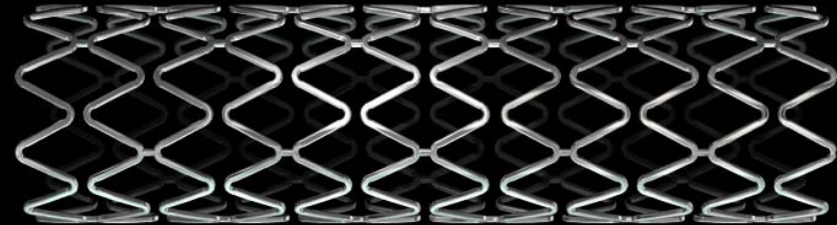
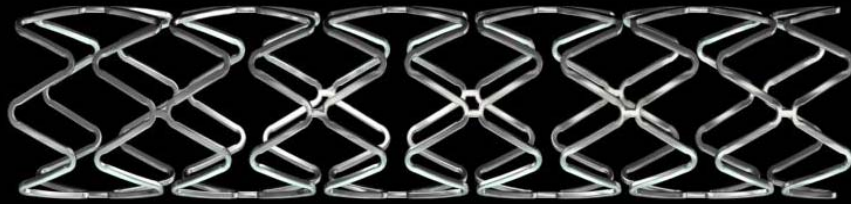


Stent Design Comparison and Clinical perspectives

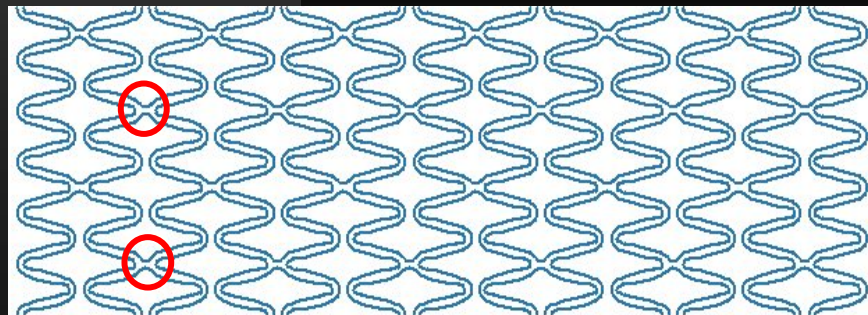
Yutaka Hikichi, M.D.
Saga University School of Medicine
Saga, Japan

Stent Design



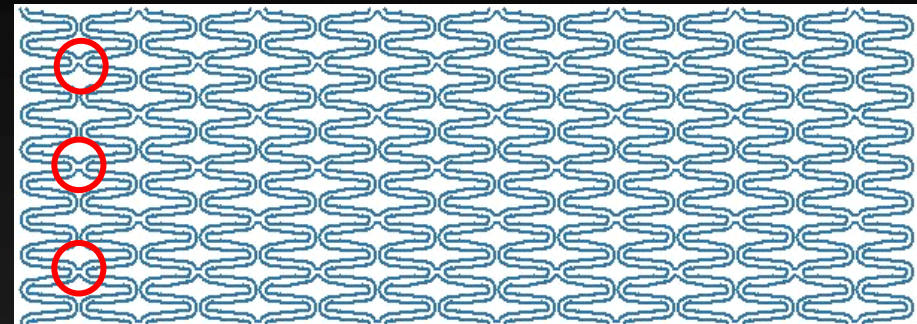
ϕ 2.5mm, 3.0mm (6 crowns)

ϕ 3.5mm (9 crowns)



2 connections

1.4mm



3 connections

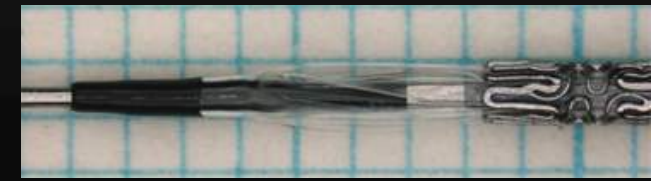
1.4mm

Tip profiles and the design

Nobori



Cypher Select+



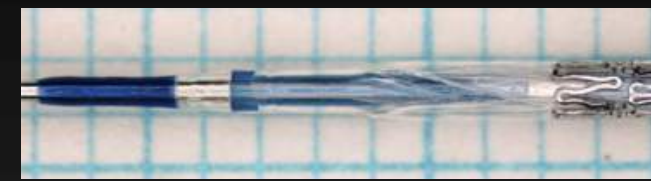
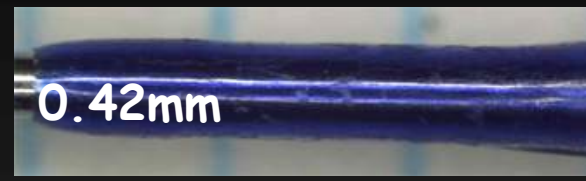
Taxus Liberte



Endeavor



Xience



BioMatrix



Profile comparison

G.W. exit port



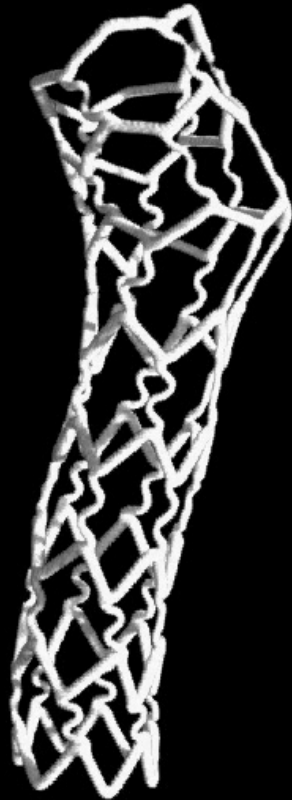
Kissing balloon technique

Similar to the real world

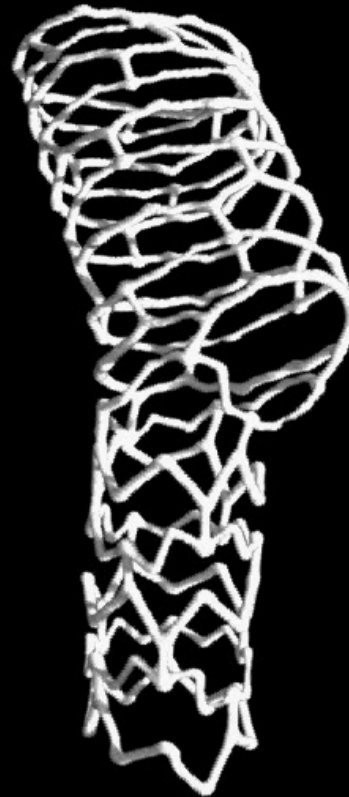


The three
dimensional
model

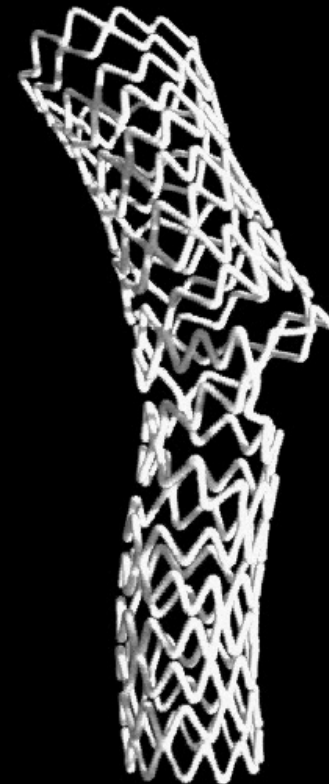
Single stent+KBT



Cypher



TAXUS Express



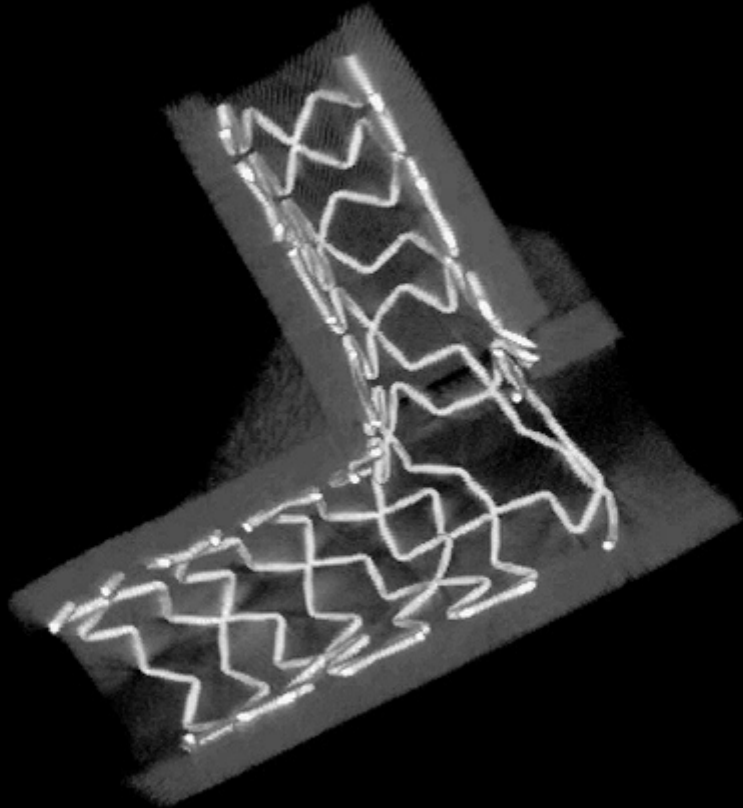
ENDEAVOR

Single stent+KBT

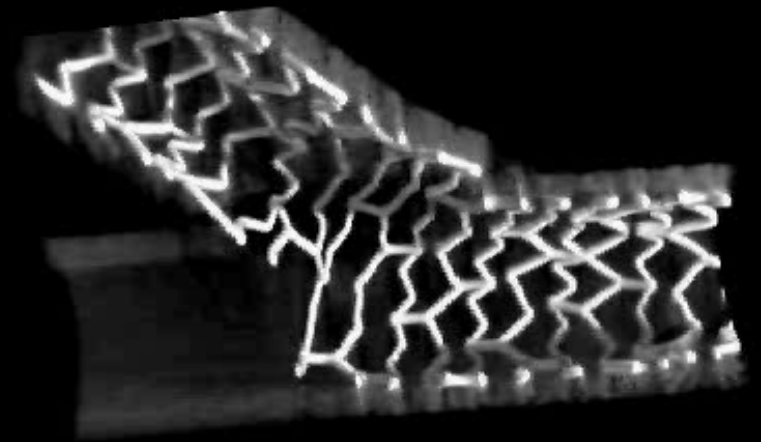


NOBORI

Bend lesion + KBT



NOBORI



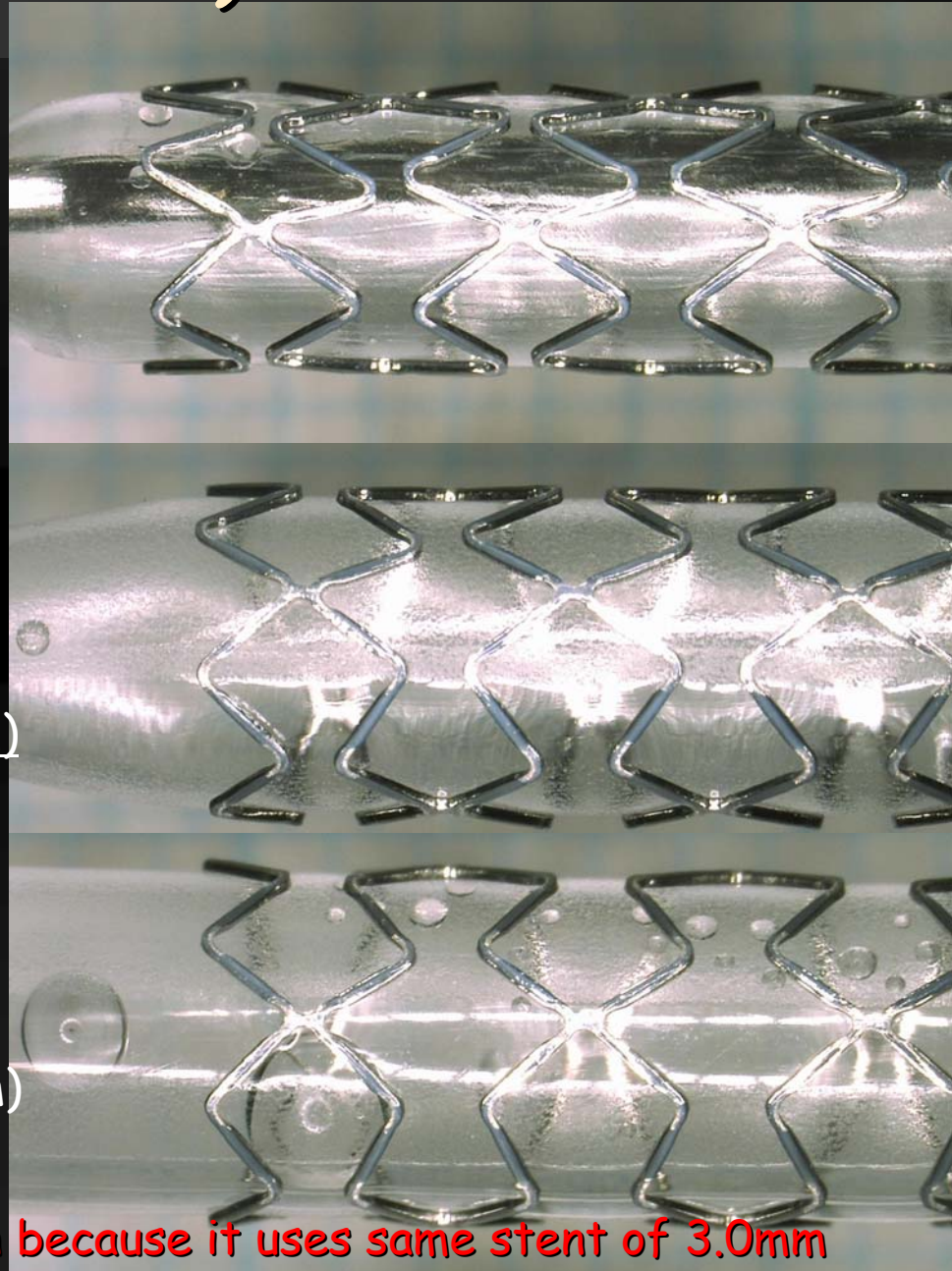
TAXUS Express

3.0mm (2.5mm) / 28mm

Nominal size (8atm)
by delivery balloon

Half (0.5mm) up
by 3.5mm Post balloon (10atm)
(3.0mm post balloon for 2.5mm 10atm)

One size (1mm) up
by 4.0mm Post balloon (10atm)
(3.5mm post balloon for 2.5mm 10atm)



* 2.5mm shows the same cell condition because it uses same stent of 3.0mm

3.5mm / 28mm

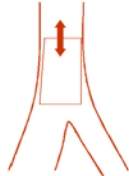


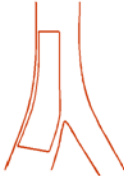

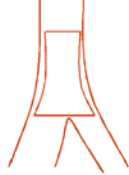



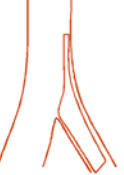
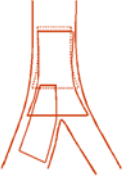


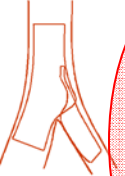
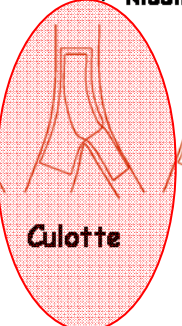






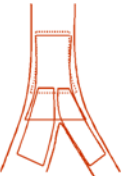

Nominal size (8atm)
by delivery balloon

Half (0.5mm) up
by 4.0mm Post balloon (10atm)

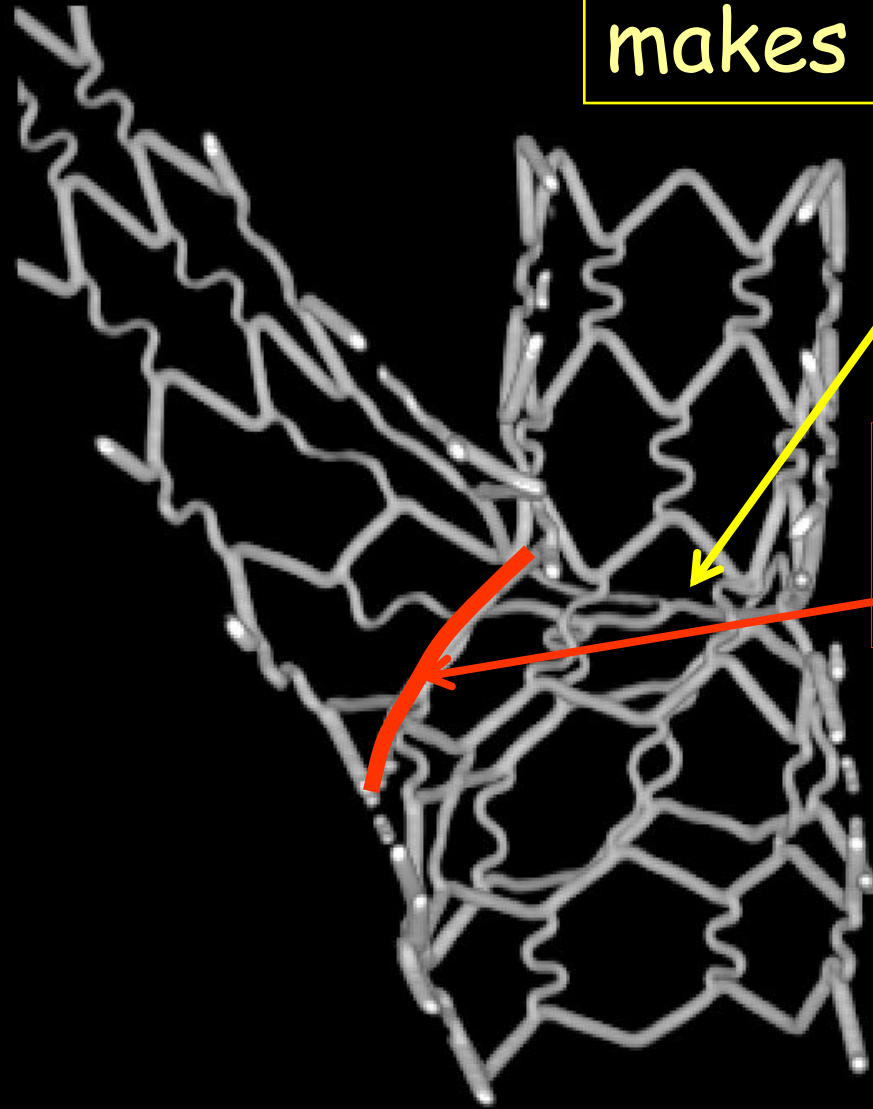
One size (1mm) up
by 4.5mm Post balloon (10atm)



MADS classification

Intention	M	A	D	S
Final	Main prox. first	Main Across side first	Distal first	Side branch first
1st stent	 <p>PM stenting</p>	 <p>MB stenting across SB</p>	 <p>DM stenting</p>  <p>Provisional SKS</p>	 <p>SB ostial stenting</p>
After balloon	 <p>Skirt</p>	 <p>MB stenting + SB balloon</p>  <p>MB stenting + kissing</p>		 <p>SB minicrush</p>  <p>SB crush</p>
2 stents	 <p>Skirt + DM</p>  <p>Skirt + SB</p>	 <p>Elective T stenting</p>  <p>Internal crush</p>  <p>Culotte</p>  <p>TAP</p>	 <p>V stenting</p>  <p>SKS</p>	 <p>Syst. T Stenting</p>  <p>Minicrush</p>  <p>Crush</p>
3 stents	 <p>Extended V</p>		 <p>Trouser legs and seat</p>	

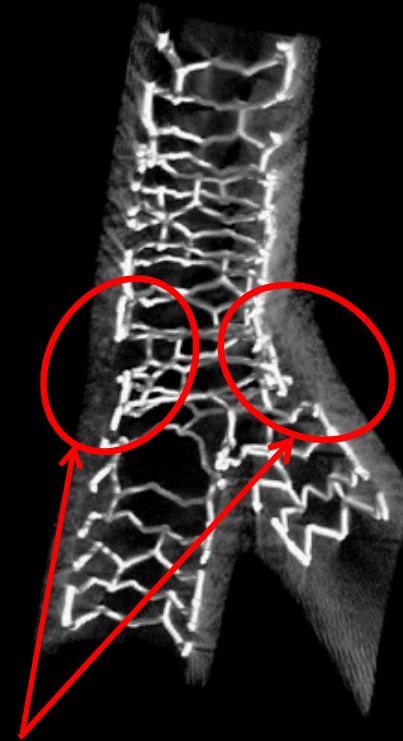
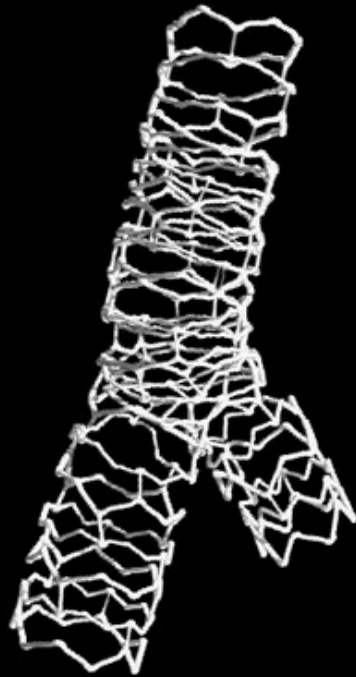
Full expanded stent strut
makes napkin-ring lesion



Remaining strut in
the vessel lumen

Causes of the
malapposition

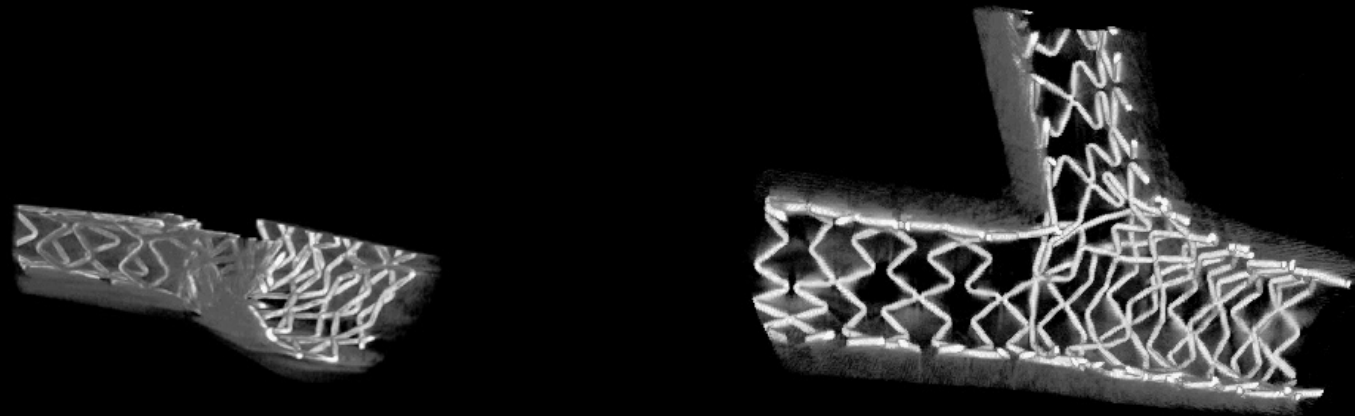
Culotte stent: TAXUS Express



Incomplete apposition

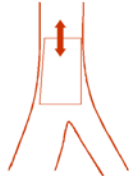



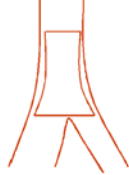


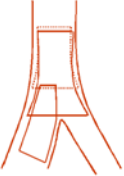



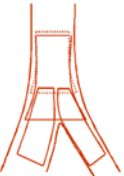

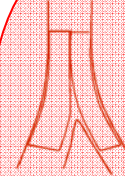

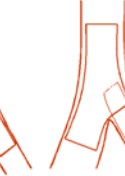
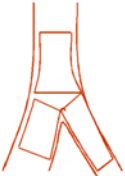

4.0 × 3.0 × 45°

Culotte stent: NOBORI

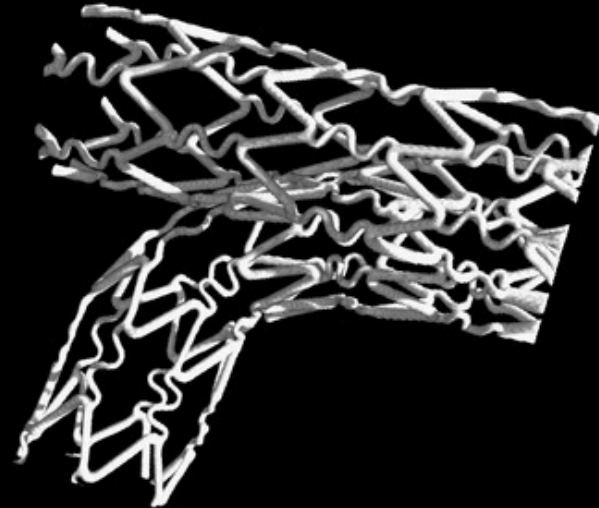


$4.0 \times 3.0 \times 80^\circ$

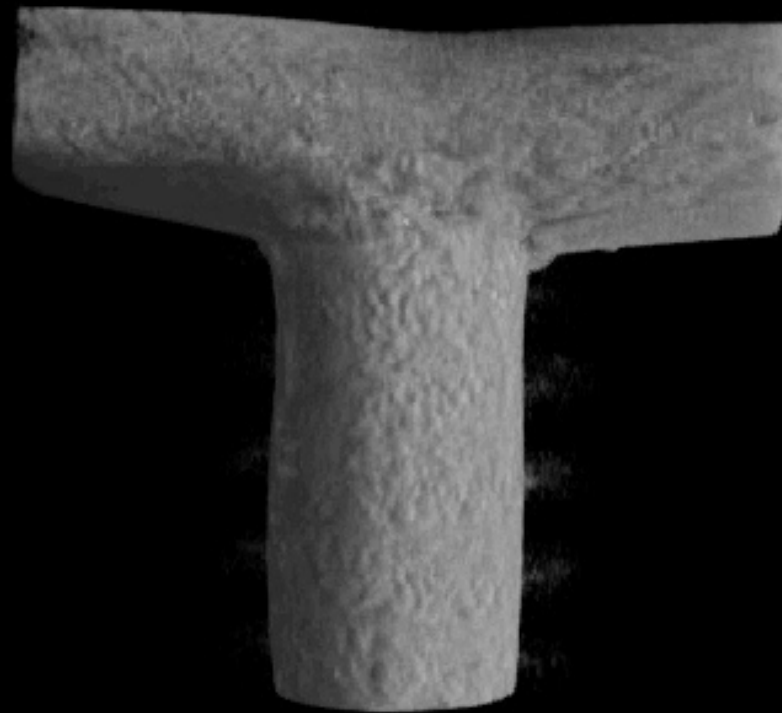
Simultaneous Kissing stent

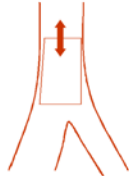


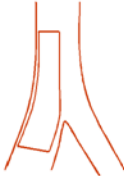

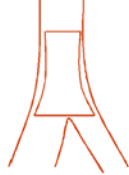




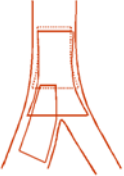







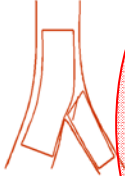


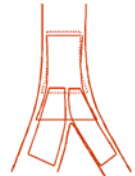
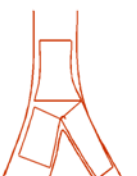
Intention	M	A	D	S
Final	Main prox. first	Main Across side first	Distal first	Side branch first
1st stent	 PM stenting	 MB stenting across SB	 DM stenting	 SB ostial stenting
After balloon	 Skirt	 MB stenting + SB balloon		 SB minicrush
2 stents	 Skirt + DM	 Internal crush	 V stenting	 Syst. T Stenting
3 stents	 Extended V	 Culotte	 SKS	 Crush
		 TAP	 Trouser legs and seat	 Minicrush

Simultaneous Kissing stent (SKS)

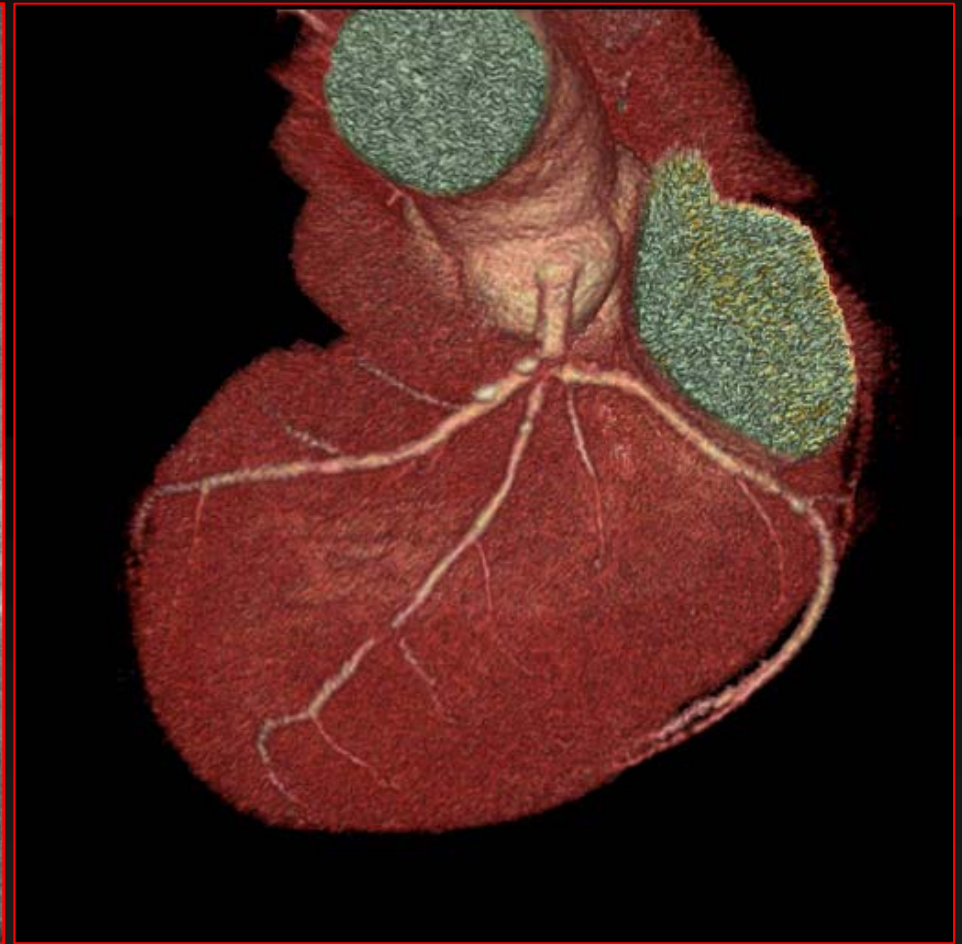
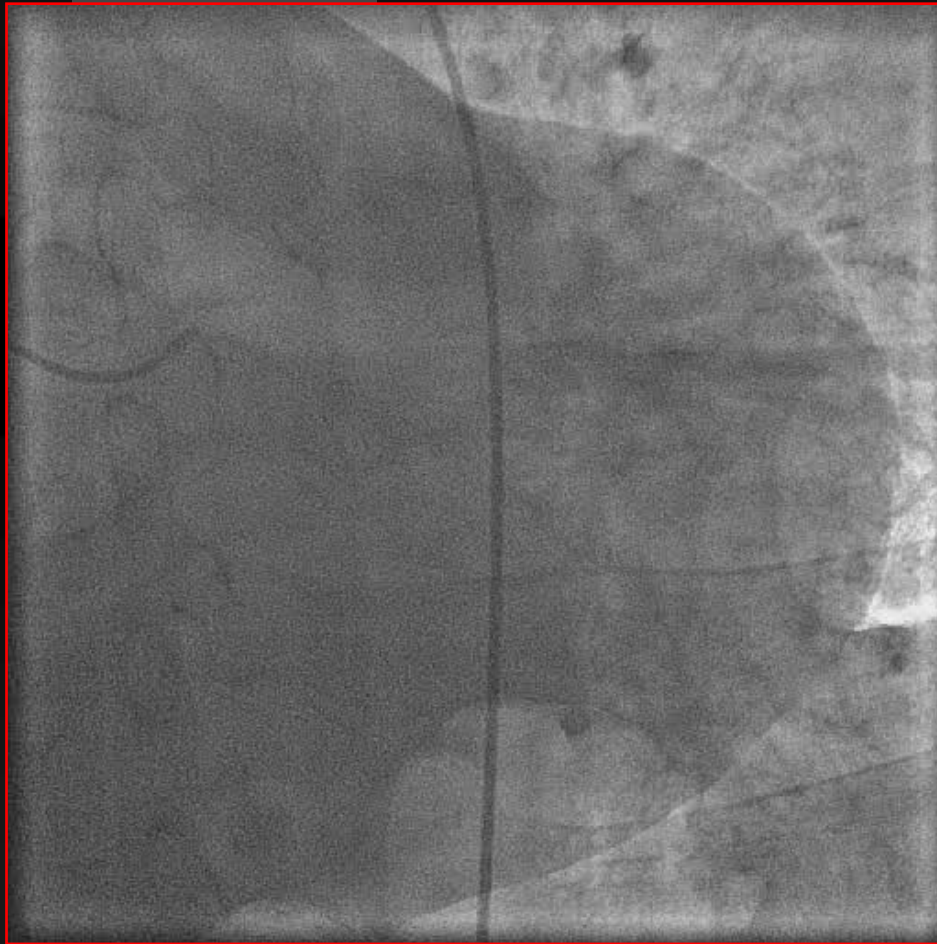


SKS

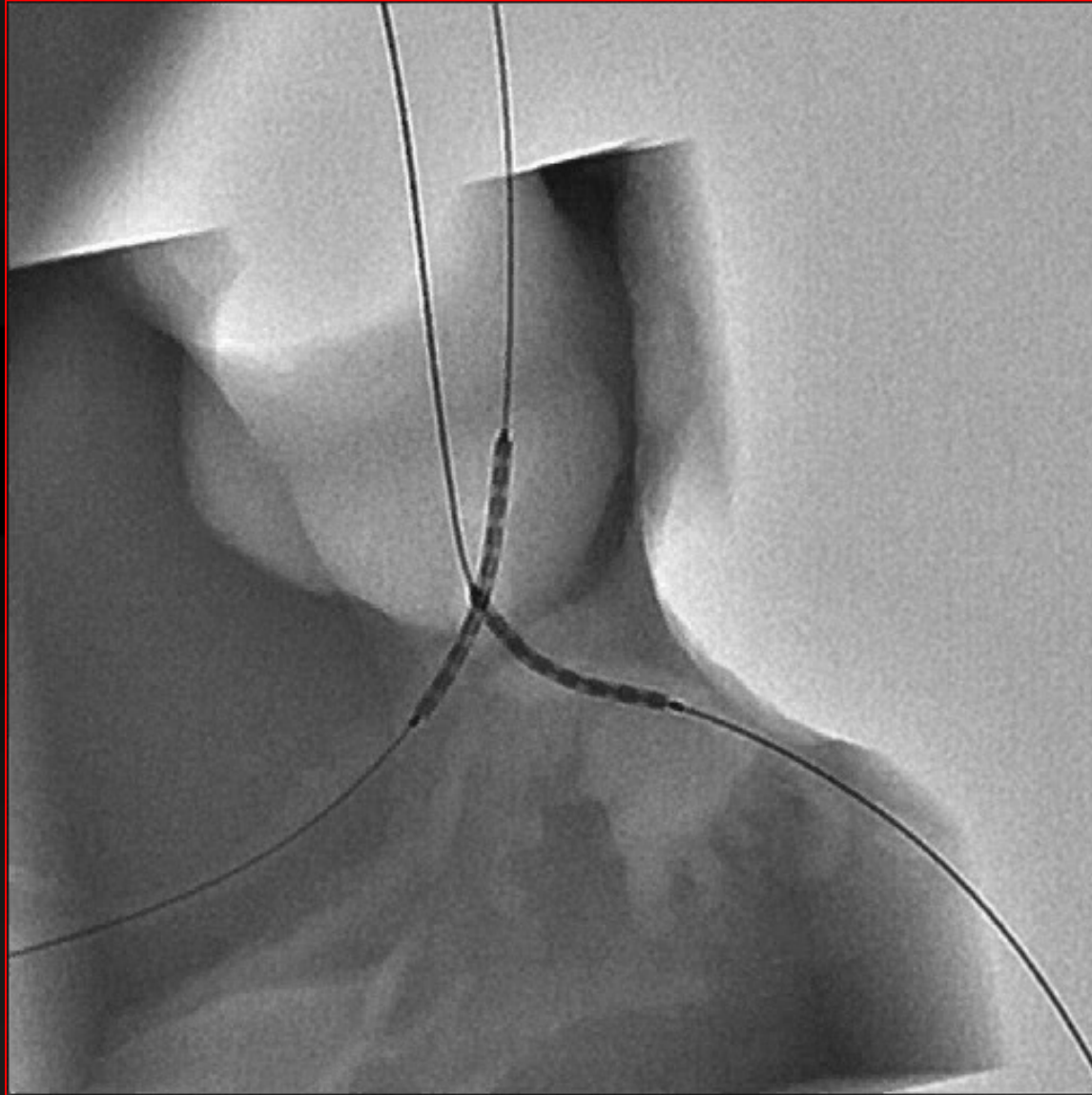


Intention	M	A	D	S
Final	Main prox. first	Main Accross side first	Distal first	Side branch first
1st stent	 <p>PM stenting</p>	 <p>MB stenting across SB</p>	 <p>DM stenting</p>  <p>Provisional SKS</p>	 <p>SB ostial stenting</p>
After balloon	 <p>Skirt</p>	 <p>MB stenting + SB balloon</p>  <p>MB stenting + kissing</p>		 <p>SB minicrush</p>  <p>SB crush</p>
2 stents	 <p>Skirt + DM</p>  <p>Skirt + SB</p>	 <p>Elective T stenting</p>  <p>Internal crush</p>  <p>Culotte</p>  <p>TAP</p>	 <p>V stenting</p>  <p>SKS</p>	 <p>Syst. T Stenting</p>  <p>Minicrush</p>  <p>Crush</p>
3 stents	 <p>Extended V</p>		 <p>Trouser legs and seat</p>	

large vessel diameter and bifurcation angle



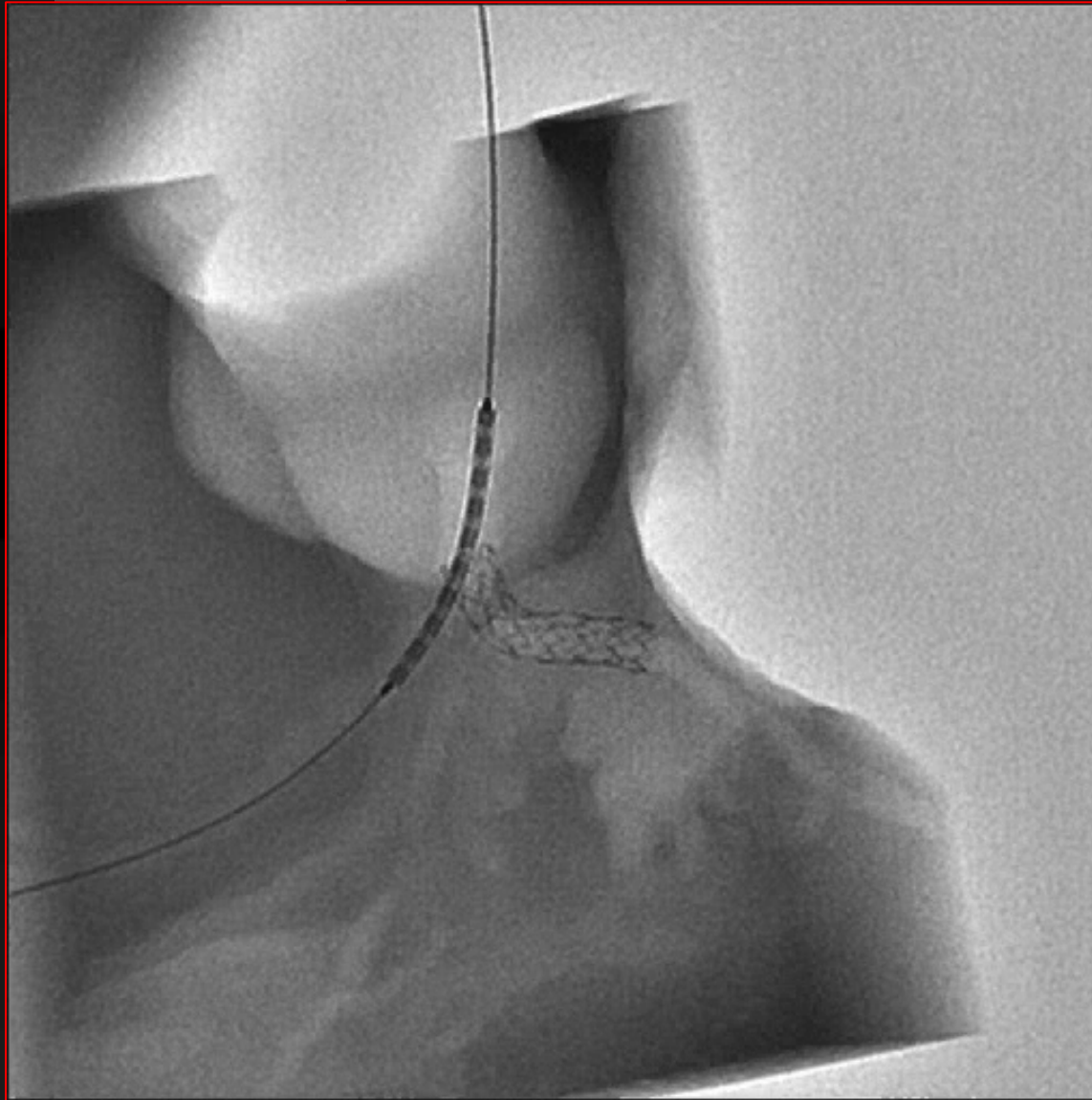
Minicrush stenting



Step 1

SB stent
implantation under
minimal overlapping
with MV stent

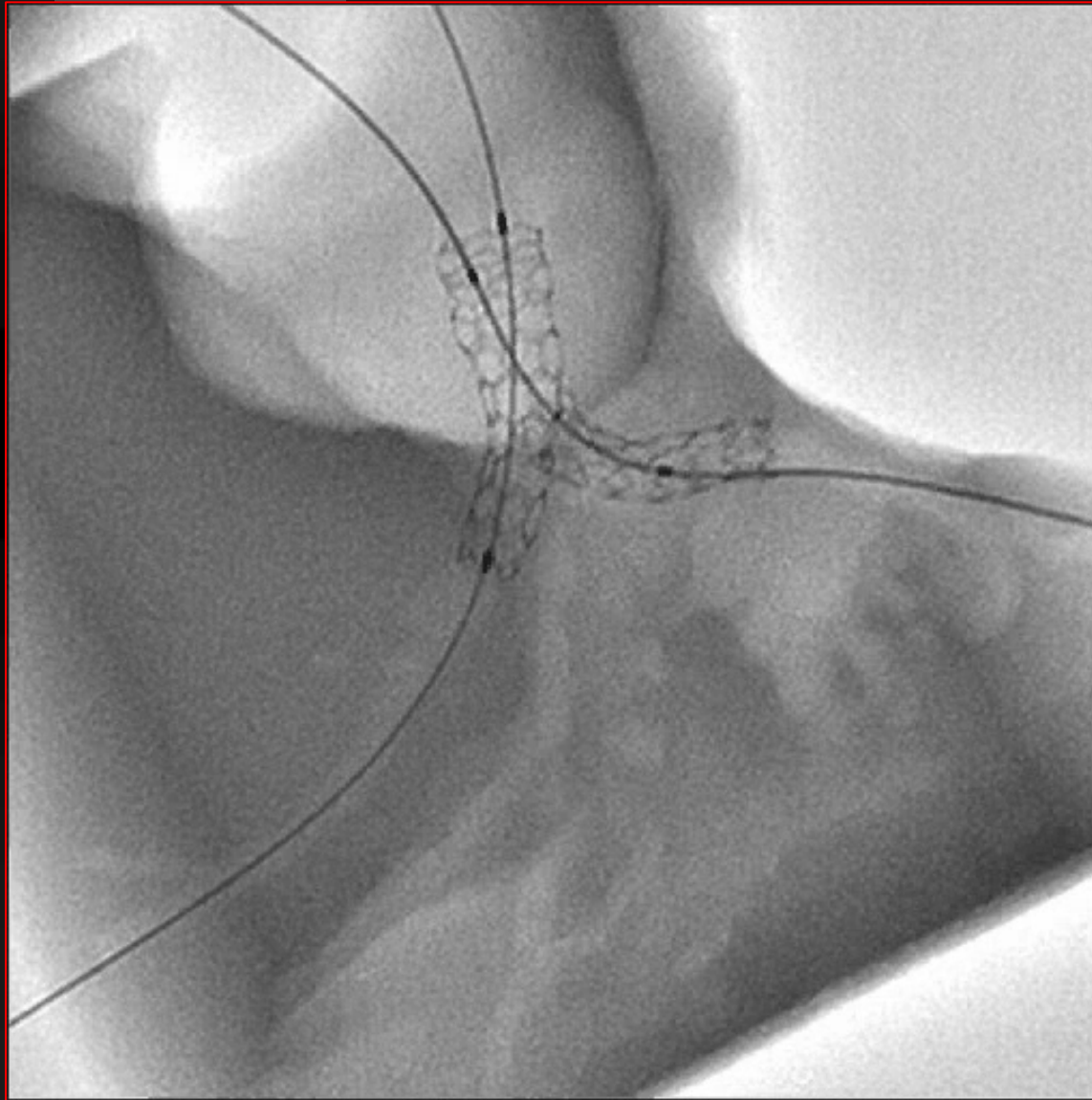
Minicrush stenting



Step 2

MV stent inflation

Minicrush stenting



Step 3: **KBT**

After guide wire recrossing through the two struts.

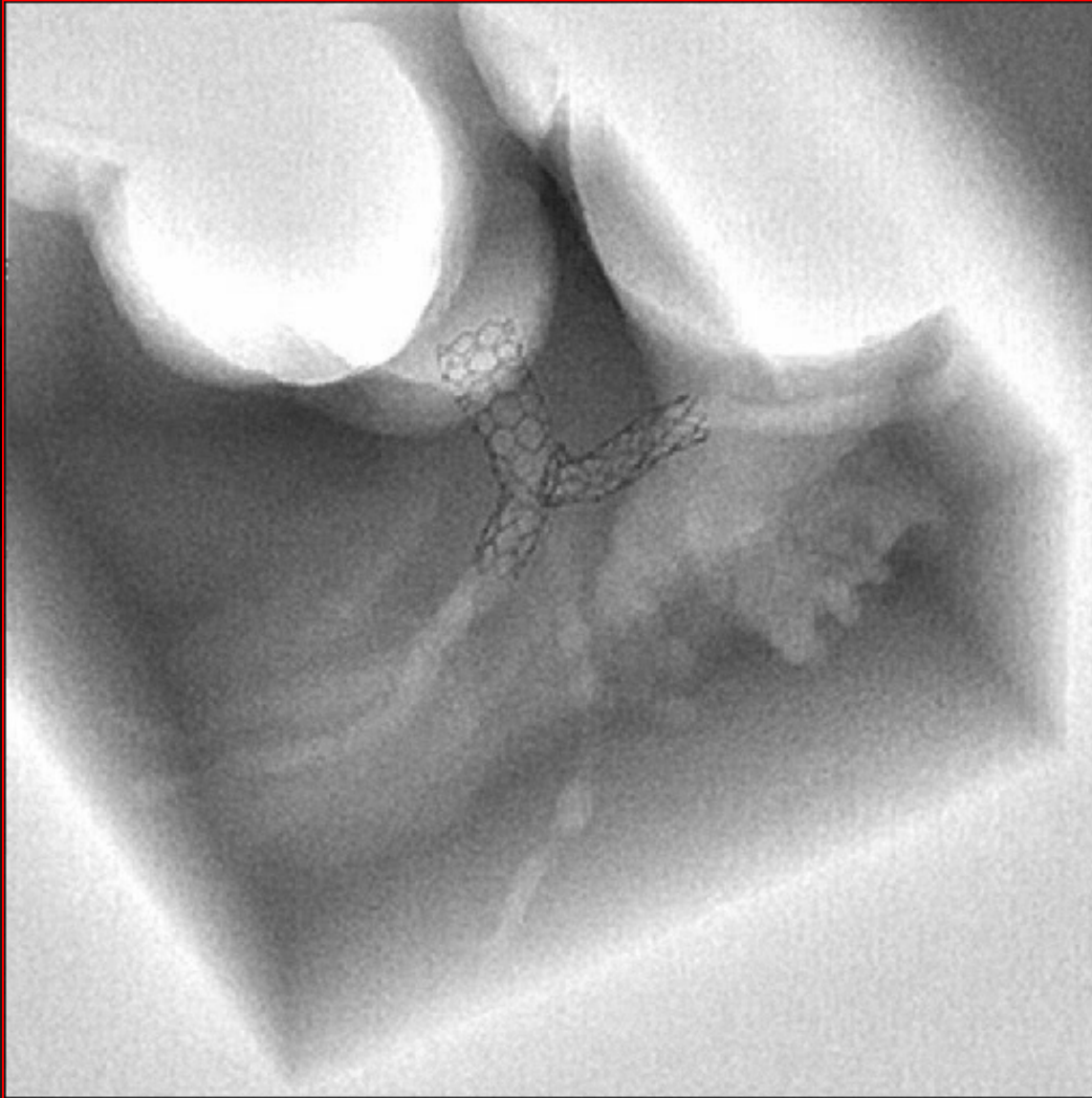
Bal. size:

Ø3.5 × Ø3.5mm

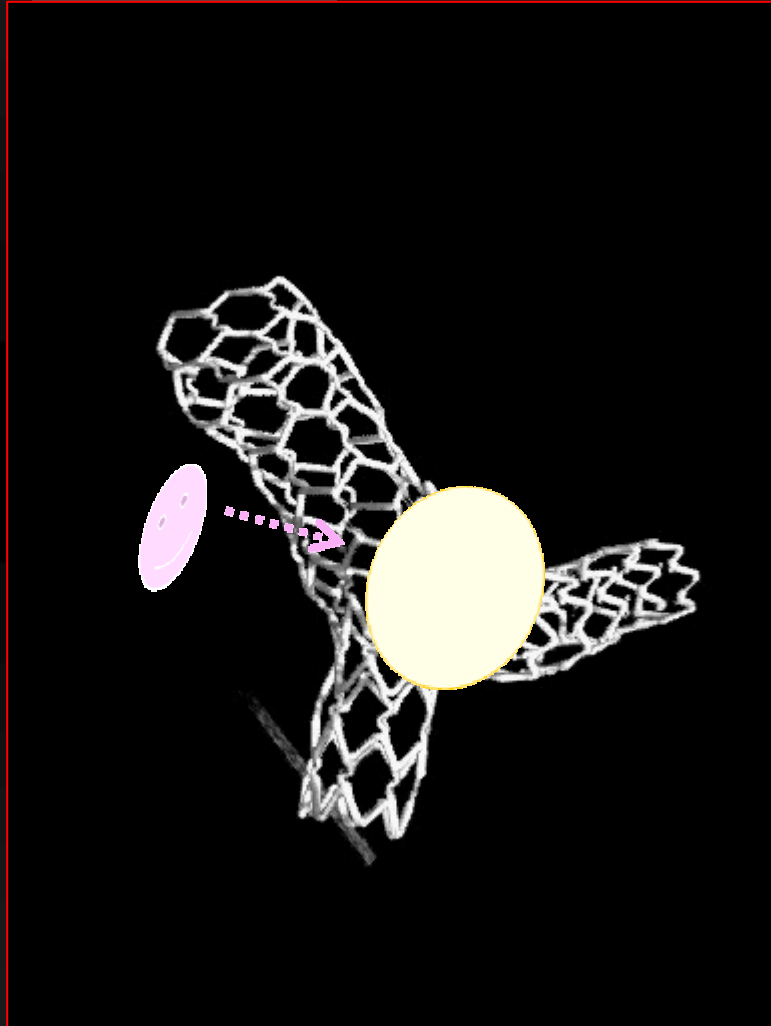
18 atm

Minicrush stenting

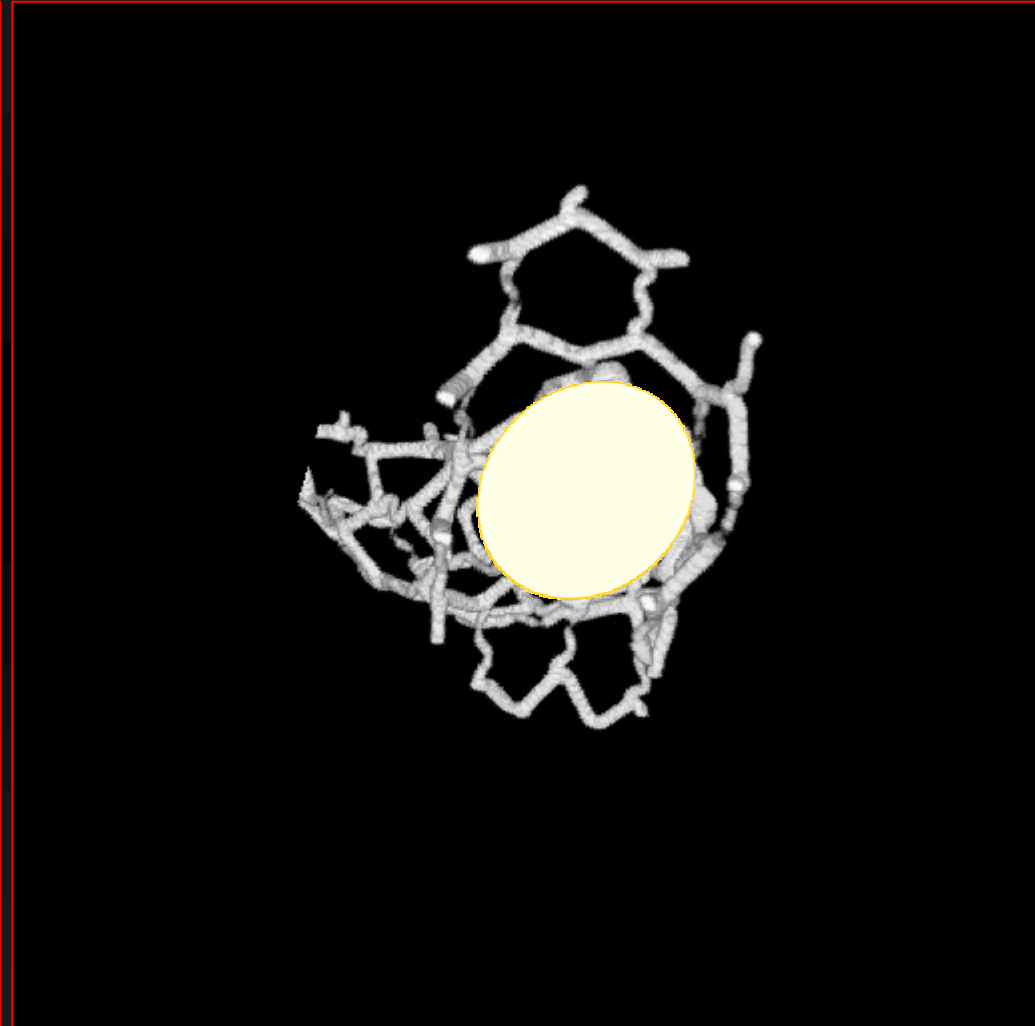
Step 4: **Final**



Minicrush using Cypher stent



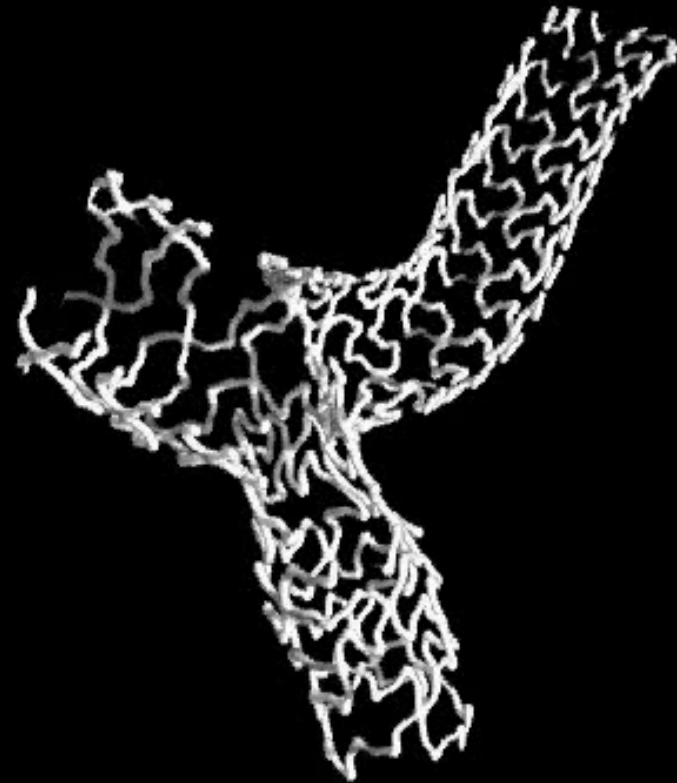
Whole view



Close up



NOBORI: Culotte



Liberte: Mini Crush

Conclusion

- The ability of NOBORI stent could be found out by performing bench test.
- NOBORI has a unique shape and finer stent delivery system.
- We can expect the effectiveness of this stent especially in complex cases.