

Bifurcation Technique Review 2020 (2): **Upfront 2-stent Strategy**

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I have nothing to disclose !



2-stent vs. provisional stenting (PS)

European-based RCTs

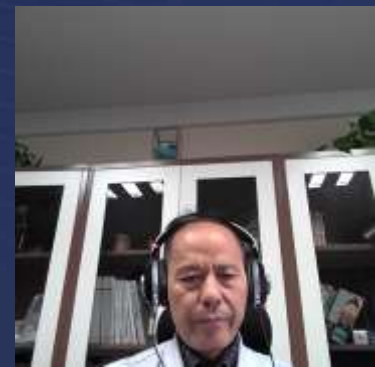
- CACTUS: PS vs classical crush
--No difference in MACE
- BBC-ONE: PS vs 2-stent
--No difference in MACE

➤ **PS is better**

DK-Crush

- DK crush vs PS: DKCRUSH II
--Lower TLR in DK group
- DK crush vs PS: DKCRUSH V
--LMd, lower TVF in DK Group

➤ **DK is better**



Reasons for Difference in Clinical Outcome among Trials

Lesions' complexity assessment

- **CACTUS:** PS vs classical crush
 - SB lesion length=8-mm
 - SB-DS =60%
- **BBC-ONE:** PS vs 2-stent
 - SB lesion length or SB-DS : not reported
- **NORDIC:** PS vs 2-stent
 - SB lesion length=3-11 mm
 - SB-DS=40%

- DK crush vs PS: **DKCRUSH II**
 - SB lesion length=12-mm
 - SB-DS =65%
- DK crush vs PS: **DKCRUSH V**
 - SB lesion length=16-mm
 - SB-DS =64%

Lesions' complexity = worse clinical results?



ESC 2018 guidelines has stated:

2-stent approach may be preferable for complex coronary bifurcations

- SB diameter $>2.75\text{mm}$,
- SB lesion length $> 5\text{-mm}$,
- difficult to access the SB after MV stenting

~~Trustable~~ ? \longrightarrow NEXT... How to define complex bifurcations ?



DEFINITION Criteria

Built in 1550 pts with bifurcations; validated in another 3550 pts with bifurcations

For Medina 1,1,1 or 0,1,1, SB diameter \geq 2.5-mm

Major Criteria

➤ For Left Main Bifurcation

- SB Lesion Length \geq 10-mm, and
- SB Diameter Stenosis \geq 70%

➤ For Non-left Main Bifurcation

- SB Lesion Length \geq 10-mm, and
- SB Diameter Stenosis \geq 90%

1 major

+

2 minors

||

Complex

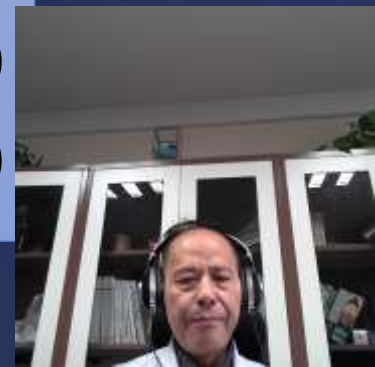
Minor Criteria

- > Mild Calcification
- Multiple Lesions
- Bifurcation Angle $< 45^{\circ}$ or $> 70^{\circ}$
- MV-RVD < 2.5 -mm
- MV Lesion Length ≥ 25
- Thrombus-containing



Diagnostic analysis relying on ROC curves

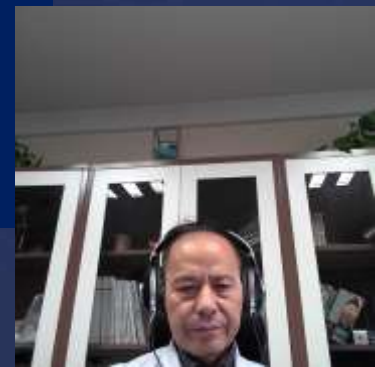
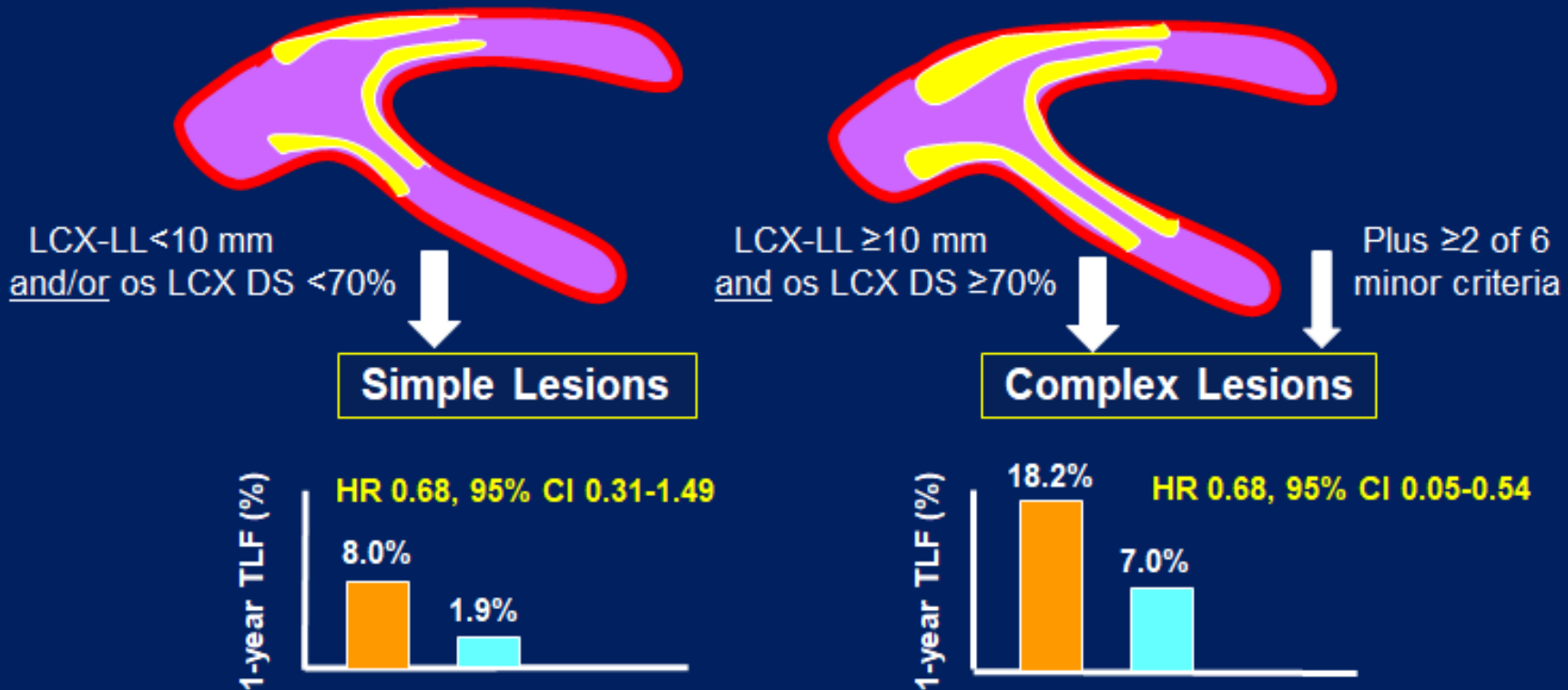
% for diagnostic value	Sensitivity	Specificity	P
LCX-DS \geq 70%, CX-LL \geq 10mm	78	71	0.001
SB-DS \geq 90%, SB-LL \geq 10mm	78	72	0.001
Minor criterion:			
>mild calcification	64	65	0.002
Multiple bifurcation	68	60	0.007
thrombus-containing	66	64	0.002
MV-LL \geq 25 mm	57	66	0.010
Angle $<$ 45 or $>$ 70	50	55	0.010
MV-RVD \leq 2.5 mm	52	57	0.010



Further test in DKCRUSH V study

DKCRUSH V

Target Lesion Failure at 1-Year Simple vs. Complex Bifurcation Lesions



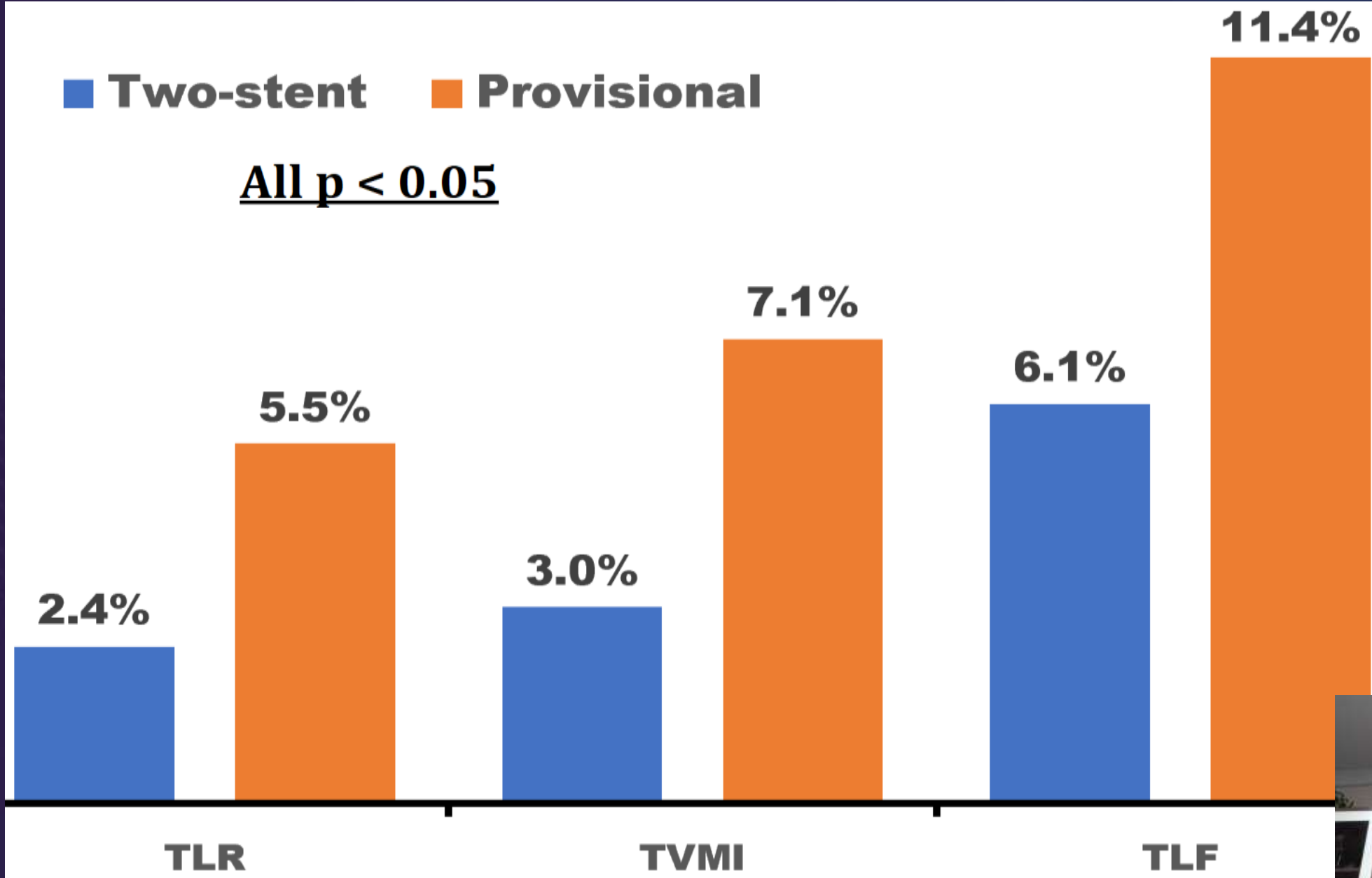
Repeat tested in **the DEFINITION II trial**

- Primary Endpoint: was the Target lesion failure (TLF)
- **Assumption**: the 1-year TLF rate was 14% after provisional treatment and 7% after 2-stent strategy
- DK-Crush and culotte stenting were recommended in the two-stent group

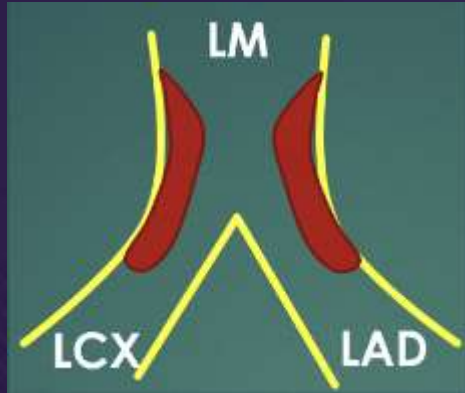


■ Two-stent ■ Provisional

All p < 0.05



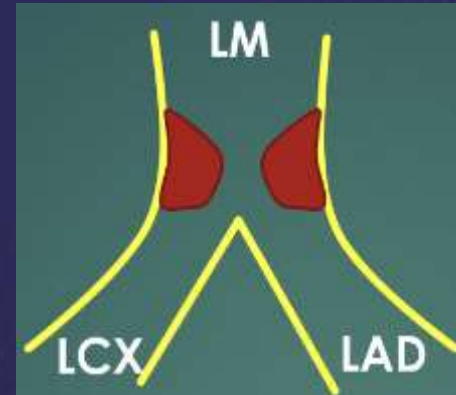
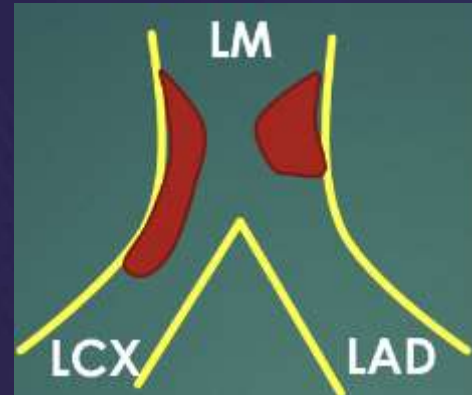
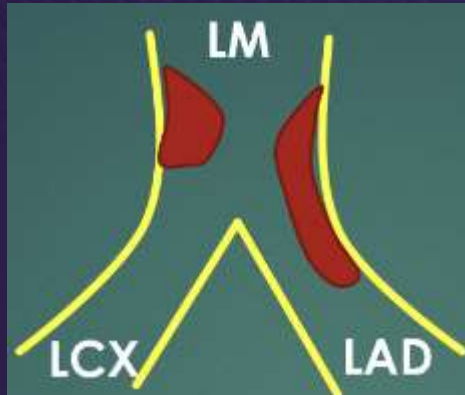
When is upfront 2-stent ?



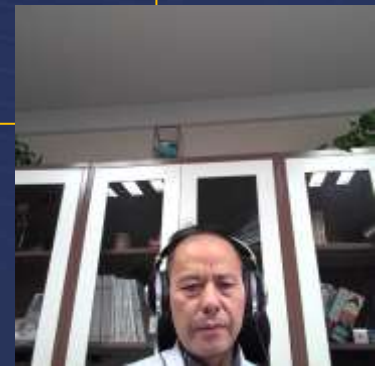
Medina 1,1,1 or 0,1,1 bifurcations
SB-LL 10-mm, SB-DS 70% or 90%

DEFINITION criteria defined complex bifurcations

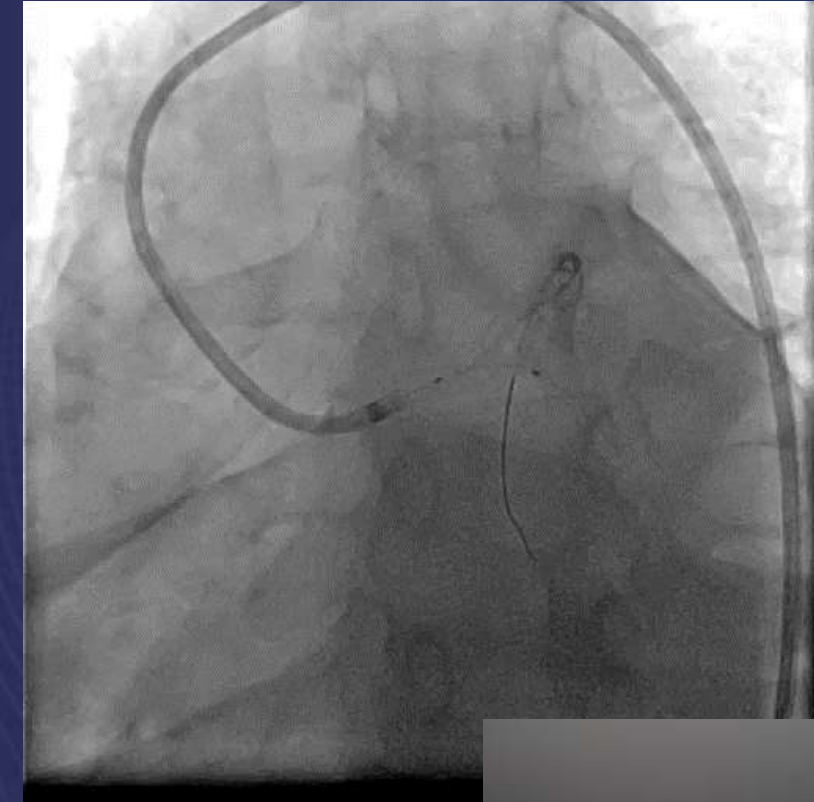
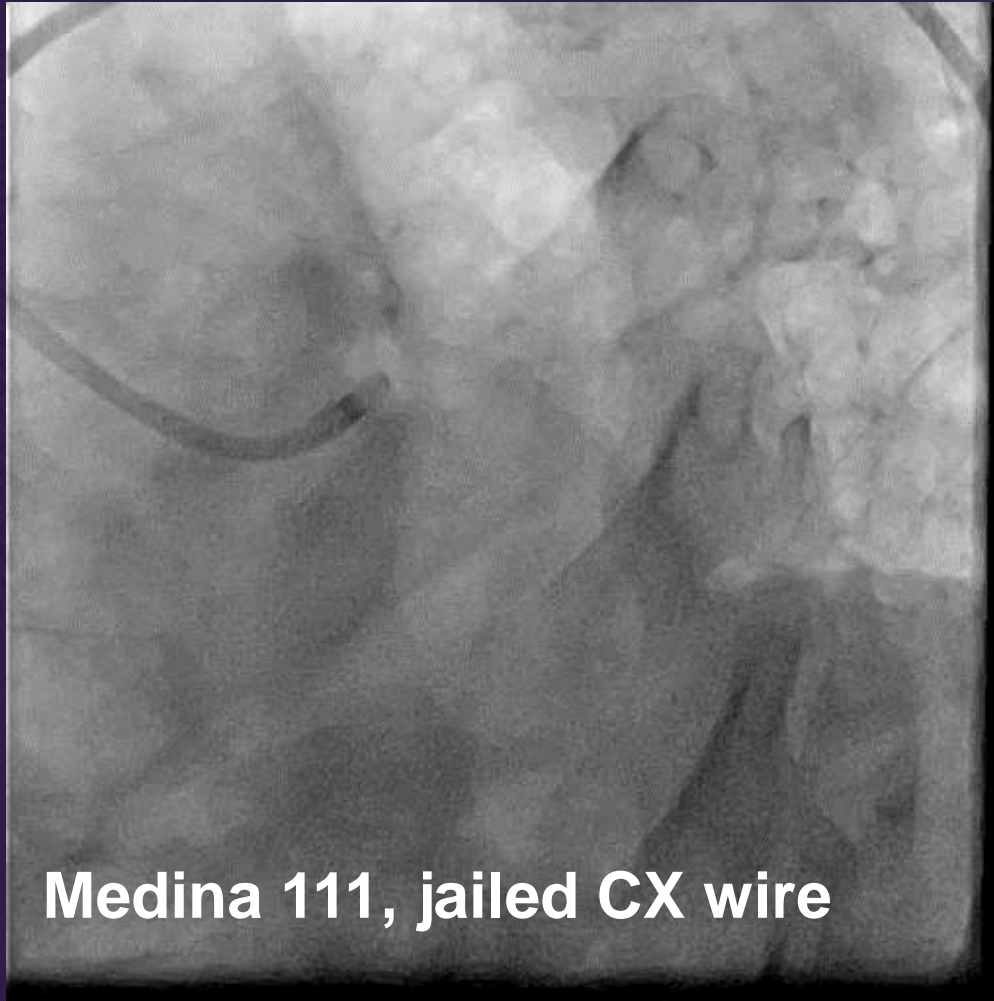
2-stent approach,
DK crush is better



Provisional with
1- or 2-stent



Representative of cases



Thanks for your attention !

