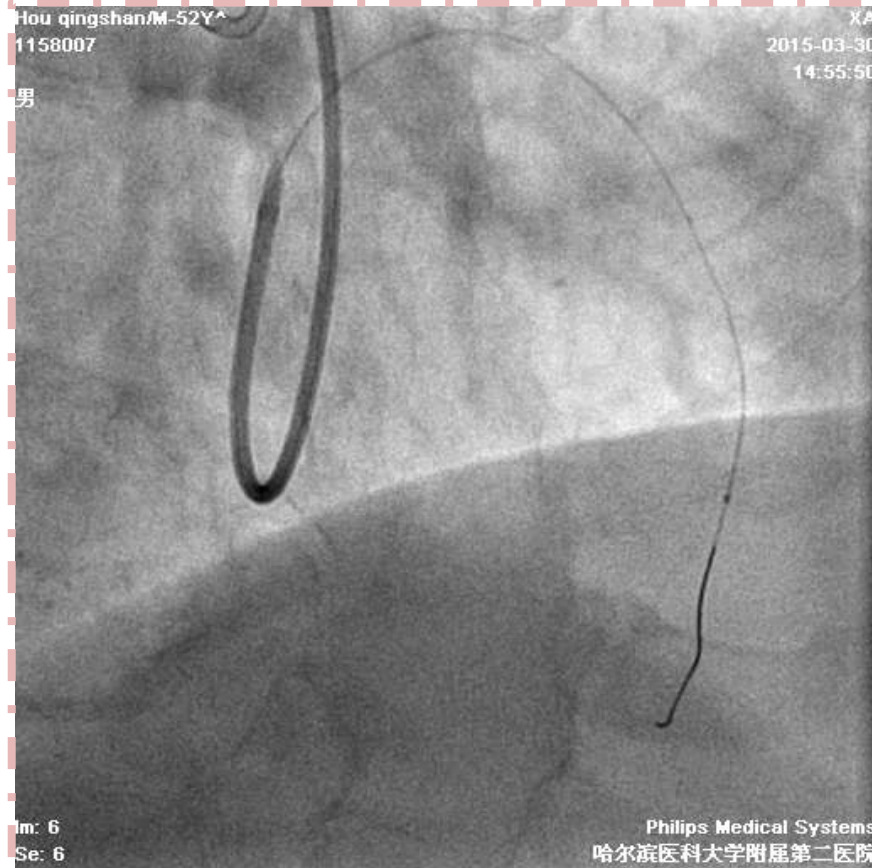
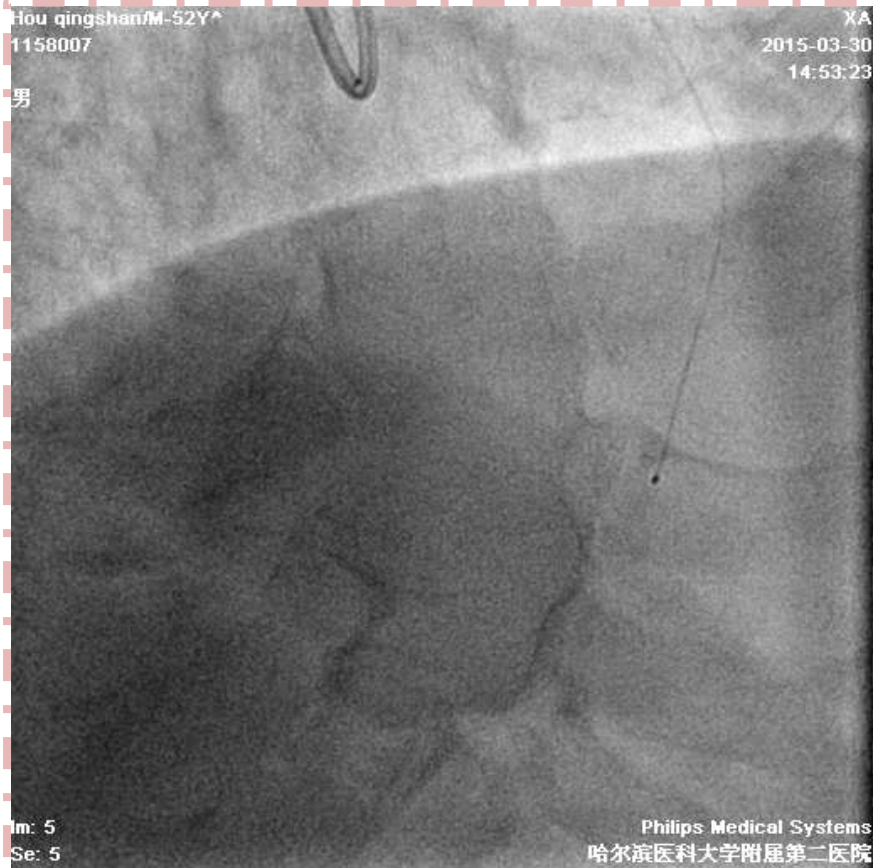
RCA through radial artery(JR4.0), and LCA through femoral artery (EBU 3.75)

2nd Retrograde PCI



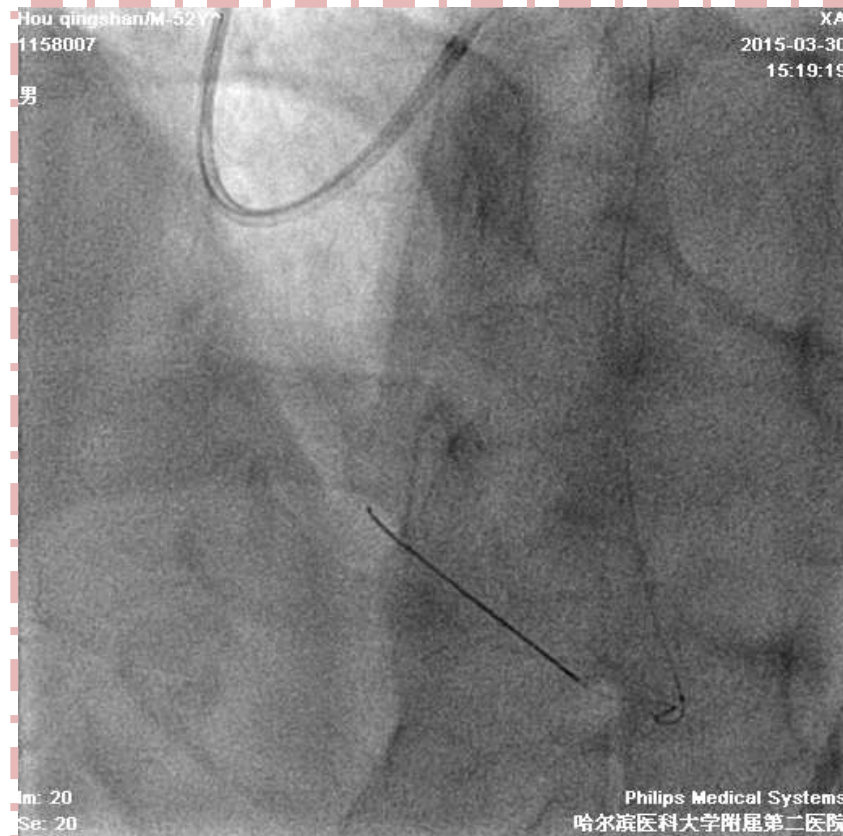
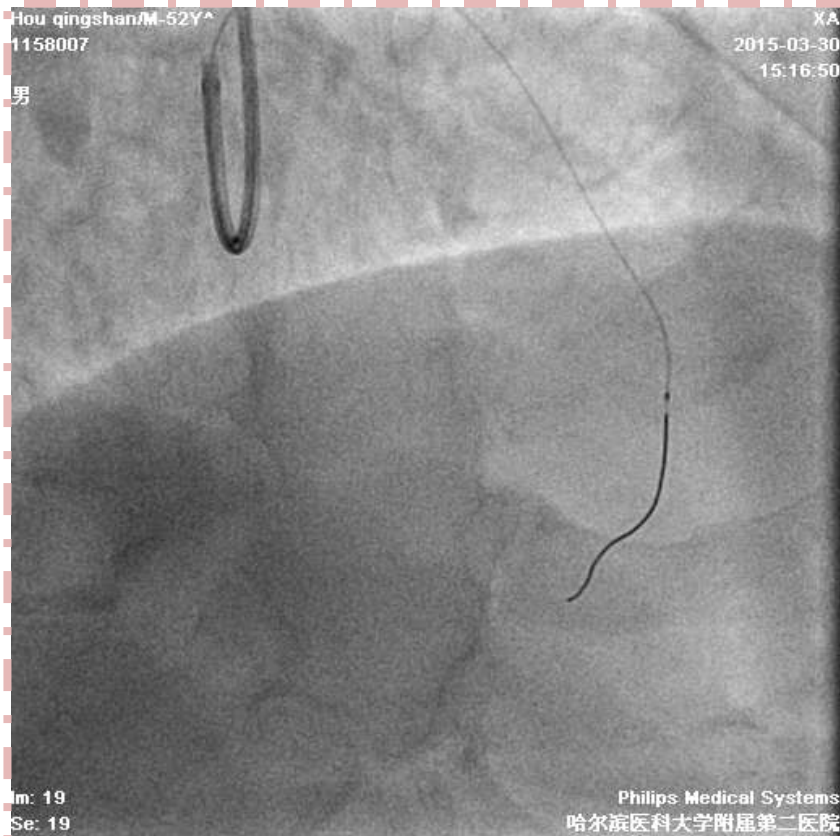
Septal collateral circulation to RCA

2nd Retrograde PCI



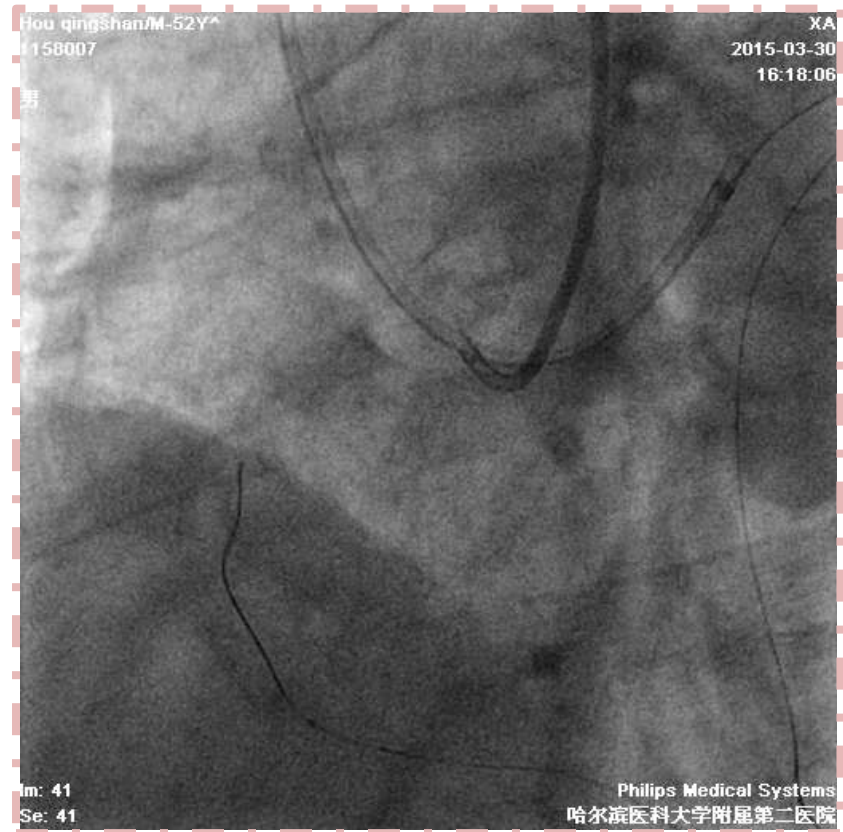
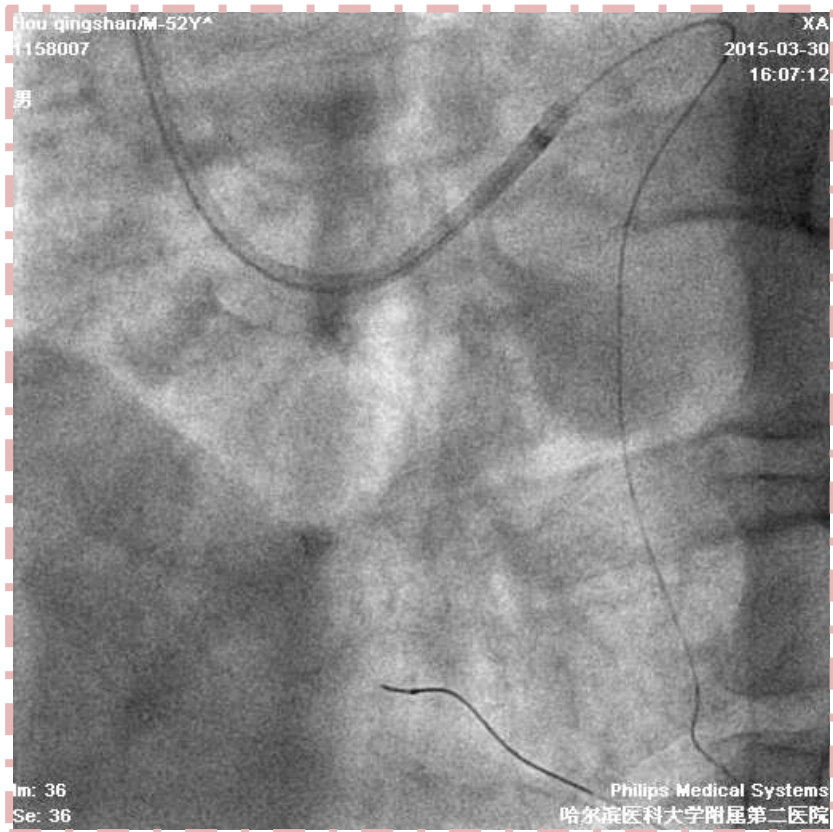
Not a good selection

2nd Retrograde PCI



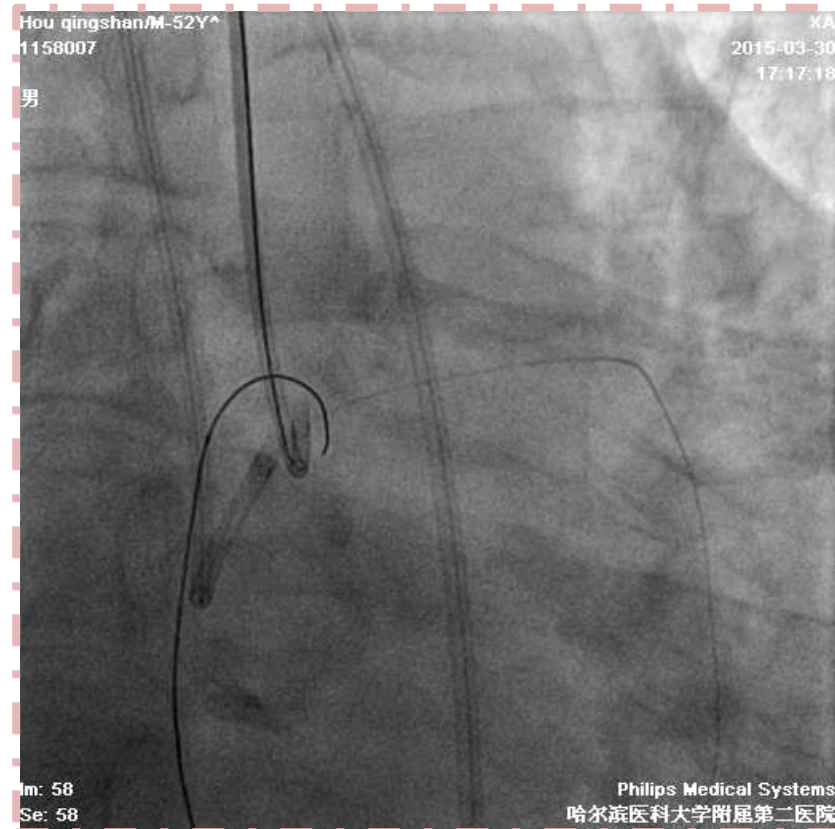
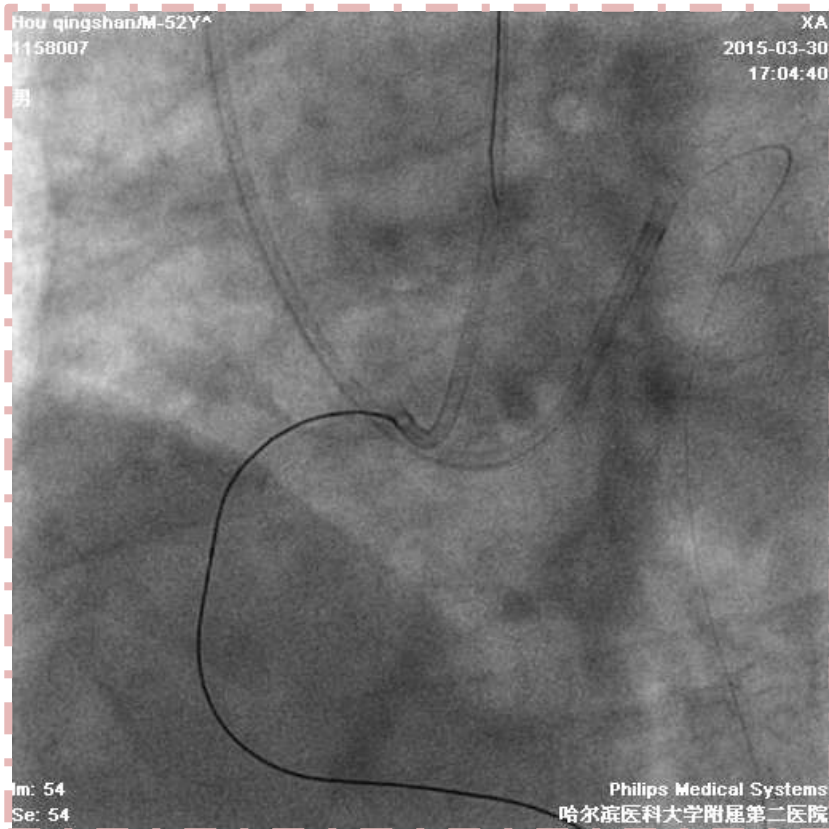
A good way but Finecross can't pass through.

2nd Retrograde PCI



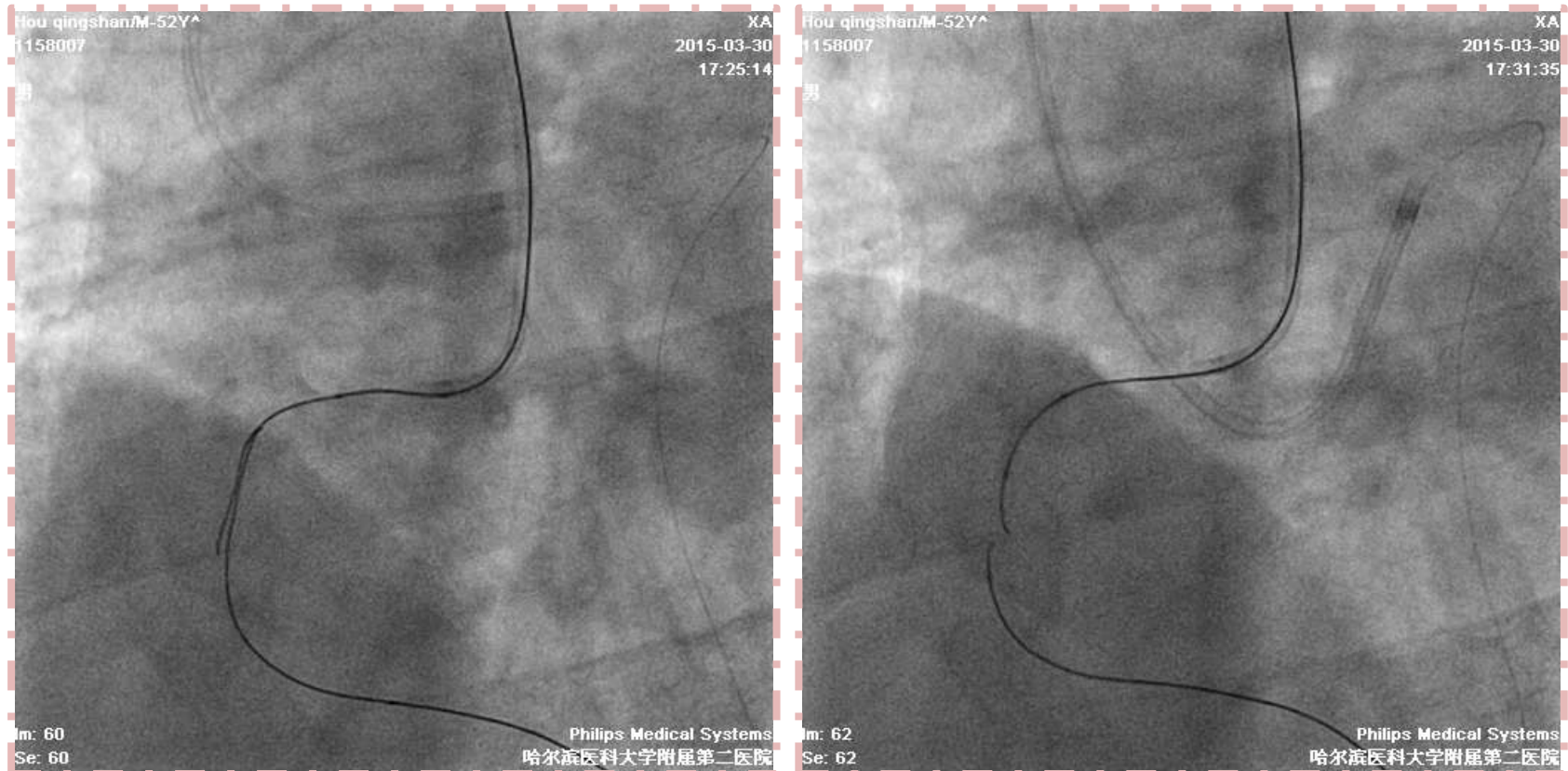
Change guiding catheter to enhance backsupporting. Still had difficulties for advancing retrograde guidewire, change guidewire, Pilot 50, 150, Feilder XT.....

2nd Retrograde PCI



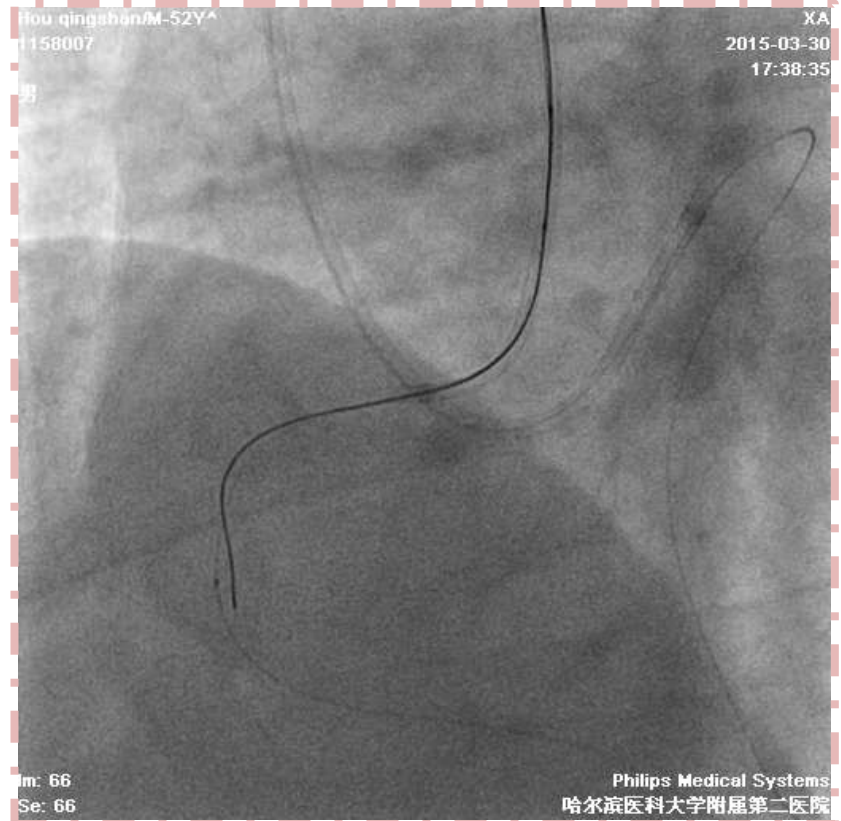
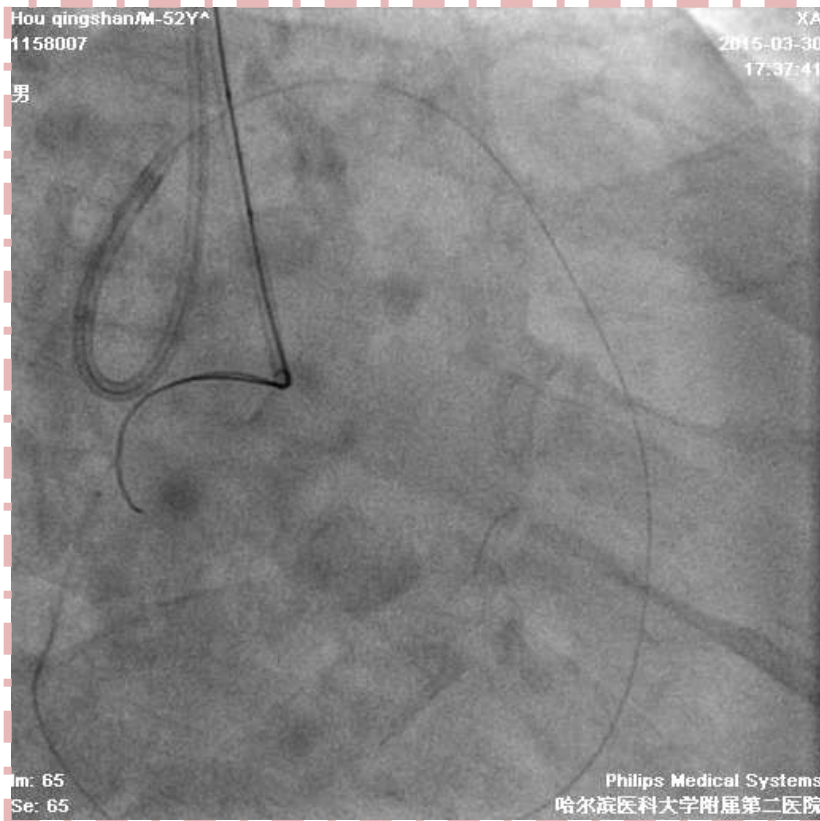
Miracle 6 in proximal RCA, but in false lumen.....

2nd Retrograde PCI



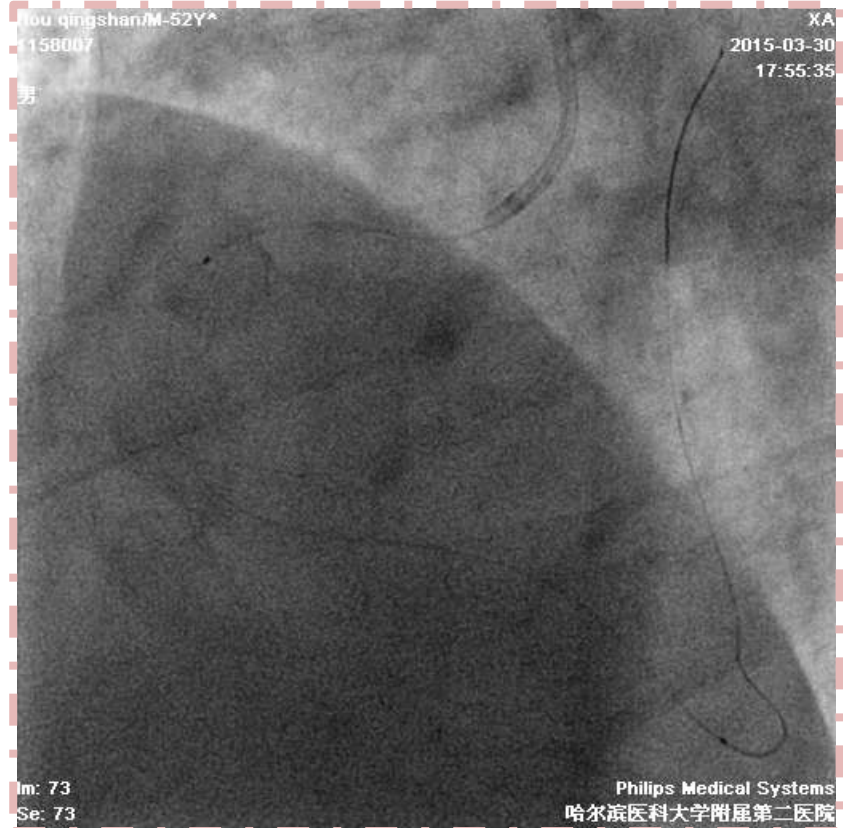
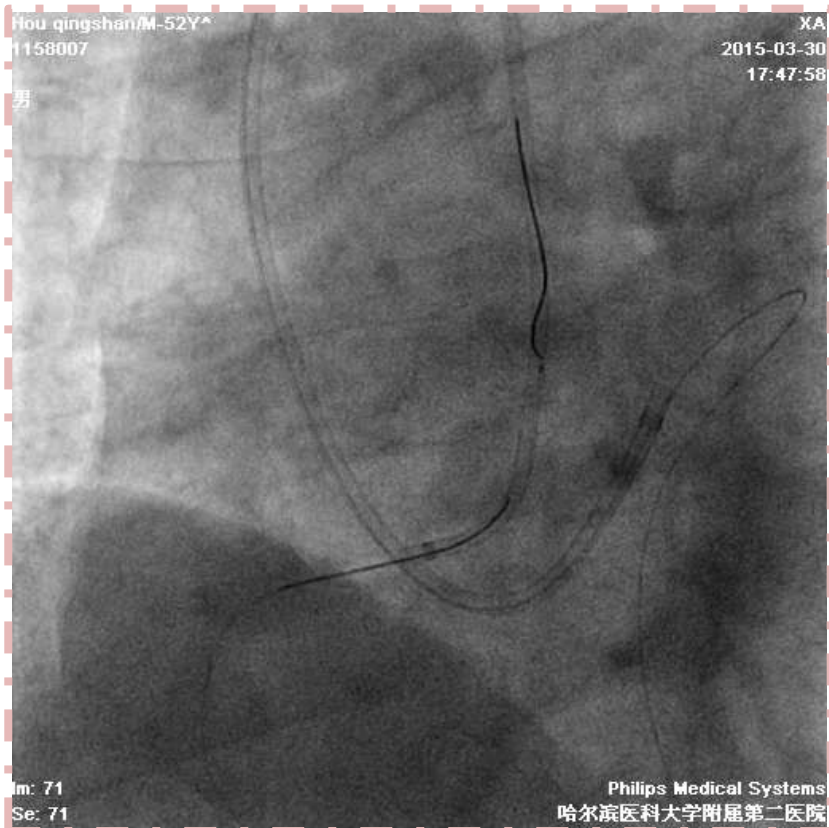
Antegrade guidewire very close to retrograde guidewire (under X-ray rotating imaging), but can't into true lumen. Reverse CART with antegrade 2.5*15mm balloon dilatation.

2nd Retrograde PCI



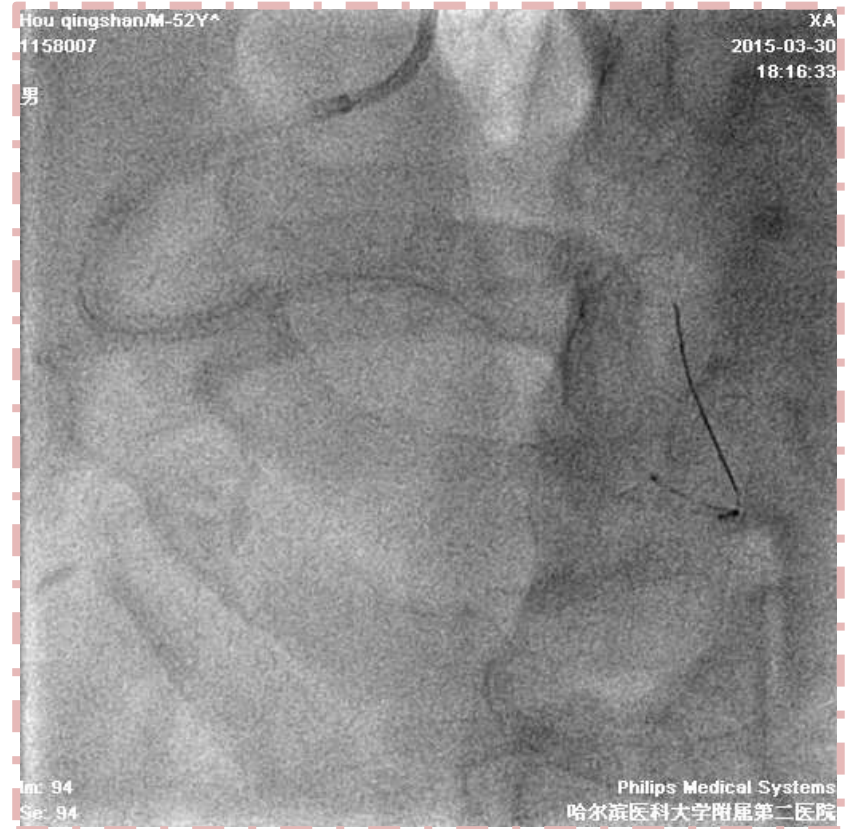
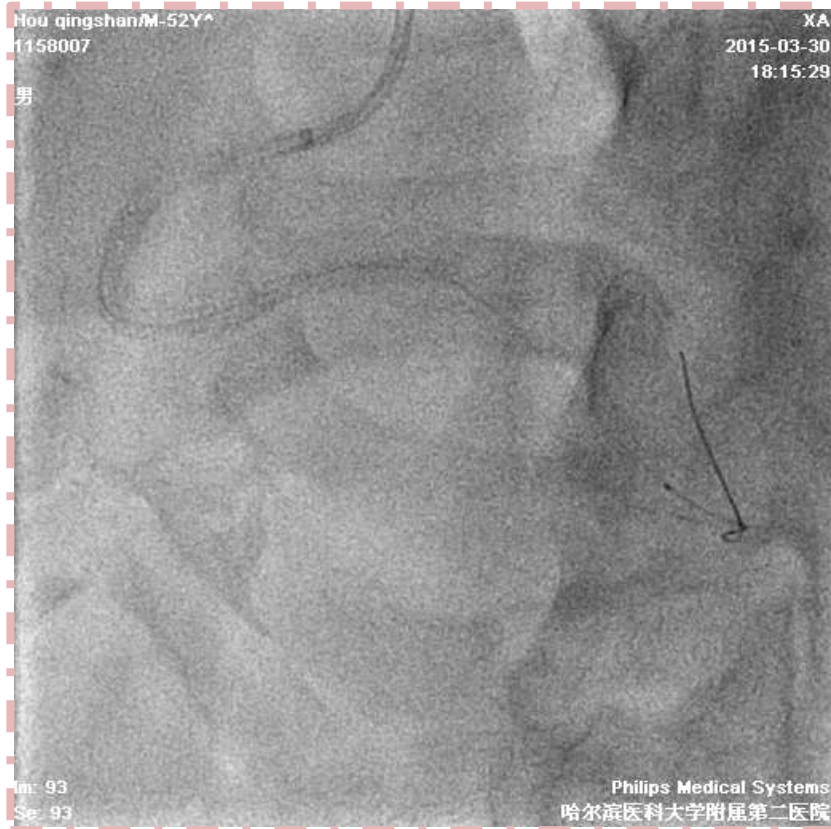
Retrograde Pilot 50 guidewire into RCA guiding, with balloon anchoring, microcatheter into the guiding (with great difficulties..)

2nd Retrograde PCI



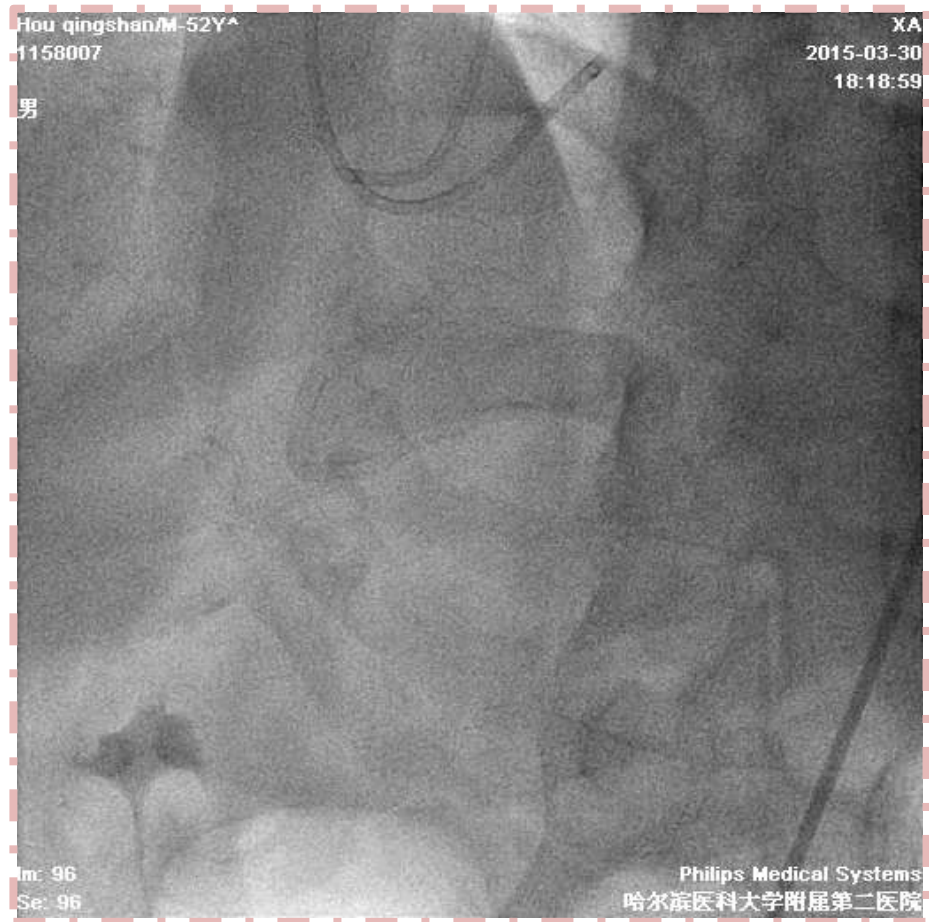
**Antegrade runthrough into microcatheter, then
1.25mm and 2.5mm balloon dilatation.**

2nd Retrograde PCI



After 3 stents implantation.

2nd Retrograde PCI



Take Home Message

- **Retrograde guiding catheter backsupporting is very important.**
- **If retrograde route has multiple severe stenosis or occlusion, carefully manipulate your guidewire, change different wires if necessary.**
- **Reverse CART technique is helpful for retrograde strategy, but should on IVUS monitoring or X-ray rotating imaging to avoid excessive artery injury.**