

How to Establish an Efficient and Successful CTO Program in a Large PCI Center?

Kefei Dou, M.D. & Ph.D.

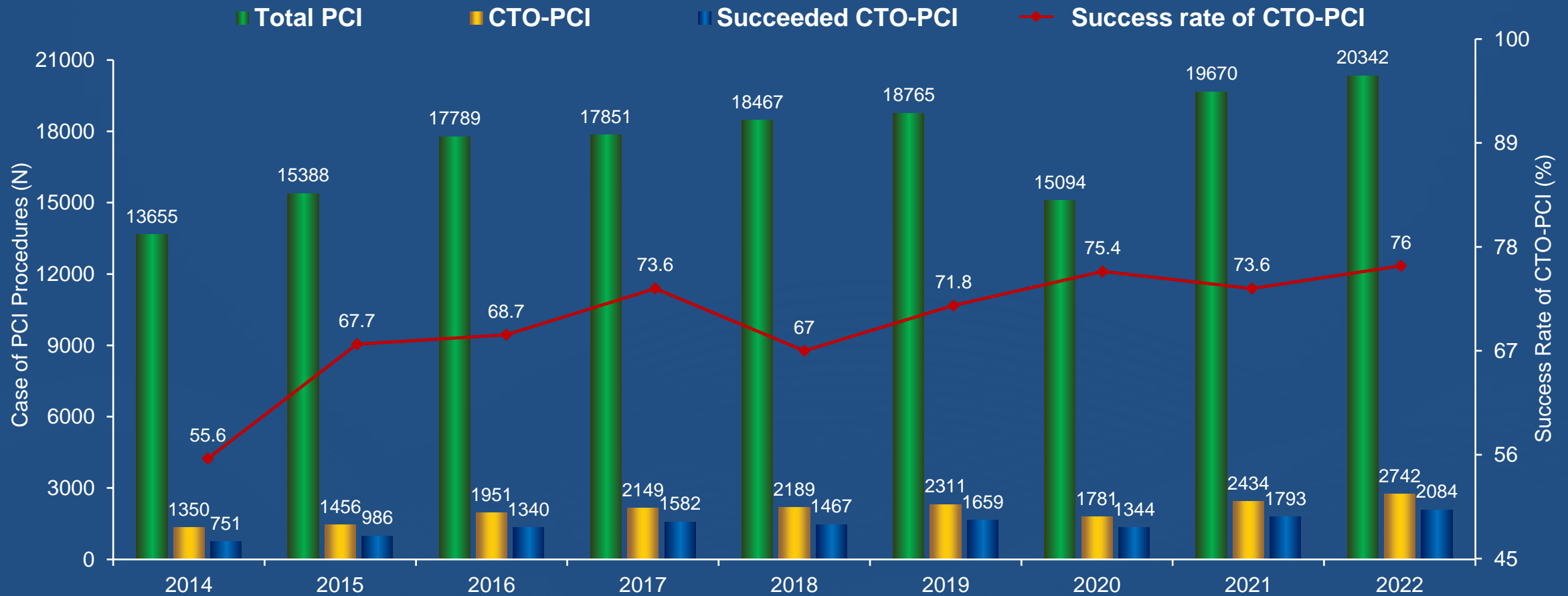
Fuwai Hospital, Chinese Academy of Medical Science, China

Disclosure

I, (Kefei Dou) DO NOT have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation.

CTO PCI at Fuwai Hospital

CTO-PCI constitutes around 12% of all PCI procedures.



Challenge in a Large PCI Center

- **Many, Many, Many.....patients**
- **A large proportion of transferred patients with complicated clinical and anatomic situation**
- **Limited cathlab (1 operator less than 1 day/ 1 week averagely; 25 cases/ day per lab)**
- **Experienced hungry cardiac surgeon**
- **More and more CTOs**

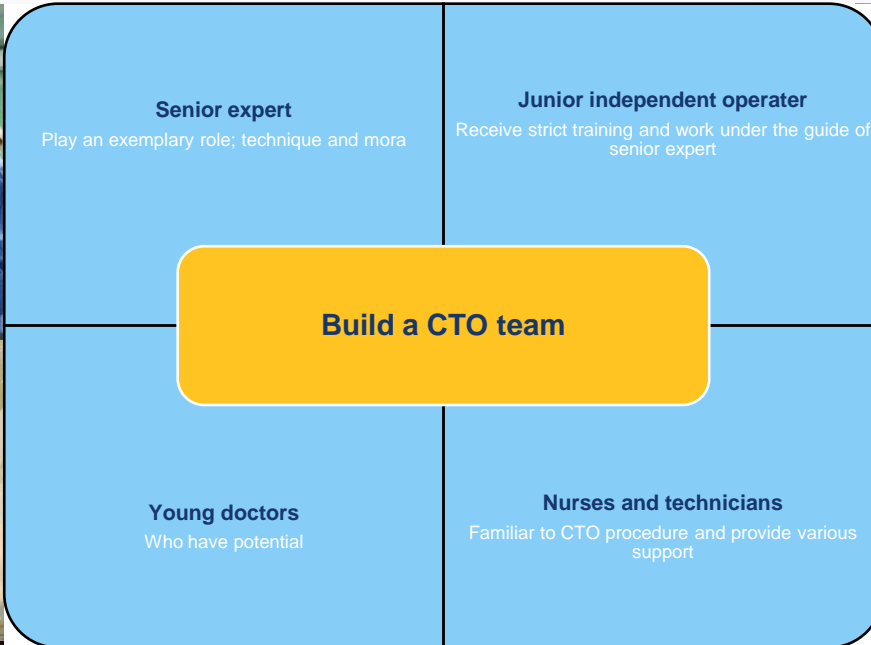
Why CTO Program in Large PCI Center is Needed

- More and more CTOs and CHIP CTOs
- Technically complicated, Clinically high risky
- Duty
- What is our goal?
 - Clinical beneficial; successful /efficient /safe procedure
- HOW?

How to Establish an Efficient and Successful CTO Program in a Large PCI Center?

1. **Build CTO teams**
2. **Technique and Strategy Training**
3. **CTO procedure at the right time**
4. **Team work**
5. **Review, analysis and promotion**
6. **Academic communication**
7. **Support from Cardiac surgeon**

#1 Build CTO teams

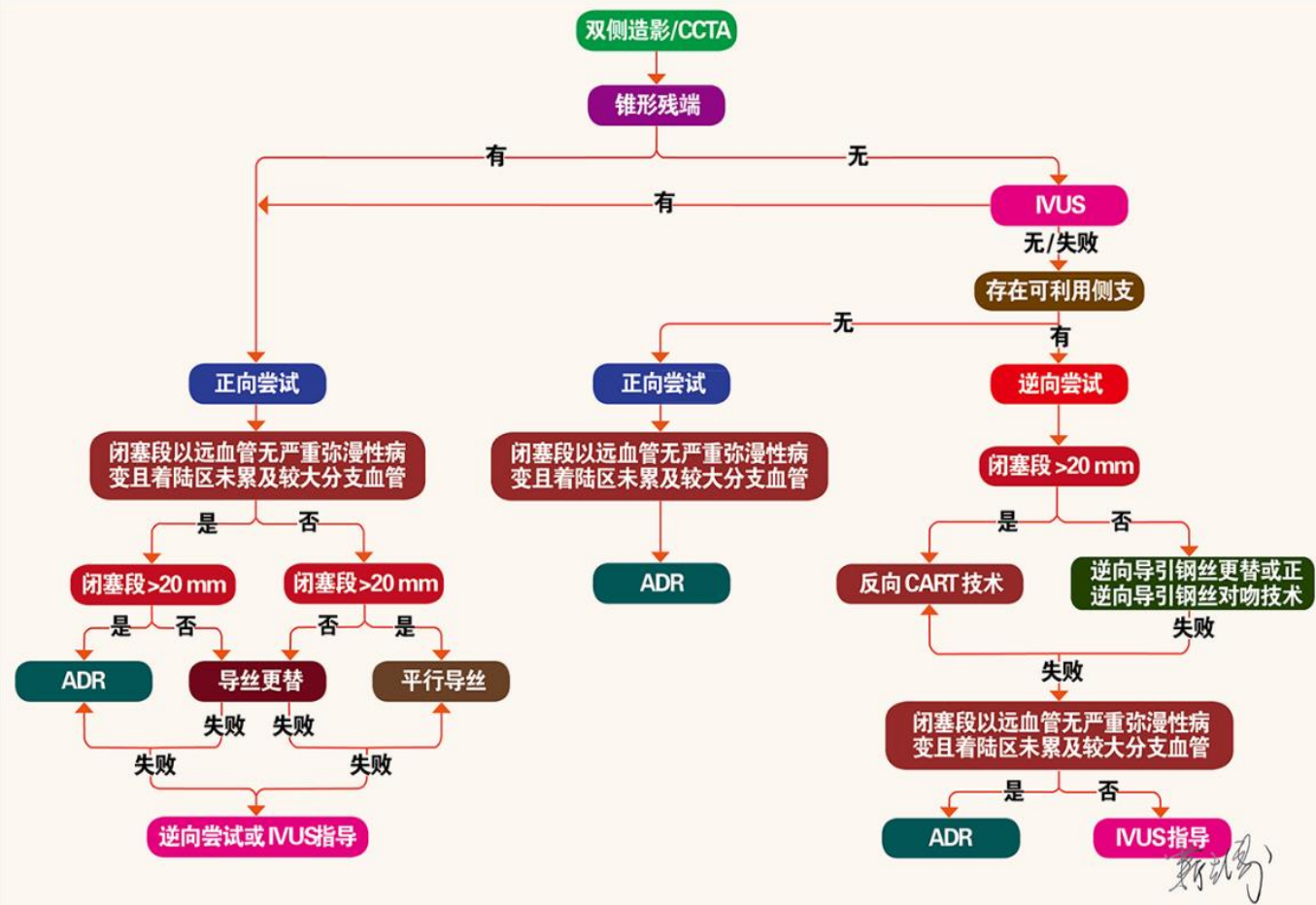
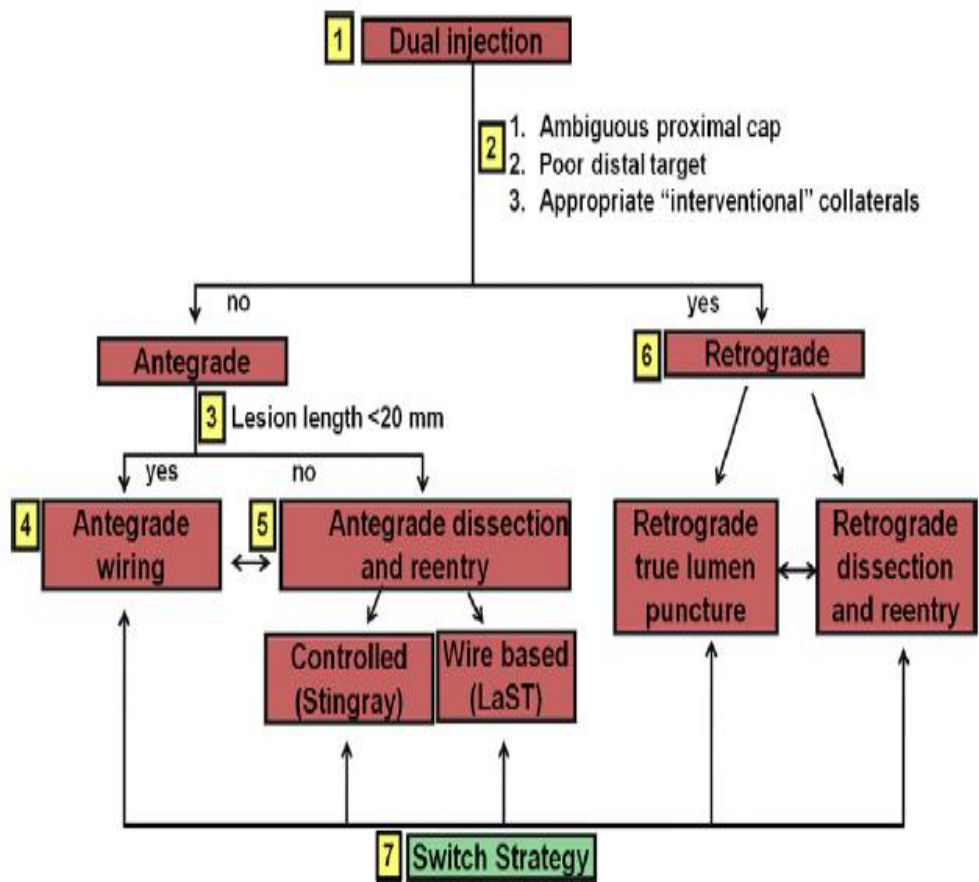


#2 Technique and Strategy Training

- **CTO indication/ contraindication**
- **When to stop CTO procedure**
 - Time > 3h , Contrast > 4*eGFR , Radiation > 5Gy
- **Technical details**
 - Angio ,GC, Wire, MC, IVUS ,Problem solving
- **Appropriate Strategy**
 - Ante, Retro, ADR , Strategy switch



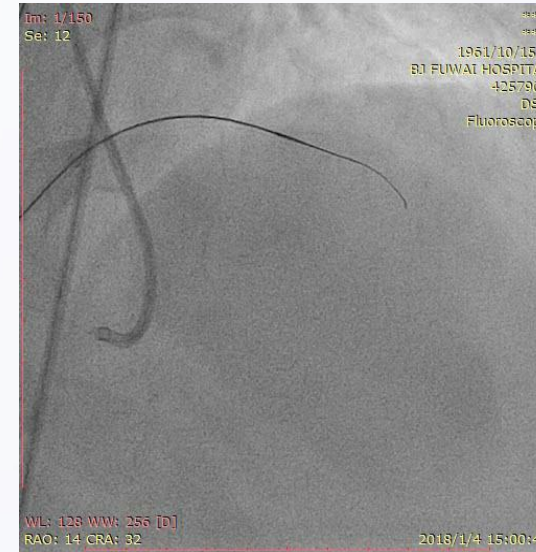
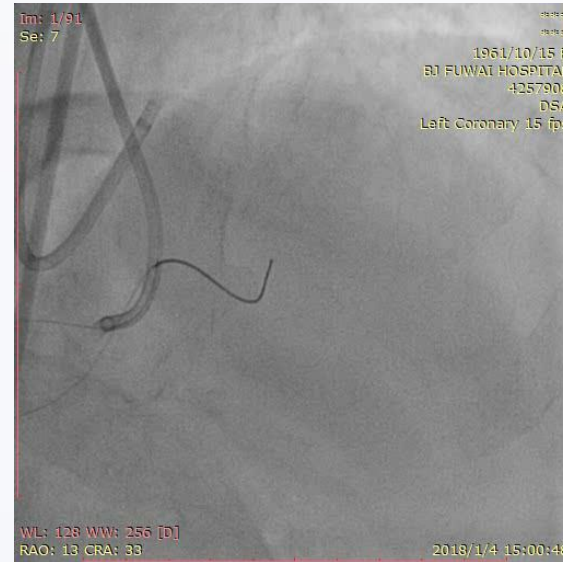
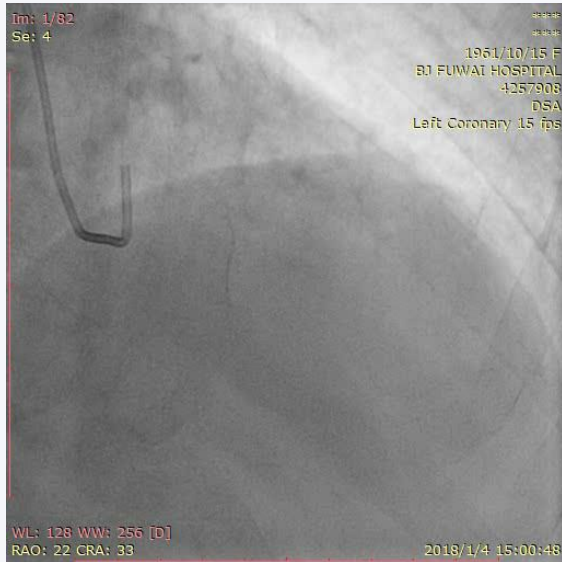
Make a plan on the basis of Lesion characteristics



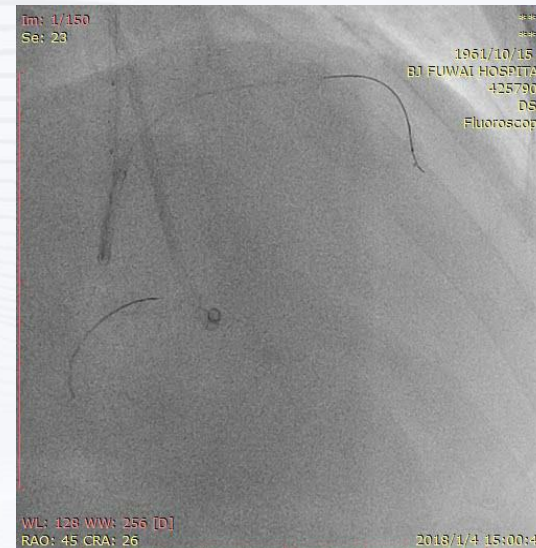
Bilateral Injection

Dual angiography DURING PCI

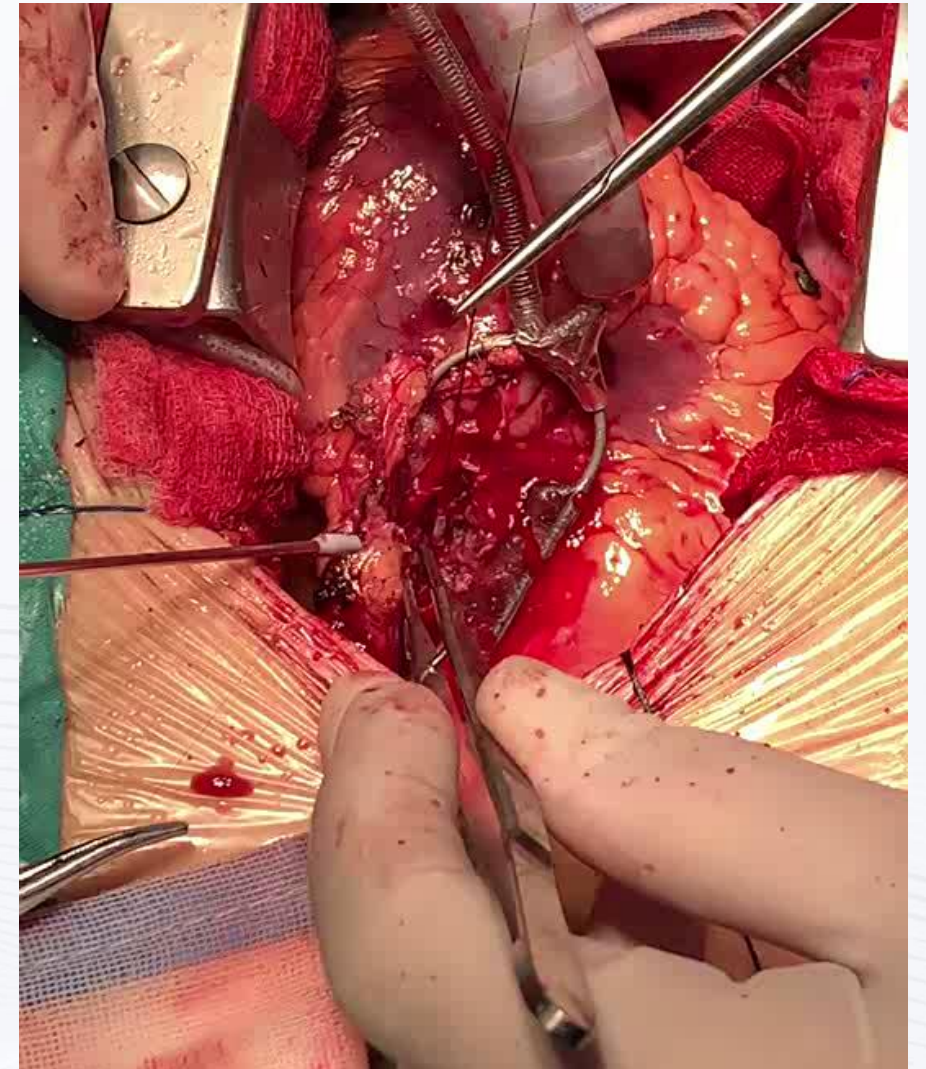
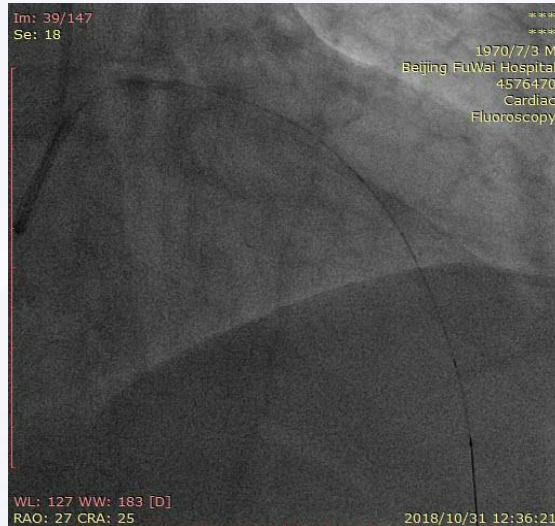
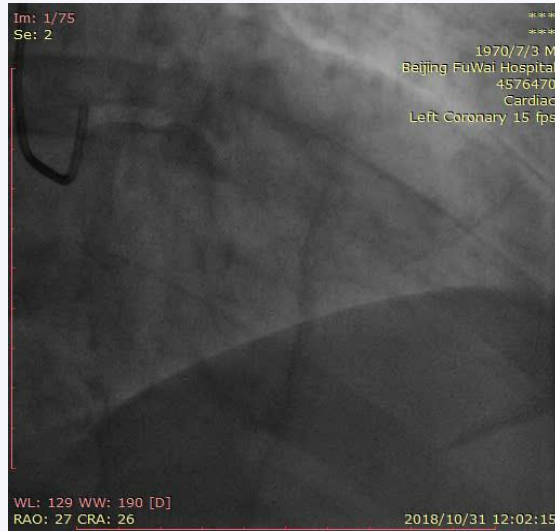
Subintimal crossing, Stingray balloon, Wire redirection, guide stenting



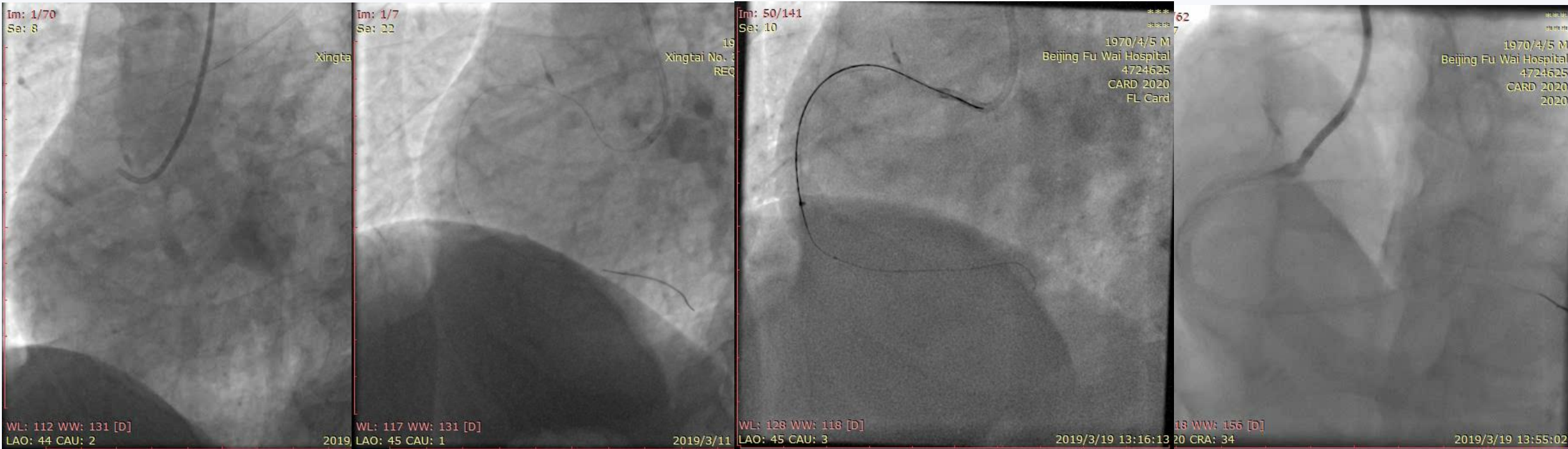
1. Inject donor vessel first
2. Wait 1-2 sec before injecting CTO vessel
3. No panning
4. Cine until contrast clears



LAD CTO PCI without Bilateral Injection



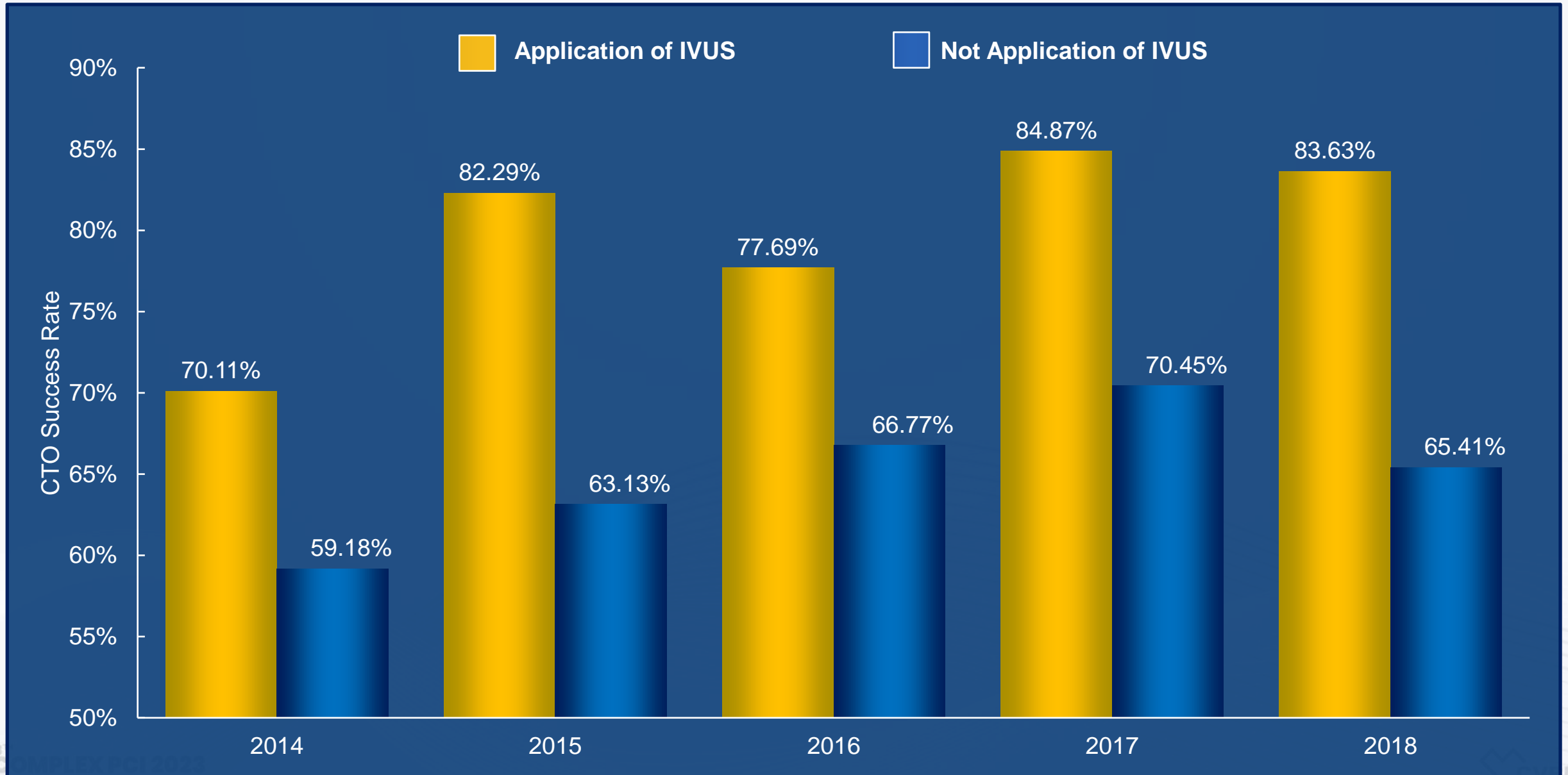
GC Support



6F JR 4
MC ×

7F AL 0.75+Guidezilla

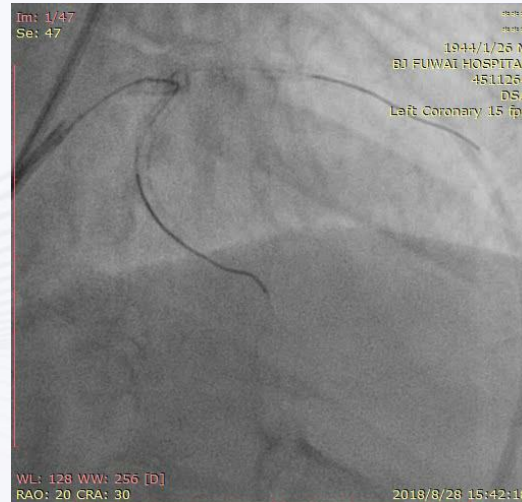
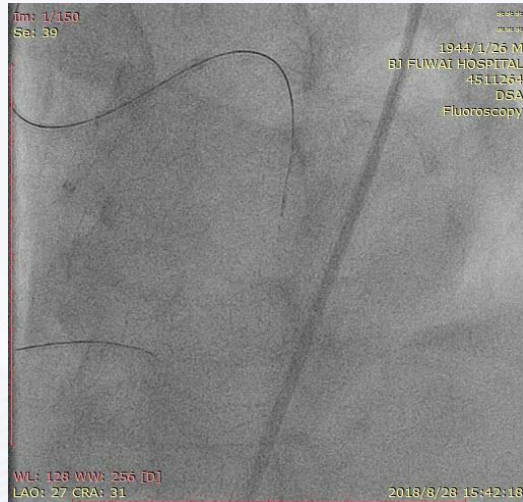
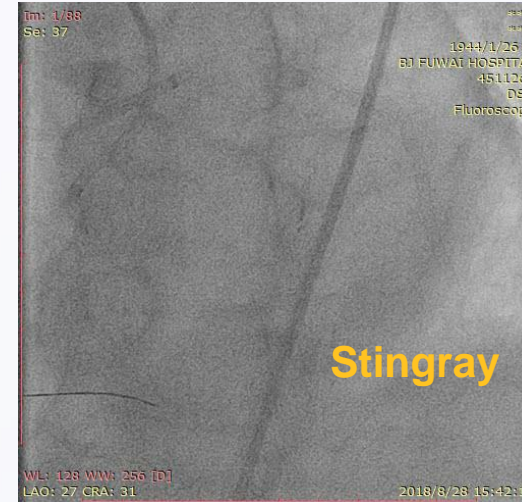
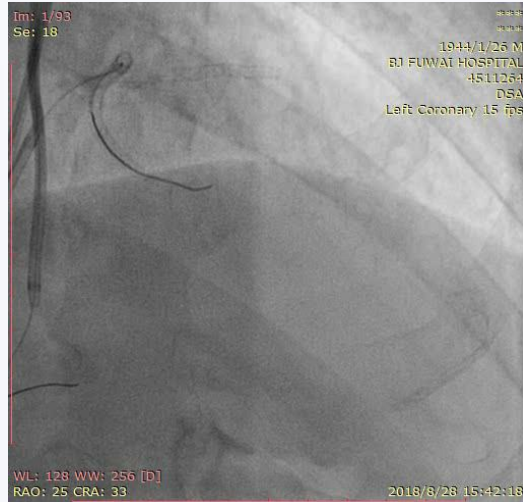
IVUS and CTO Success Rate



#3 Appropriate Time

- **Pre-set CTO time (whole day or at least part of day),no need to consider other cases**
- **Day time, not in midnight**
- **Planned CTO procedure, not ad hoc CTO especially high score cases**

#3 Appropriate Time : *Nightmare in midnight*

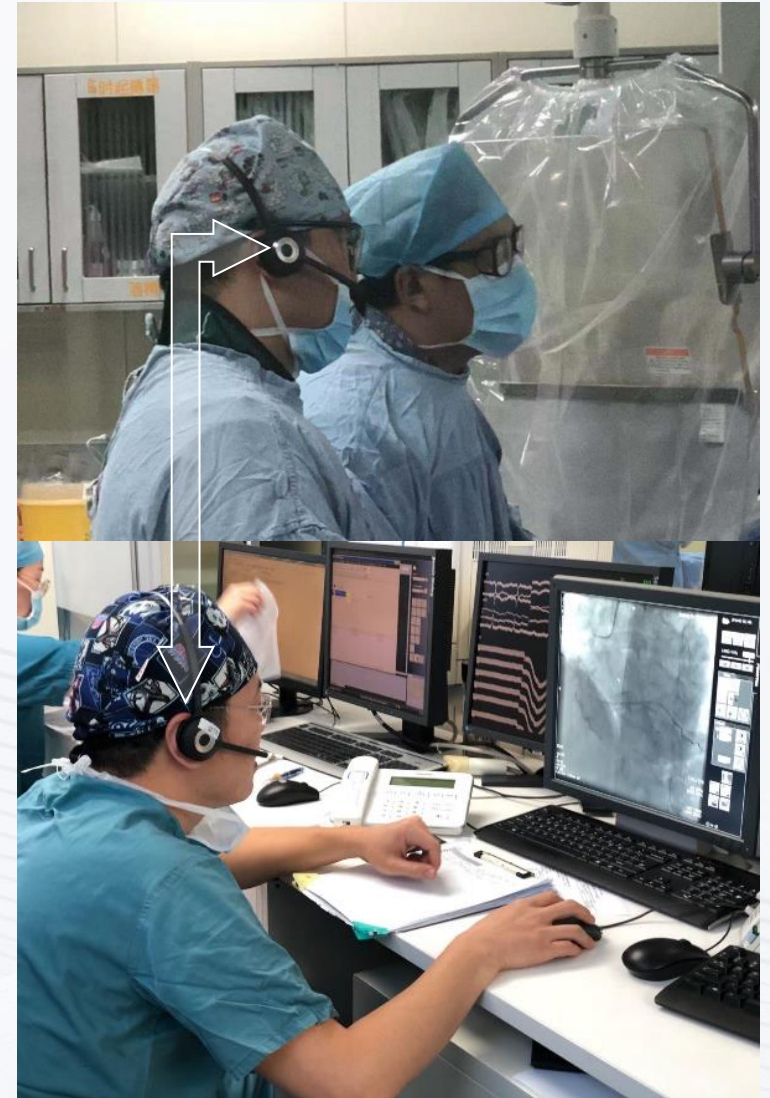


#4 Team work

- Senior expert do cases or support
- Double independent operator system:
- Assistant work should be ready anytime:

ACT/Vasoactive agent/mechanical

Support/echo/pericardial centasisi/surgeon.....



#5 Case Review and Discussion

15:01 10:12 10:11 10:10

CTO技术提高讨论群(17) CTO技术提高讨论群(17) CTO技术提高讨论群(17) CTO技术提高讨论群(17) CTO技术提高讨论群(17)

京津冀CTO俱乐部交流群 (64)
2018 CTO WEEK 病历群 (35)
CTO hobbyists (500)
2018 CTO WEEK (109)
征服CTO之约 (500)
闲聊CTO (433)
CTOCC注册研究 (120)
CTO技术提高讨论群 (17)
2018 CTO WEEK 阜外转播任务
2018CTO Week病例报导 (15)
CTO CLUB NAGOYA (10)

心得、体会+交流能给大家更多借鉴
2018年1月15日 10:36
最后是怎么体外化的?
RG3 都一样
2018年1月15日 10:49
sion逆向进入EBU
Corsail头进入EBU
RG3进入
2018年1月16日 16:52
@毛懿

今天做了一个很郁闷的病例, 大家提提意见. LAD闭塞近端有大分支, entrypoint清晰但偏硬导丝如XTA和Pilot, UB3进不去, 软导丝如sion可以进入但是微导管无法跟进, 用了边支锚定也没成功, 还有什么别的方法

用7.5Fram透视?
是啊
上周那个GE机器只能透视7.5, 照相还是15
@崔锦钢 硬的闭塞只要方向明确, 还是前向容易穿透。前期如果前向7F GC, Cosair, CP12。很少穿不透。
今天透视照相都是7.5
现在机器照相也是7.5的?
西门子的没问题@高立建阜外医院
咱省着点吧
@克服一切非无产阶级思想 是的

主要前降近段都是病变, 左主干看着也不太好, 右冠开口还有问题, 没敢ADR
IVUS help to choose 3.0 ballon reverse CART, retro CP jumped into guidzella
randveous啥意思?
逆向导丝穿正向微导管
2018年2月7日 16:31
rendezvous, 用的是Corsail?
Guidzella facilitated stenting

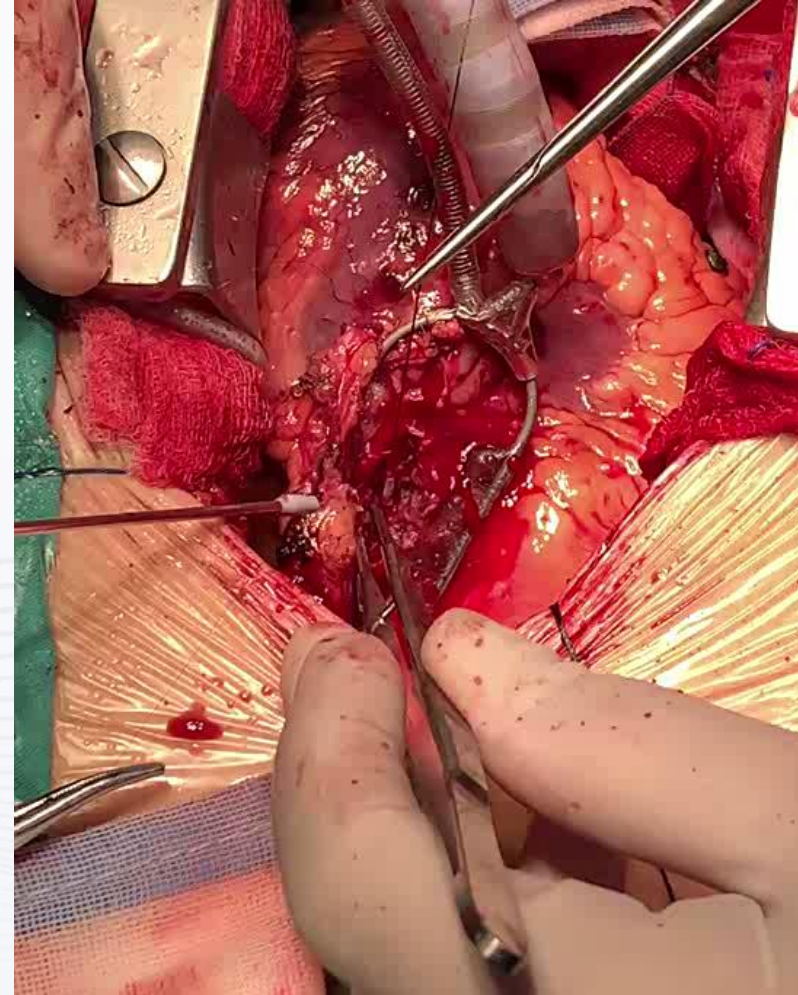
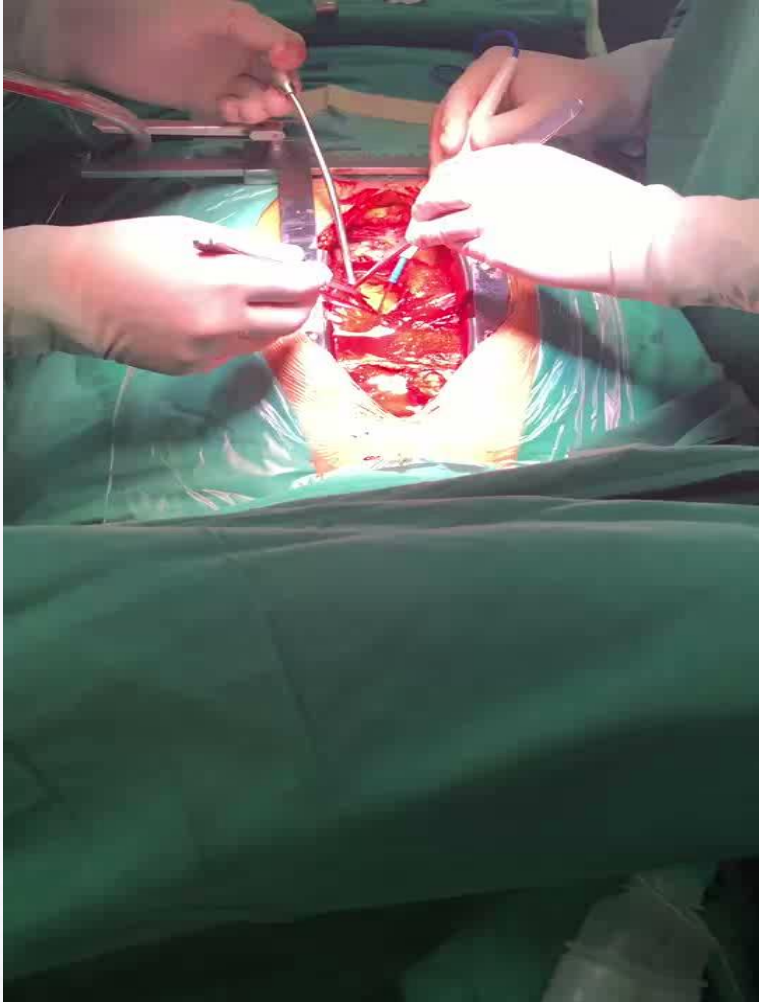
穿刺导丝太软了

#6 Communication



- Exchange the experience and technique
- Strengthen the concept of Hybrid strategy
- Carry out the CHIP CTO PCI

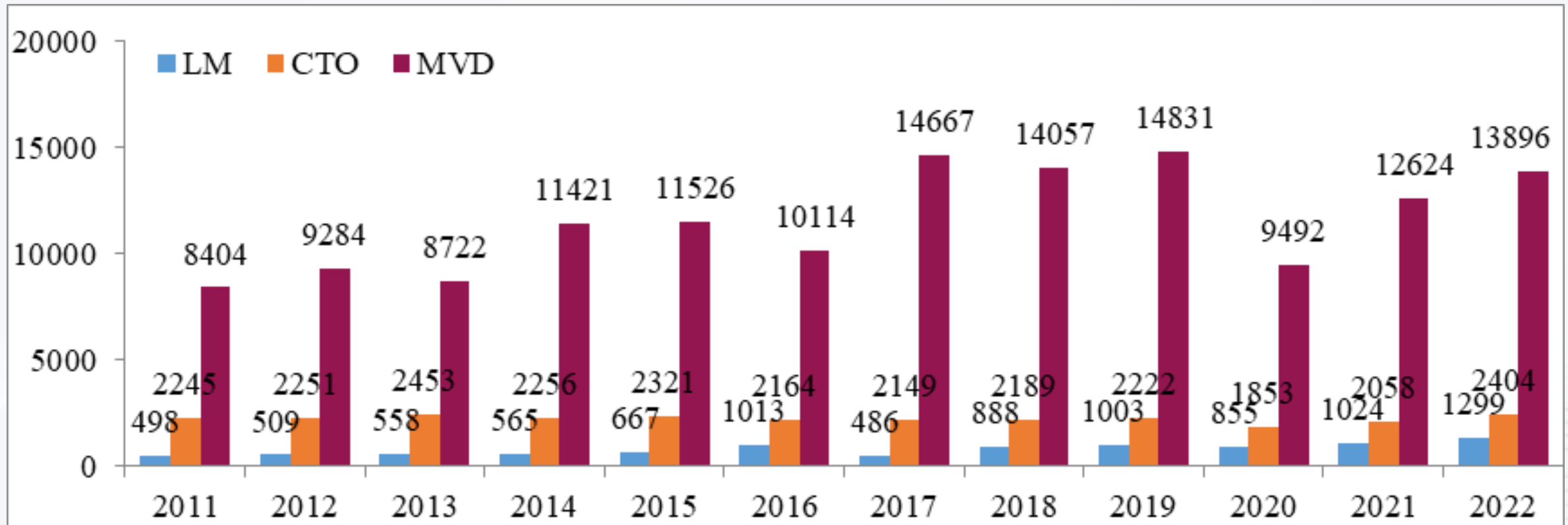
#7 Support from Cardiac surgeon



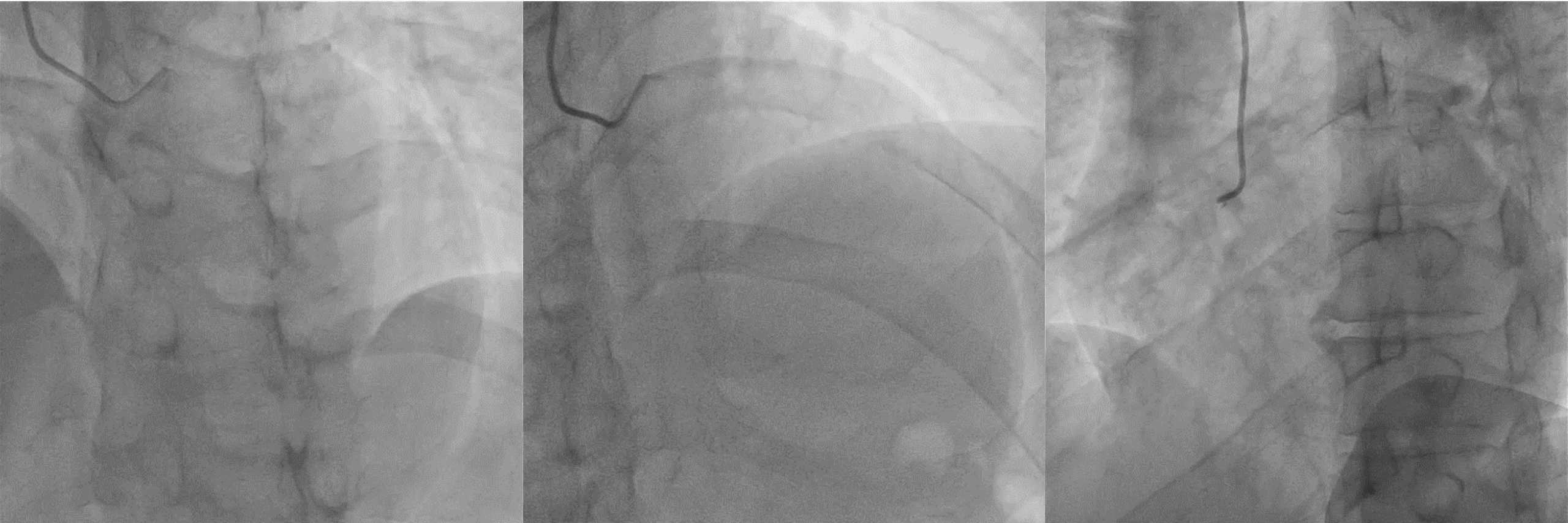
#8 CHIP-CTO training

High risk and complex coronary intervention

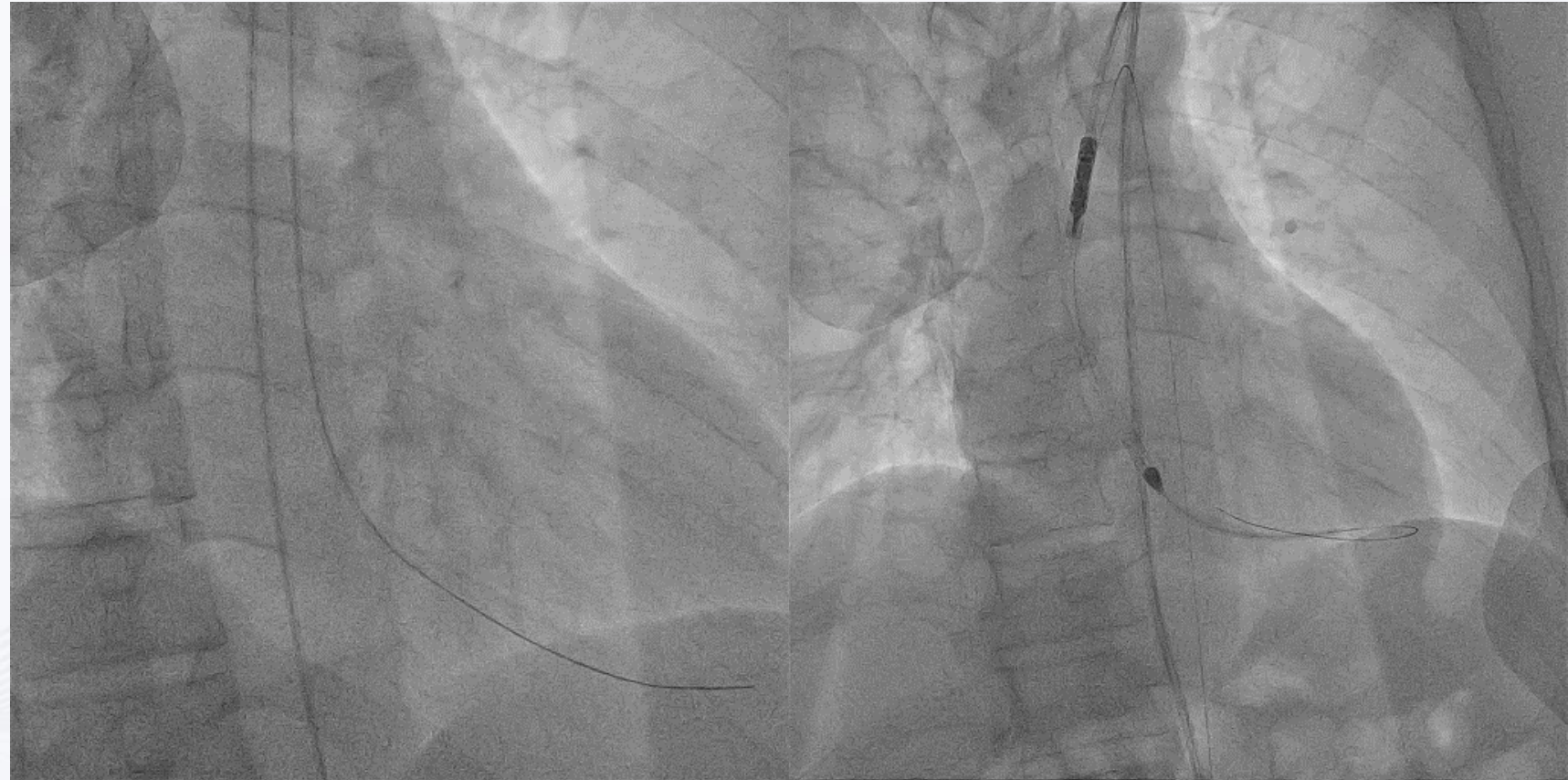
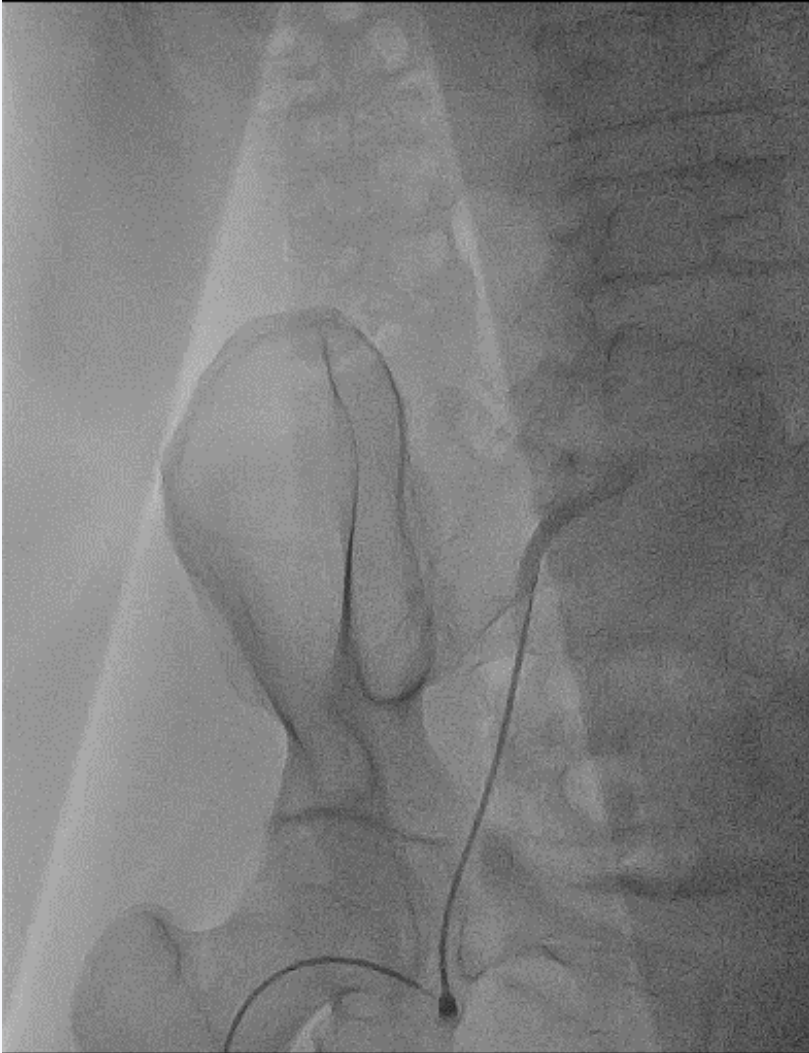
89.3% of MVD, 8.3% of LM, and 15.5% of CTO. 17.5% moderate to severe calcified lesion.



CASE: 52yr Male ,EF 32%,LVDD 66mm

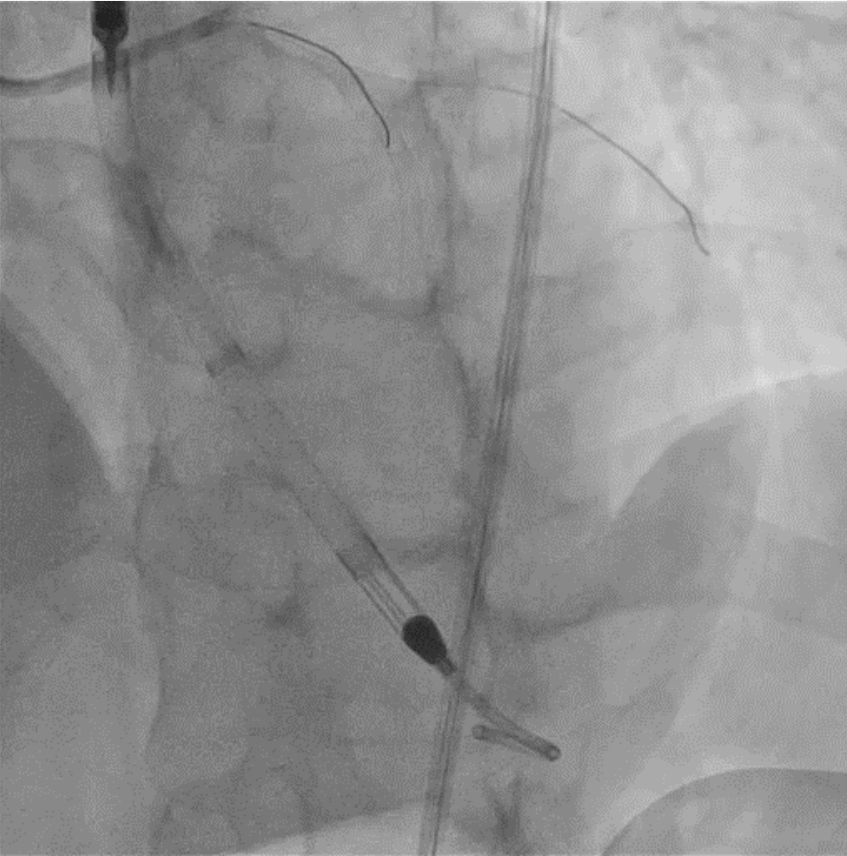


Percutaneous LV Assist Device

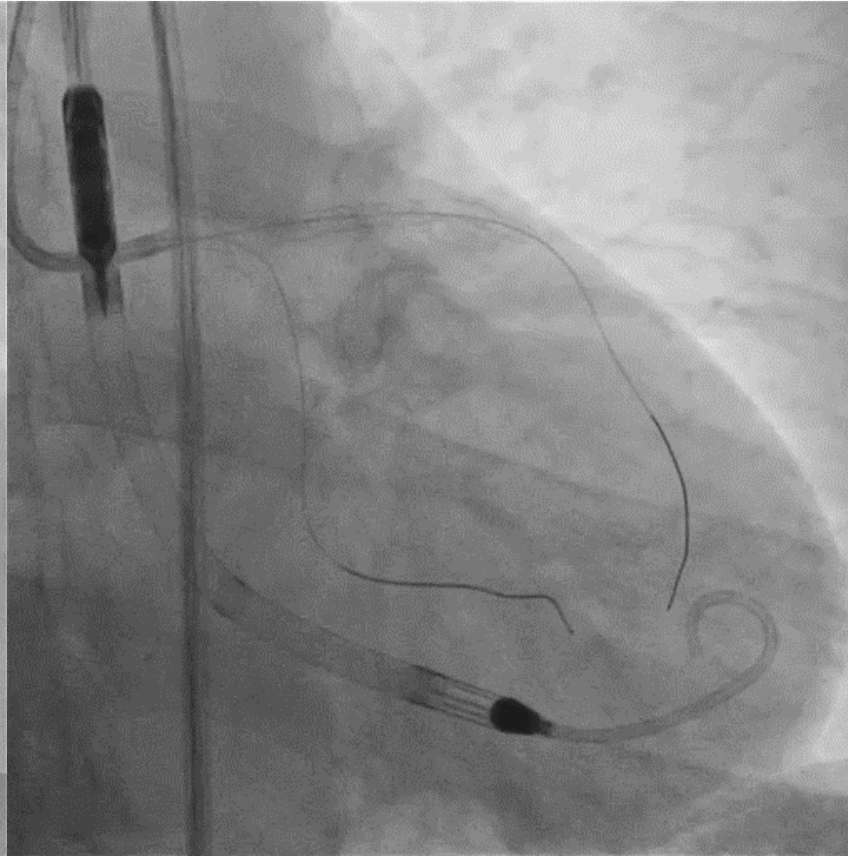


1M FU:EF 42%, LV 62mm

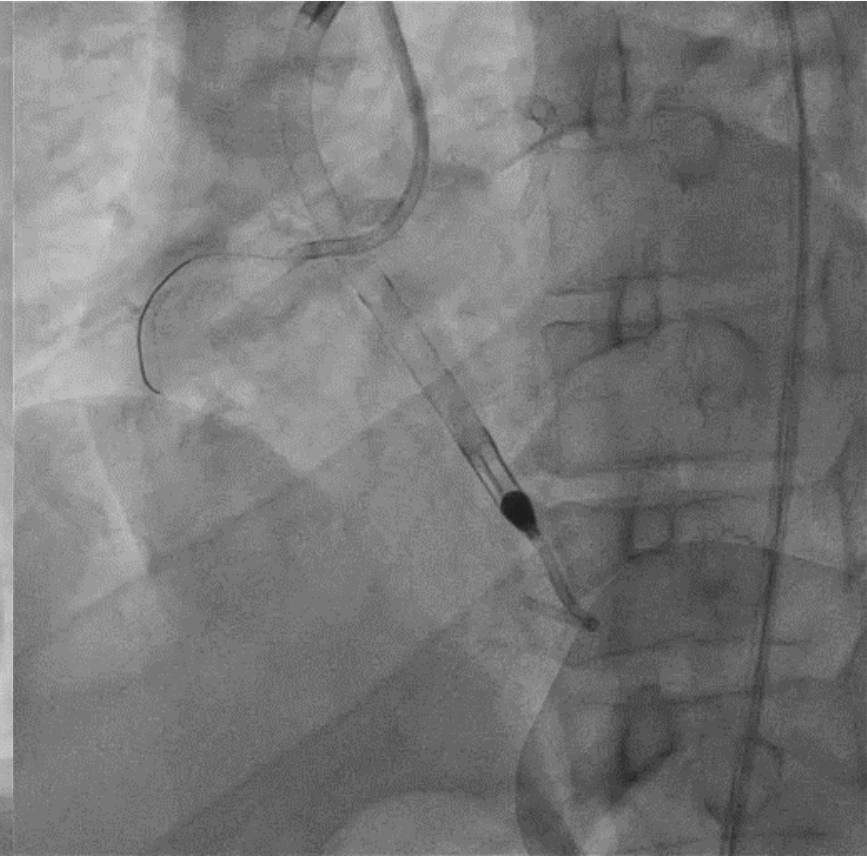
LAD



LCX

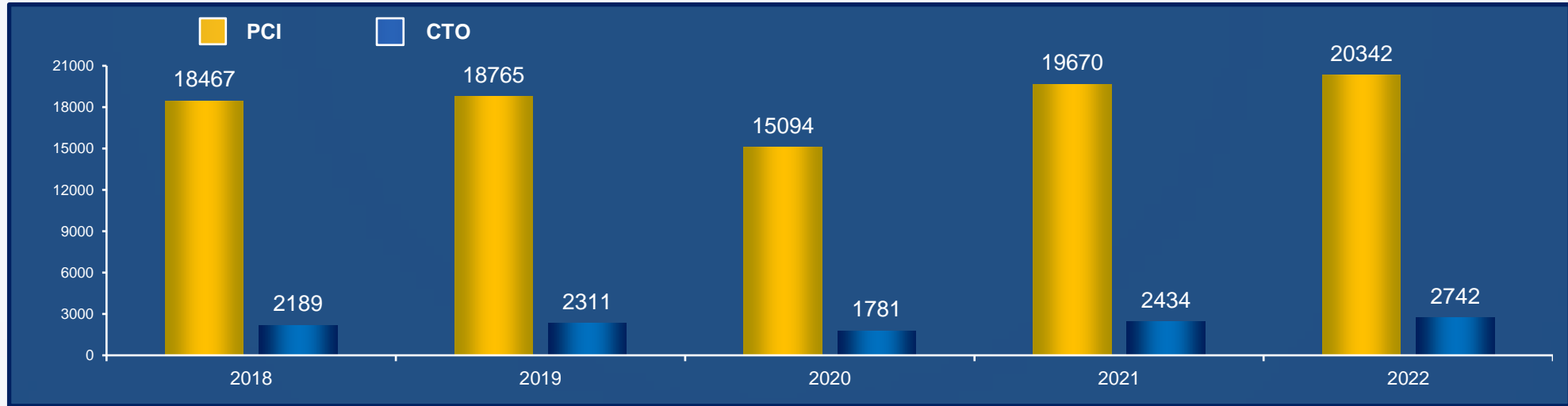


RCA

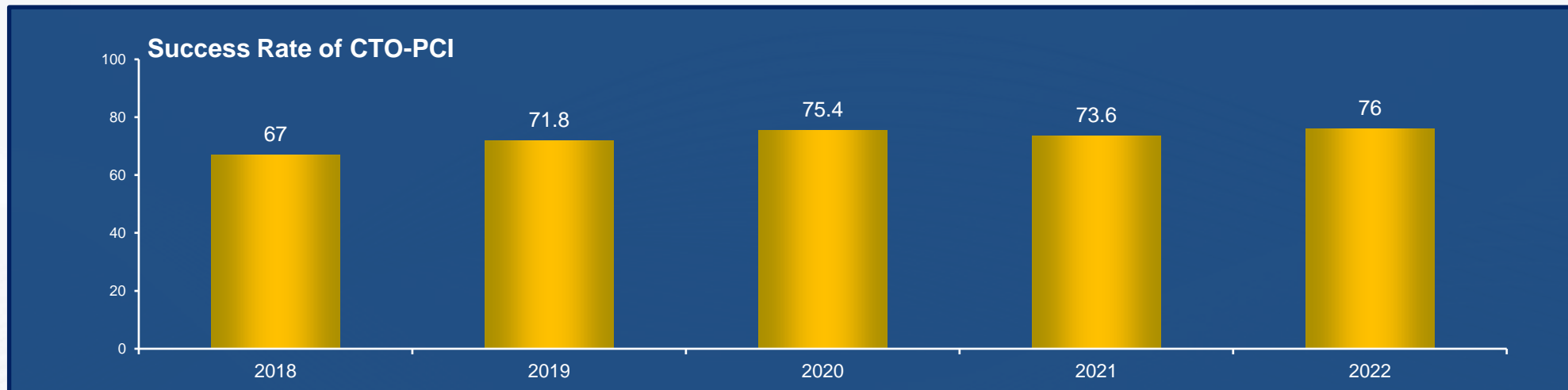


CTO PCI Average Success Rate

Case of PCI Procedures (N)



Success Rate of CTO-PCI (%)



CTO PCI at Well Trained Team(J score 1.9)

CTO-PCI constitutes around **16%** of all PCI procedures. The annual success rate of CTO-PCI has shown a steady increase over time.

