

The "Spherical" Balloon : A dedicated balloon  
for optimization of the Main Branch stent  
for provisional SB stenting

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with imaging requested by Remo Albiero

Imaging by

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and John Ormiston

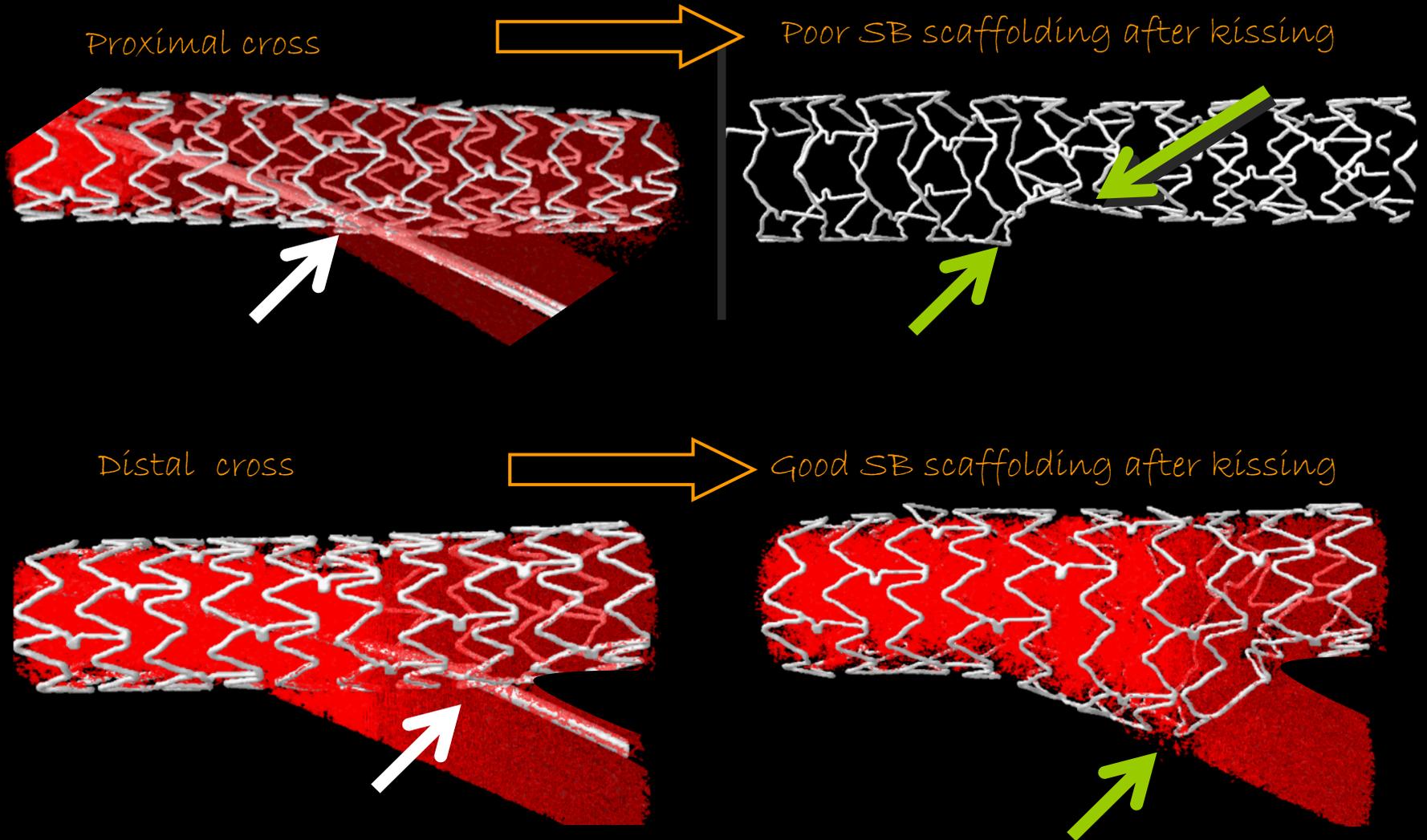
Mercy Angiography

Auckland New Zealand

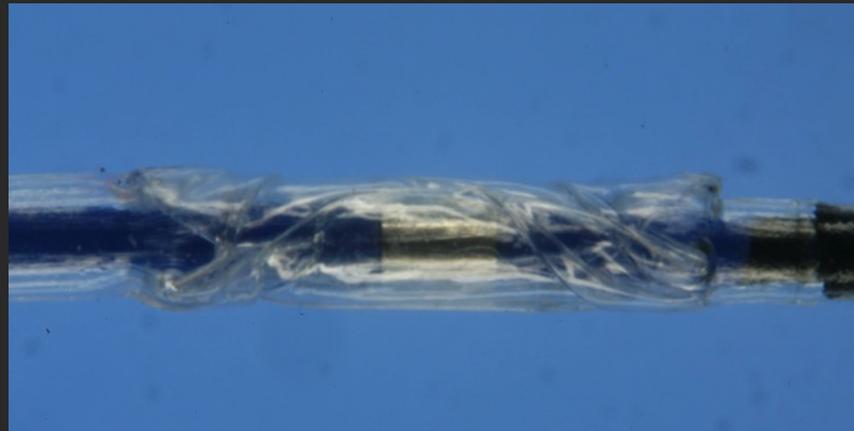
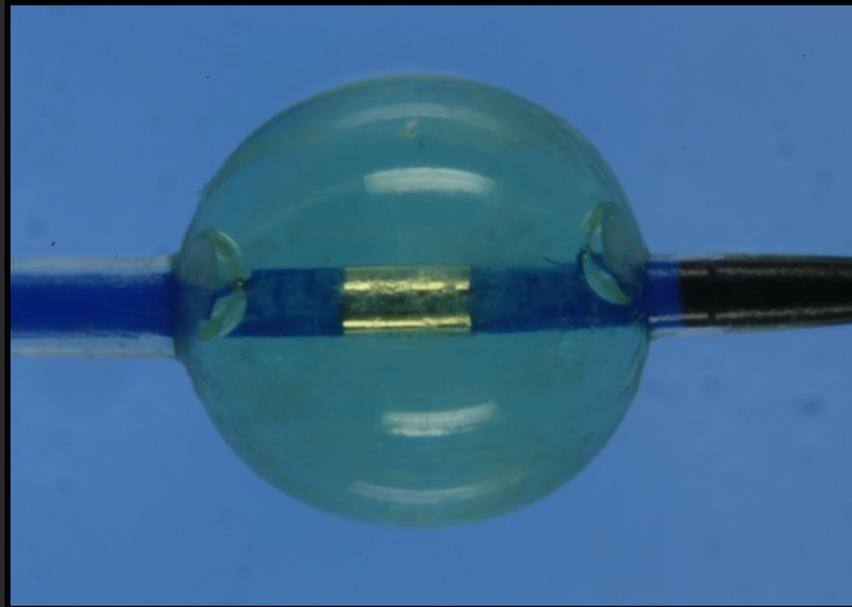
10 and 5



Background: If the wire crosses to the SB between distal struts, there is optimal SB scaffolding and no distortion after kissing. The converse is true with proximal cross



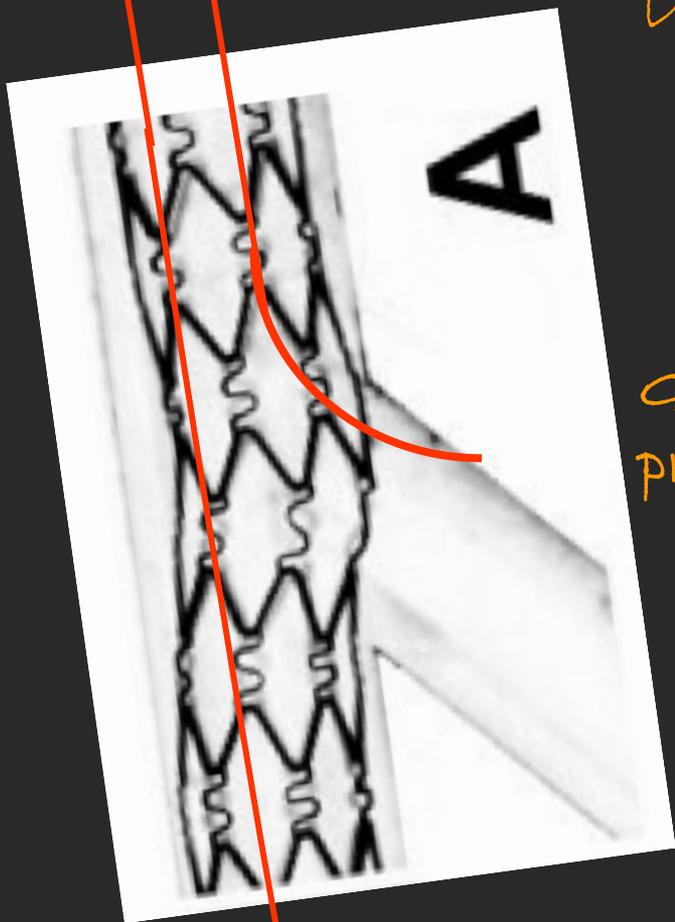
"Spherical" Balloon  
(Invatec and Remo Albiero)



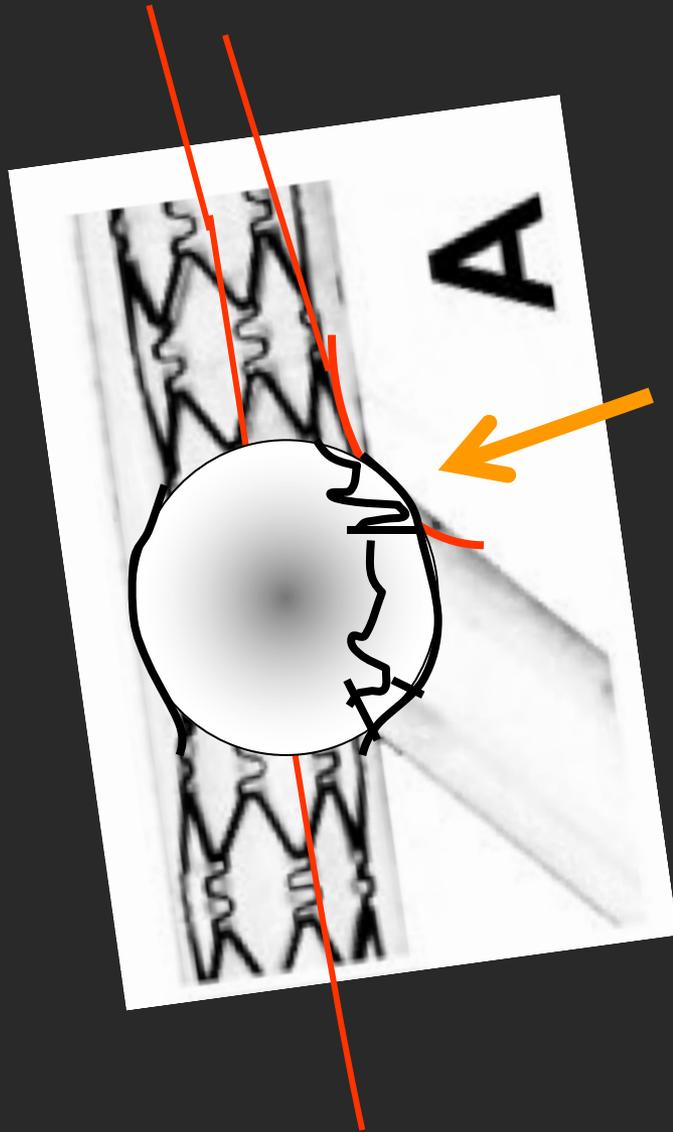
- ▶ The purpose of the “Spherical” balloon technique is to optimize the MB stent during the strategy of provisional SB stenting
- ▶ Facilitates converting a “proximal cross” to a “distal cross” so that kissing balloon post-dilatation produces good SB ostial scaffolding



## Use of "Spherical" Balloon

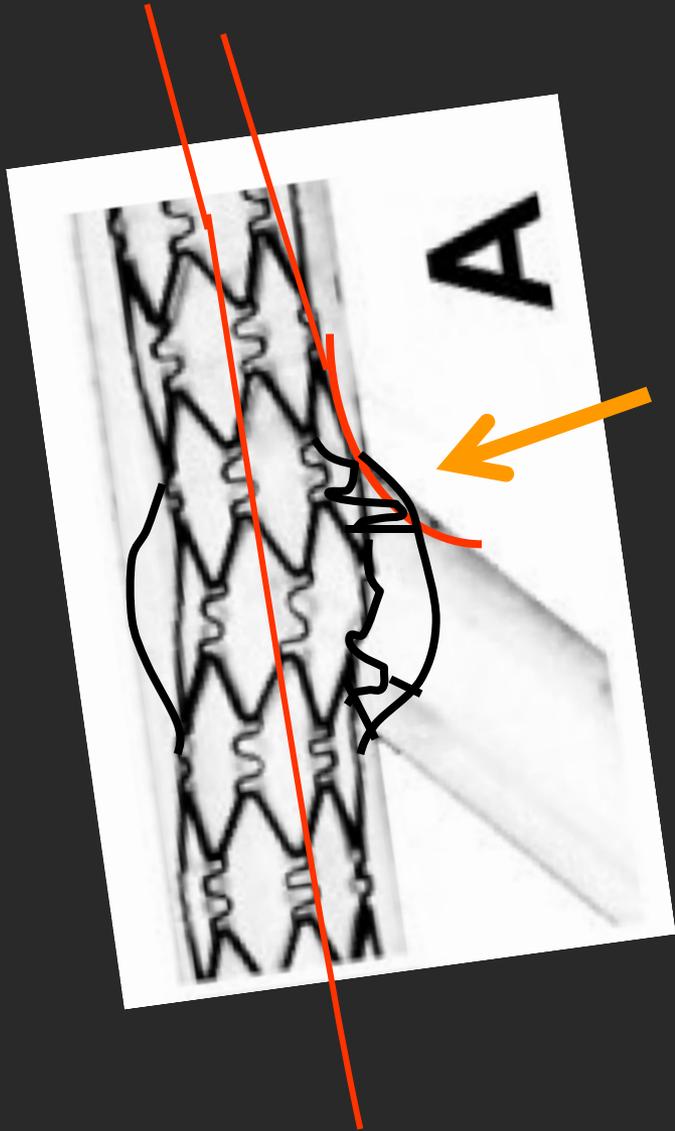


Guidewire in the MB crosses between proximal struts



The spherical balloon will cause jailing of the SB wire (can feel this) and will protrude the mid and distal struts into the SB ostium

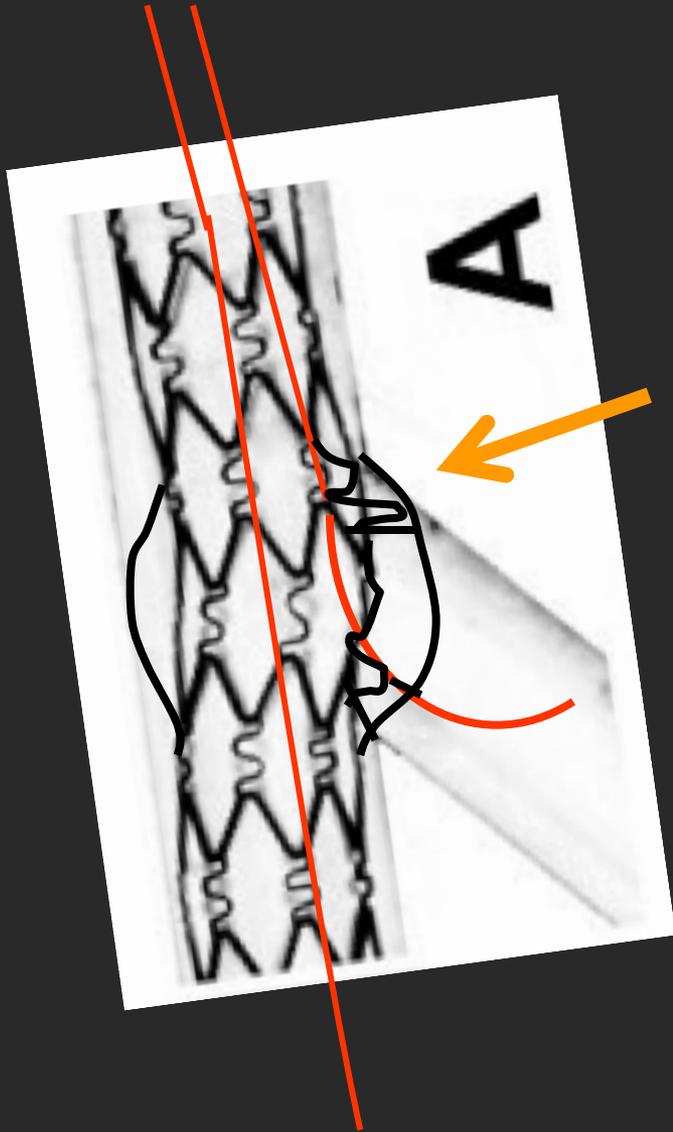
You will feel that the wire is trapped



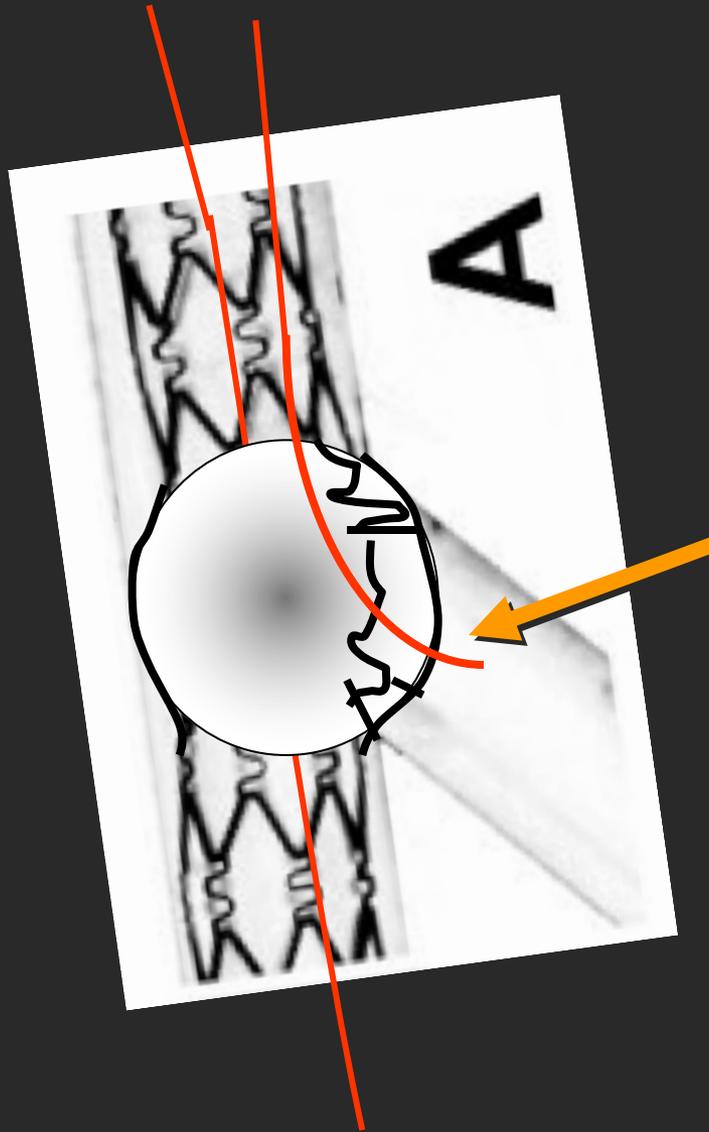
After "spherical" balloon  
inflation there is protrusion of  
struts



Remo Albiero

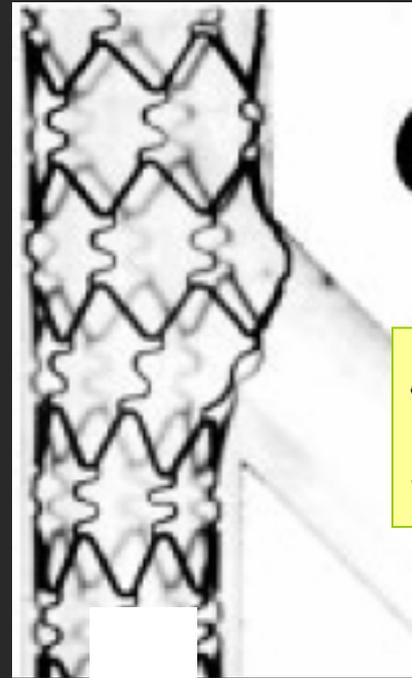


After "spherical" balloon inflation because of protrusion of struts the wire can be repositioned distally



If the wire has crossed between mid or distal struts, the spherical balloon will not jail the SB wire and will protrude the mid and distal struts in the SB ostium

# Final Kissing balloon post-dilatation



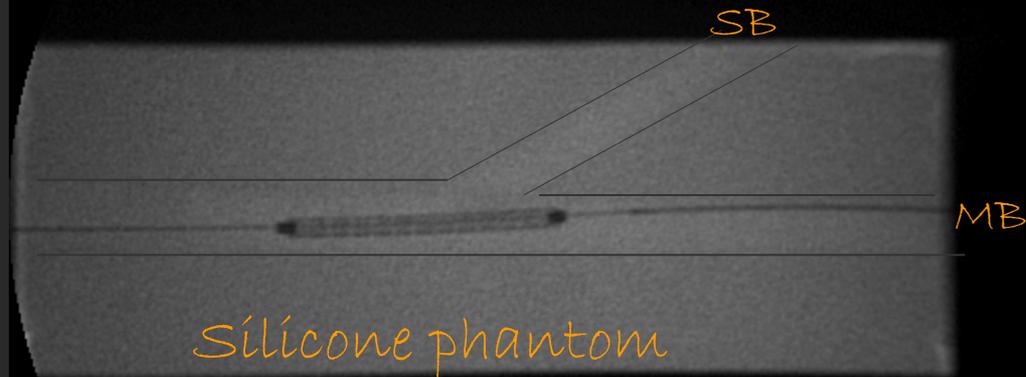
SB ostium scaffolding

Bench Imaging of "Spherical"  
balloon

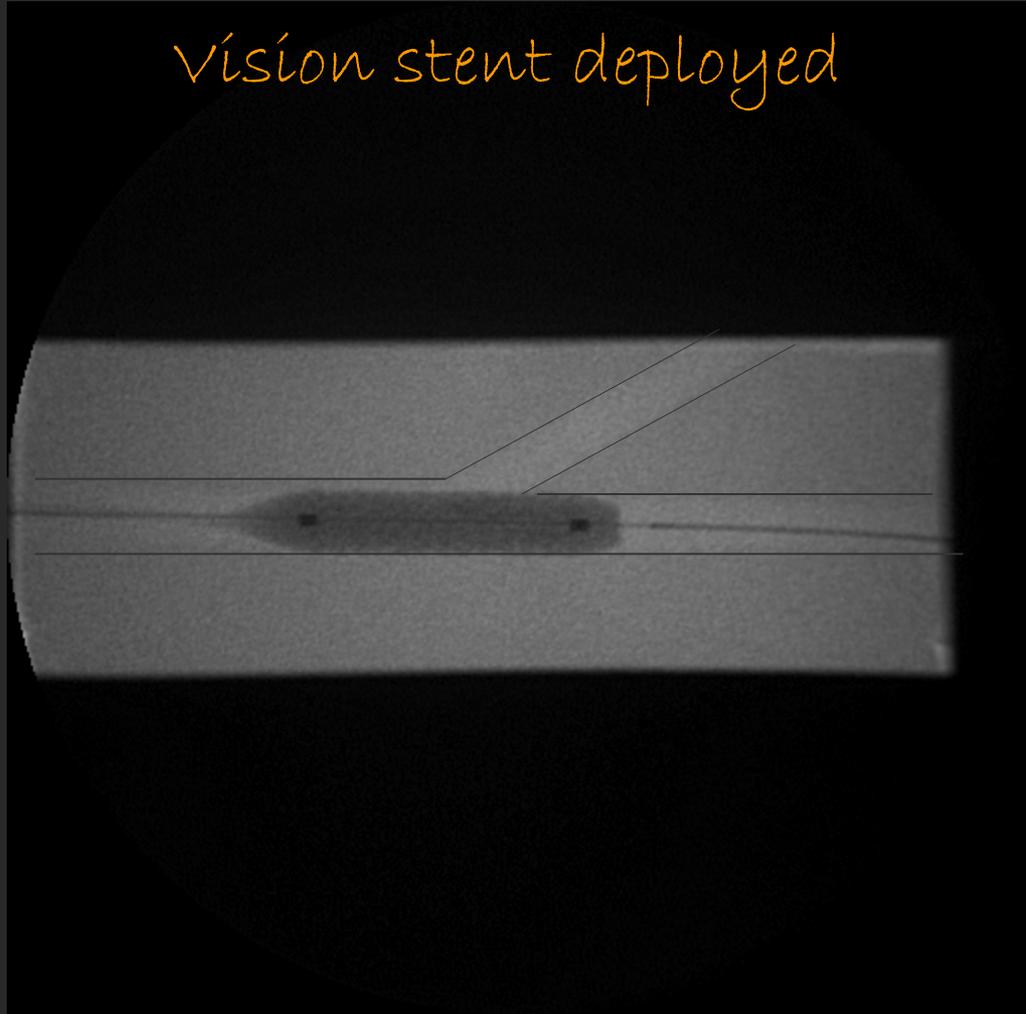
John Ormiston and Bruce Webber  
for Remo Albiero



A vision stent is positioned adjacent to SB

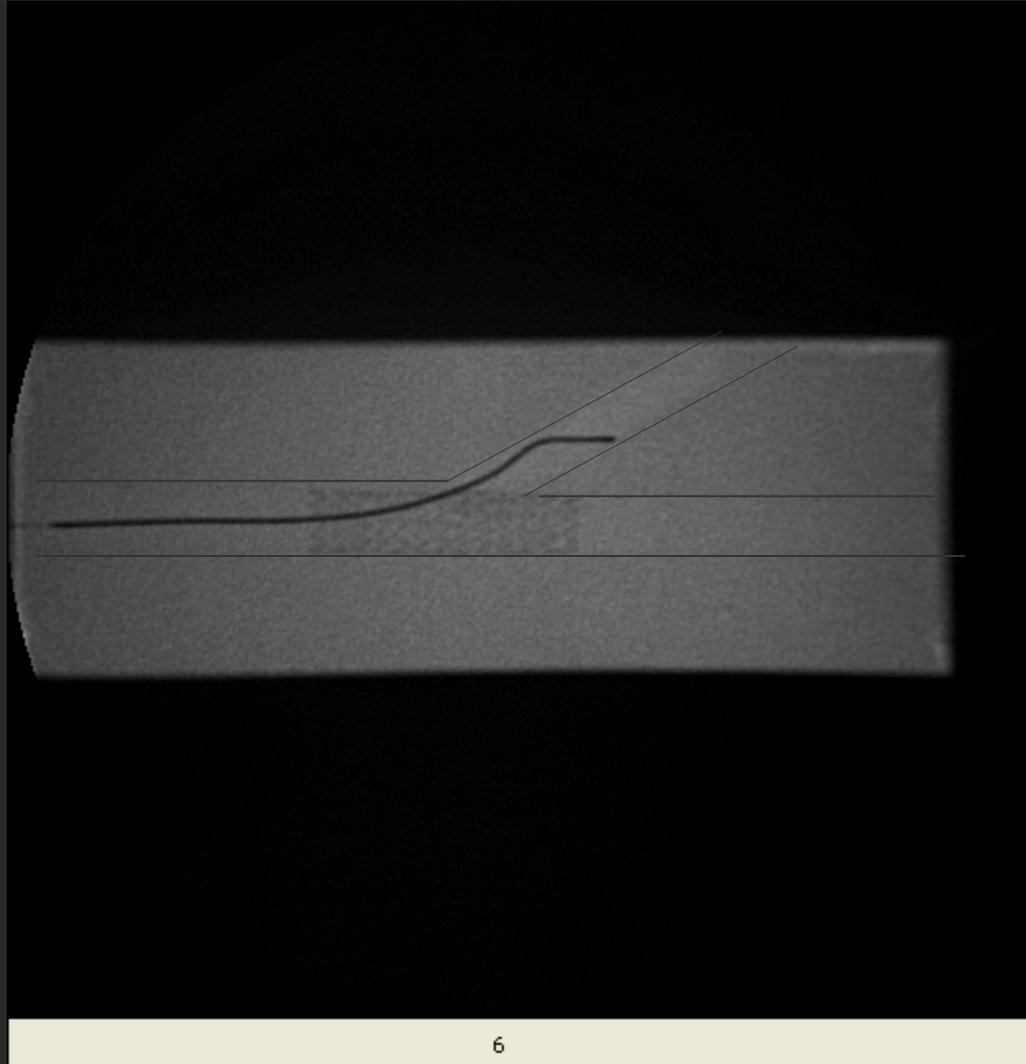


vision stent deployed

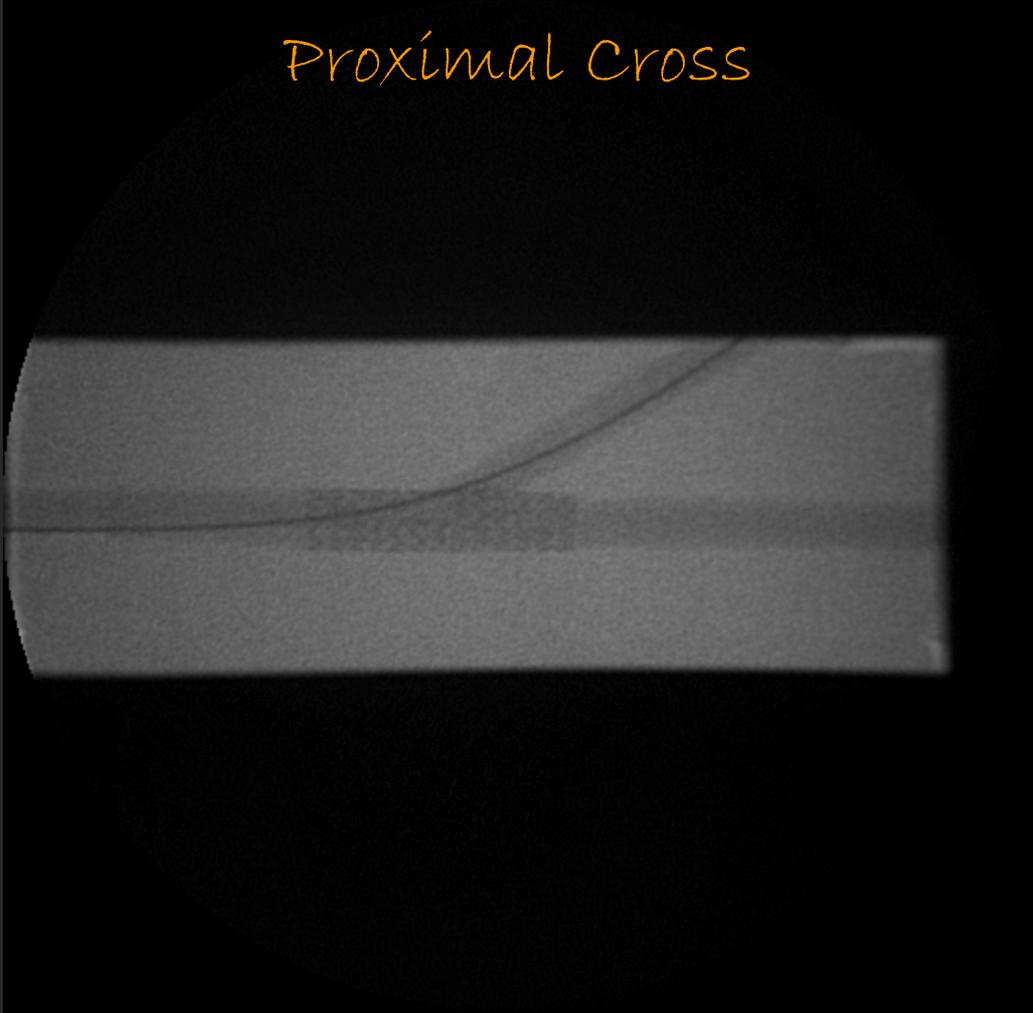


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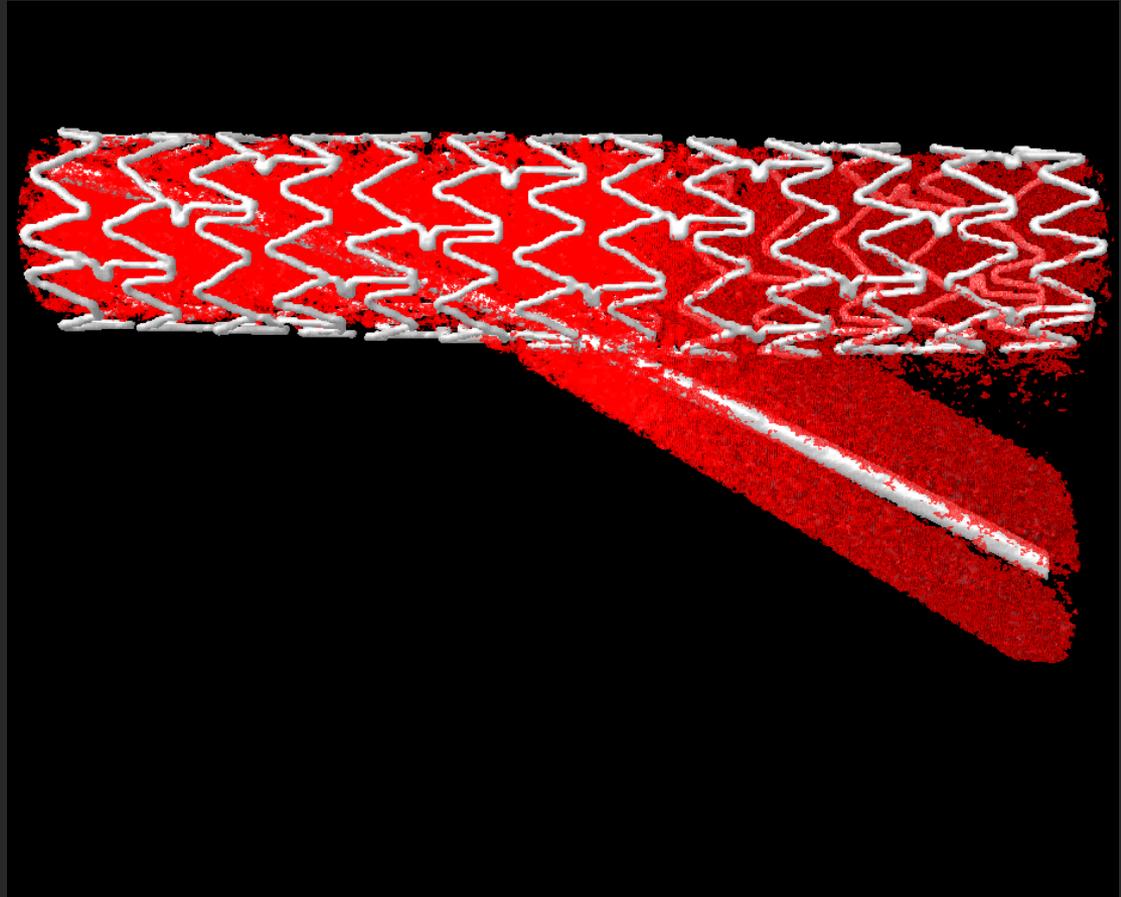
Wire Crosses between proximal struts  
to side-branch



Proximal Cross

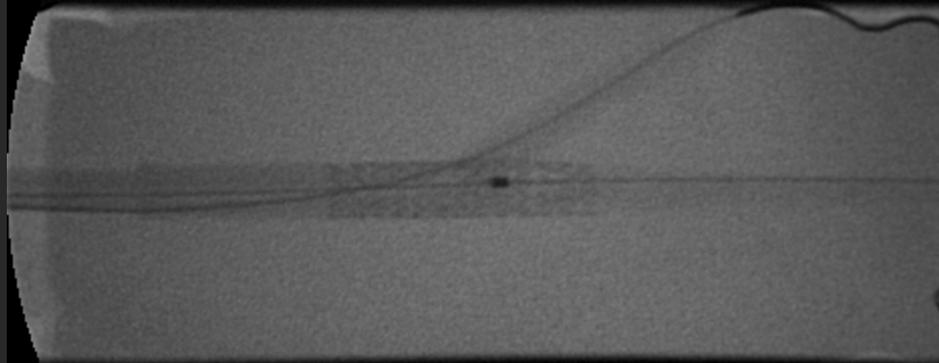


Proximal Cross- wire crosses to SB between proximal struts



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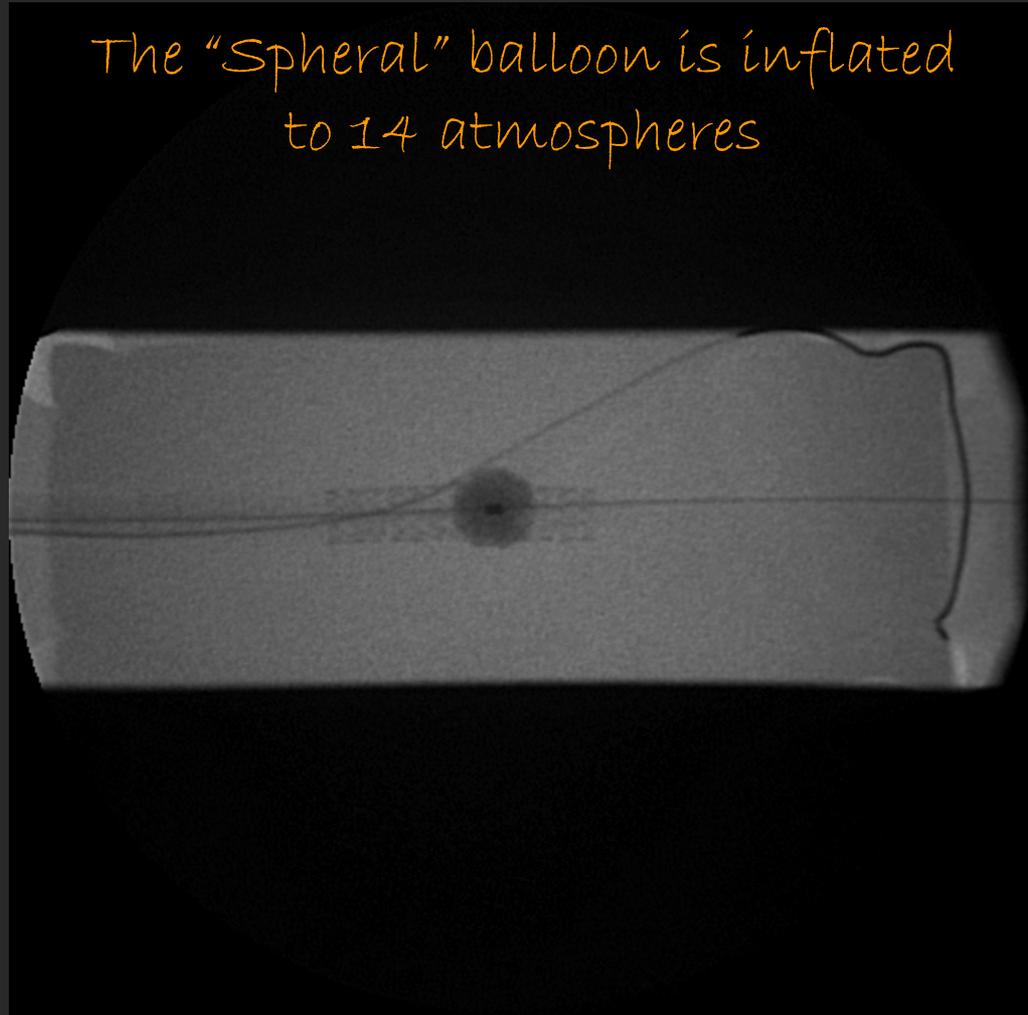
The "Spheral" Balloon is  
positioned opposite SB



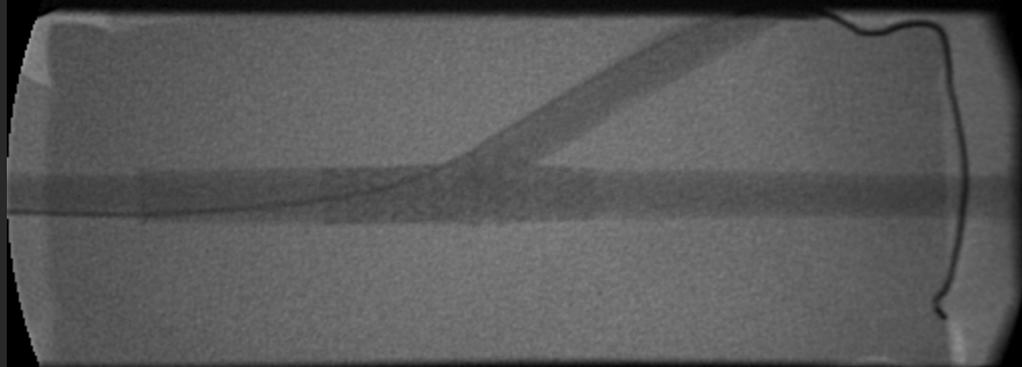
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## Proximal Cross

The "Spherical" balloon is inflated to 14 atmospheres

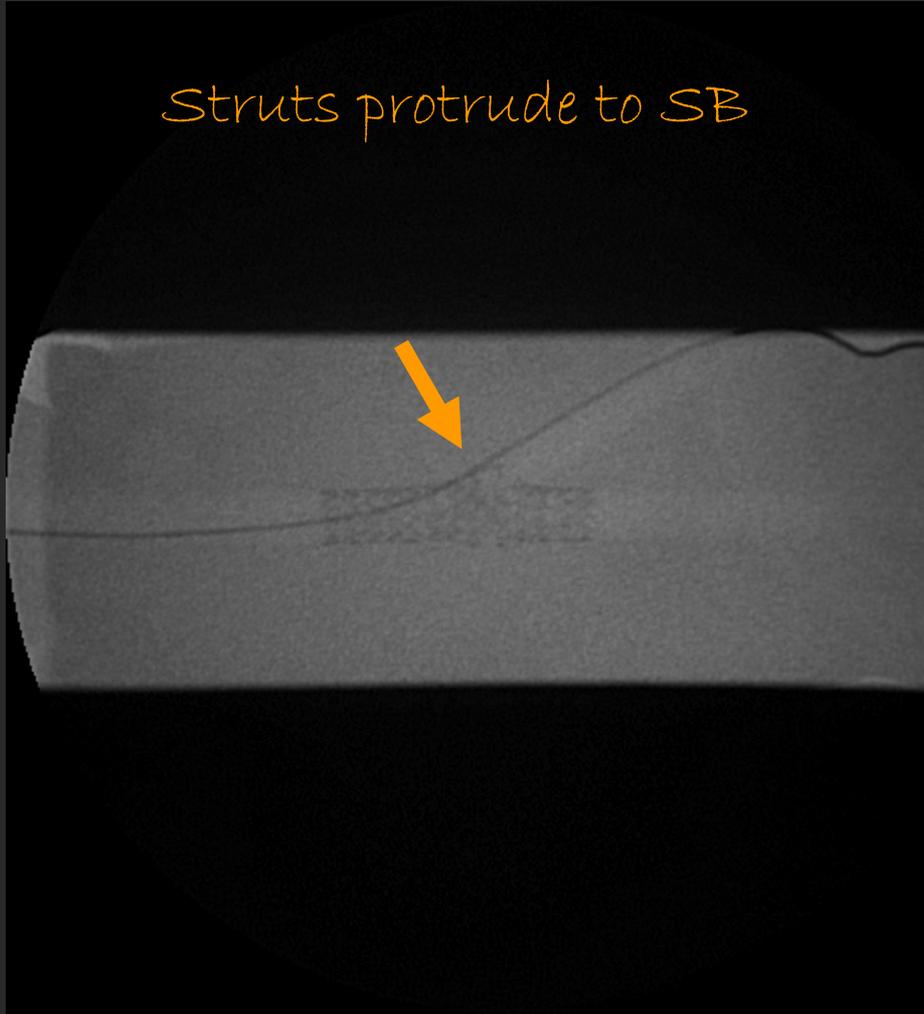


After "Spheral" balloon inflation



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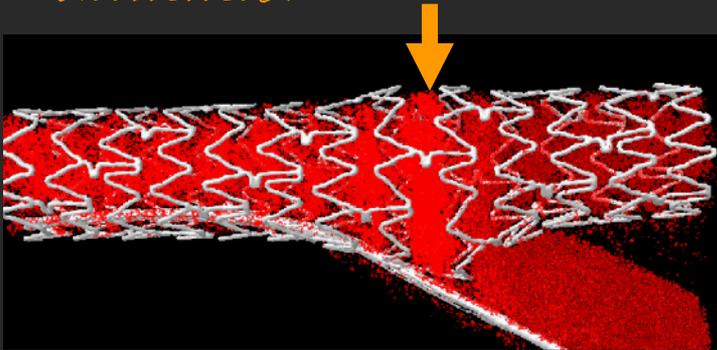
Struts protrude to SB



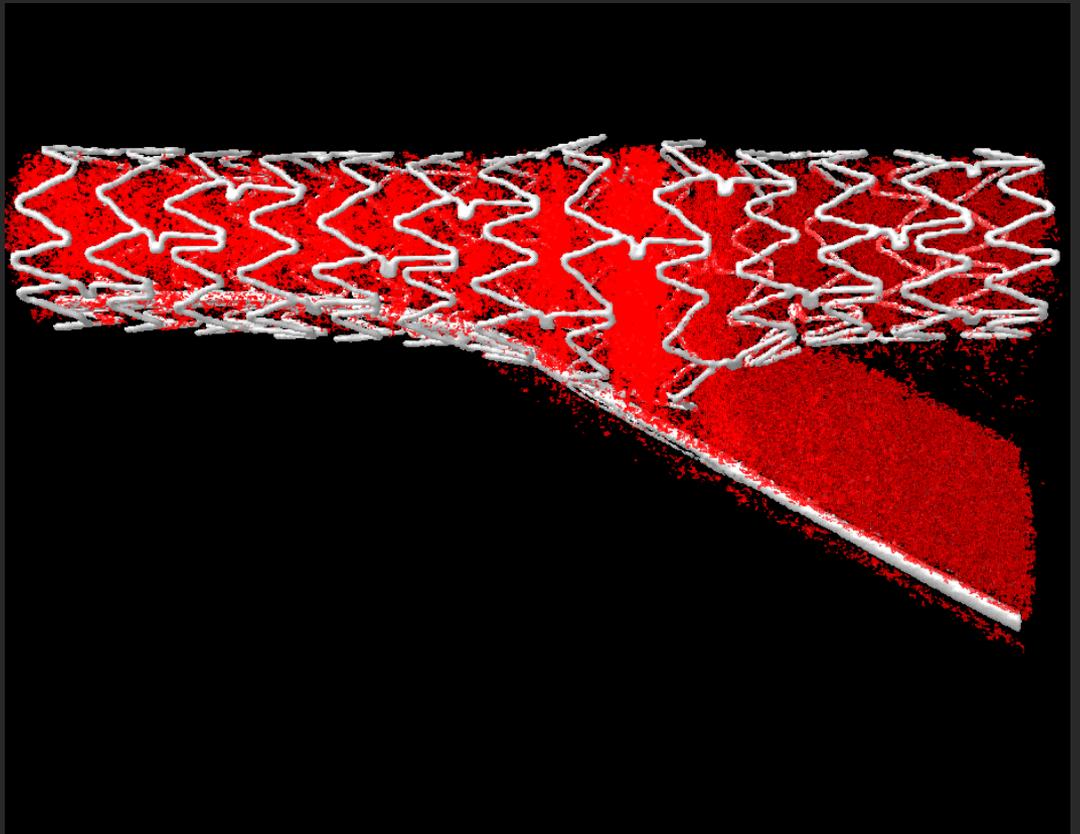
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3D imaging after "spherical" inflation  
with proximal cross

This distortion will  
be corrected by  
kissing balloon post  
dilatation

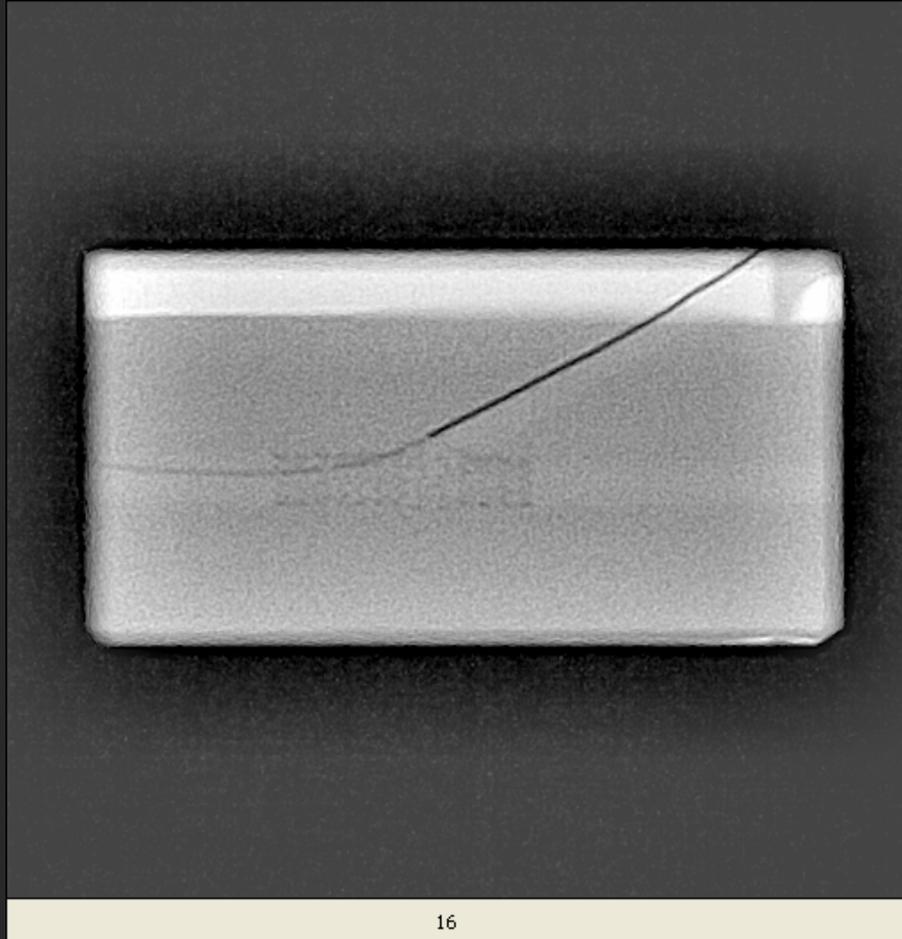


Struts protrude into SB so that it will  
be easier to reposition the wire between  
distal struts



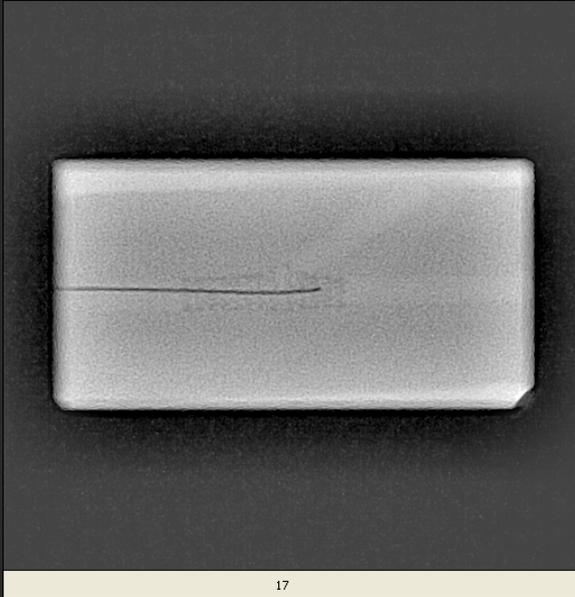
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Repositioning of the wire – the wire is first pulled back

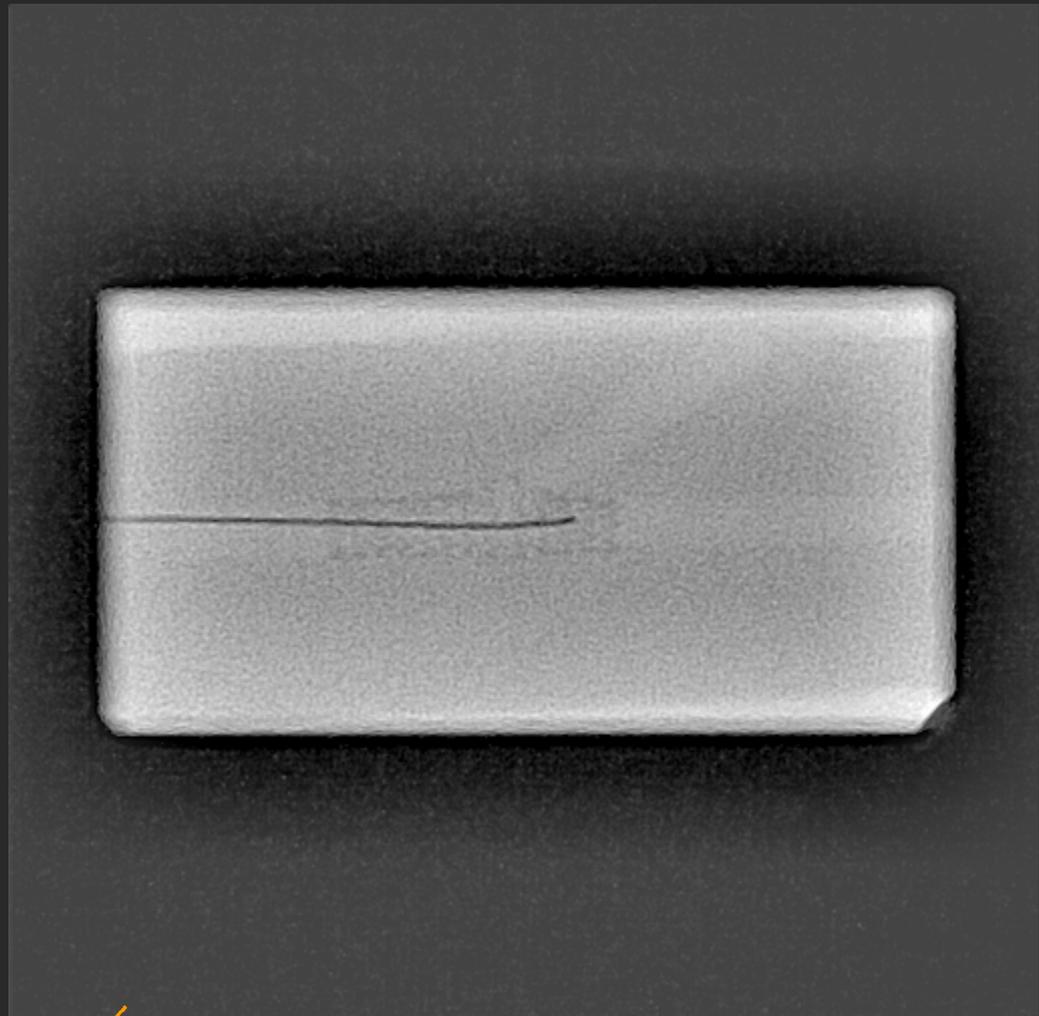


Repositioning wire distally (avi)

Wire crosses on a wide front



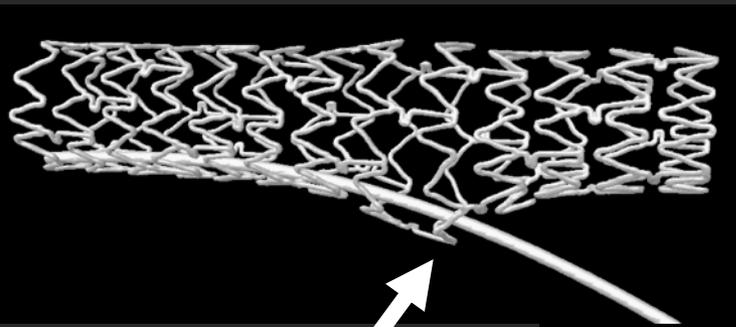
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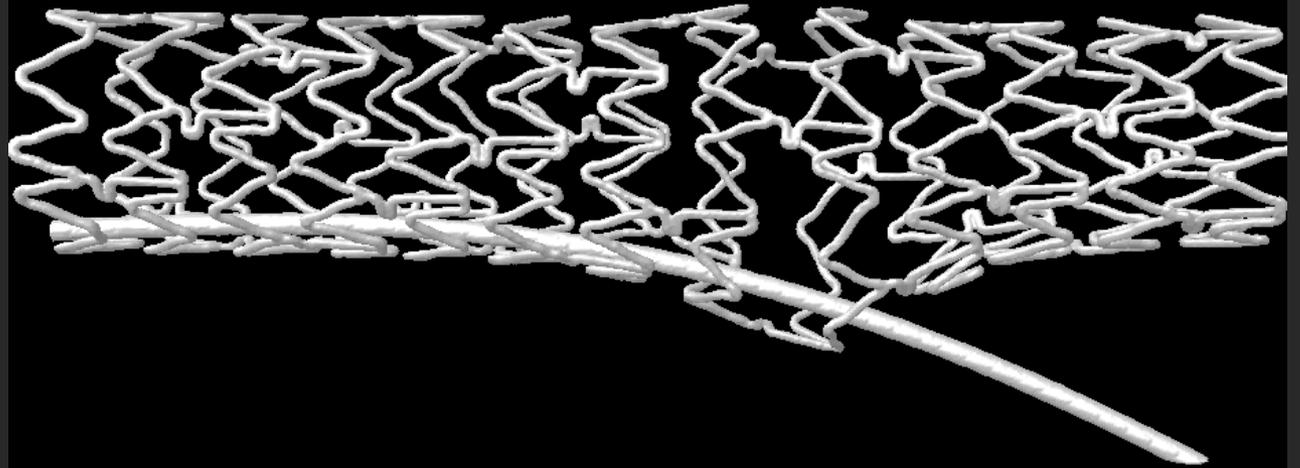
avi

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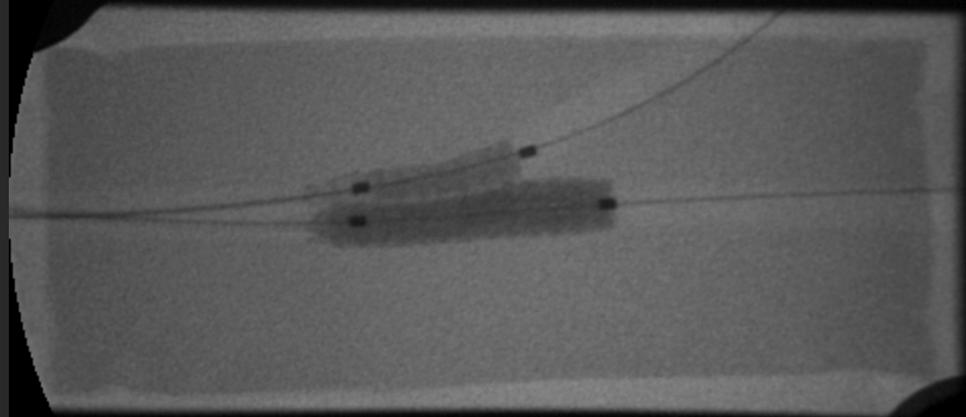


Wire has been repositioned distally after spherical balloon inflation



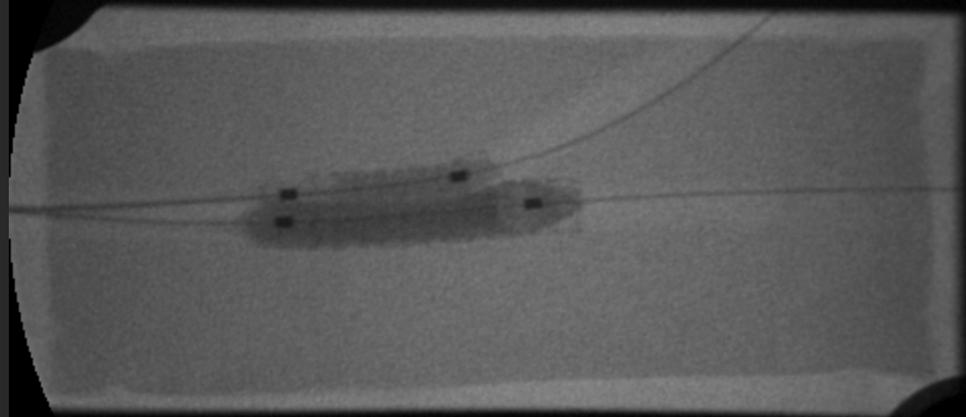
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Kissing balloon post-dilatation



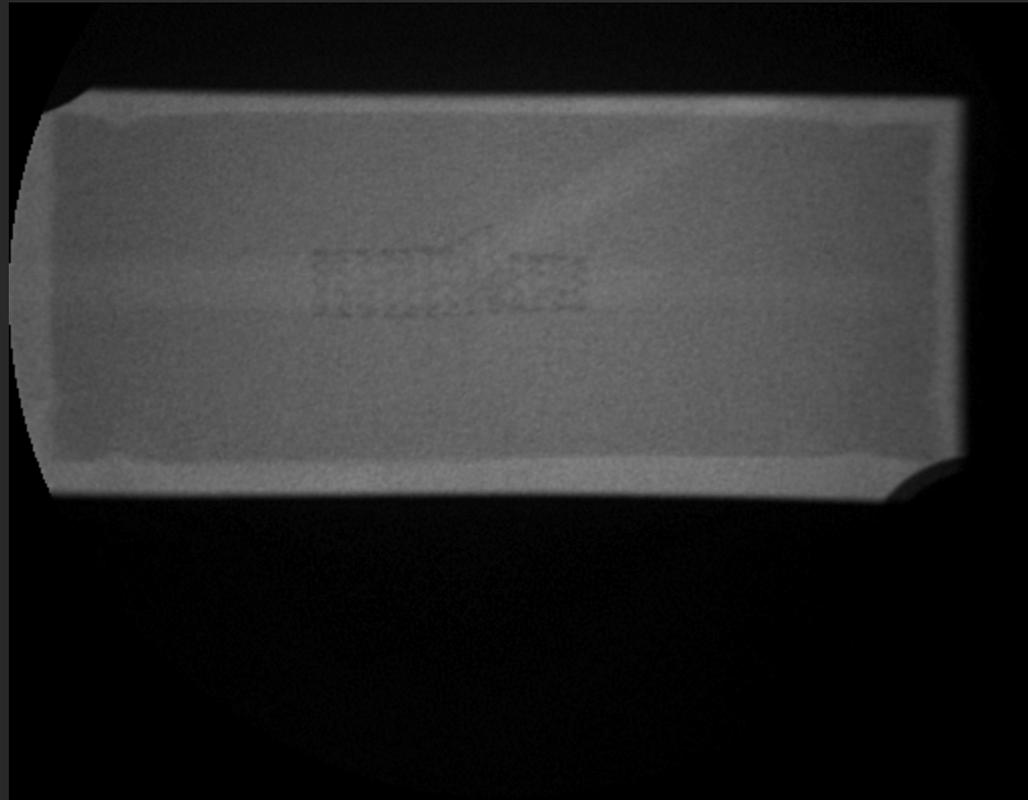
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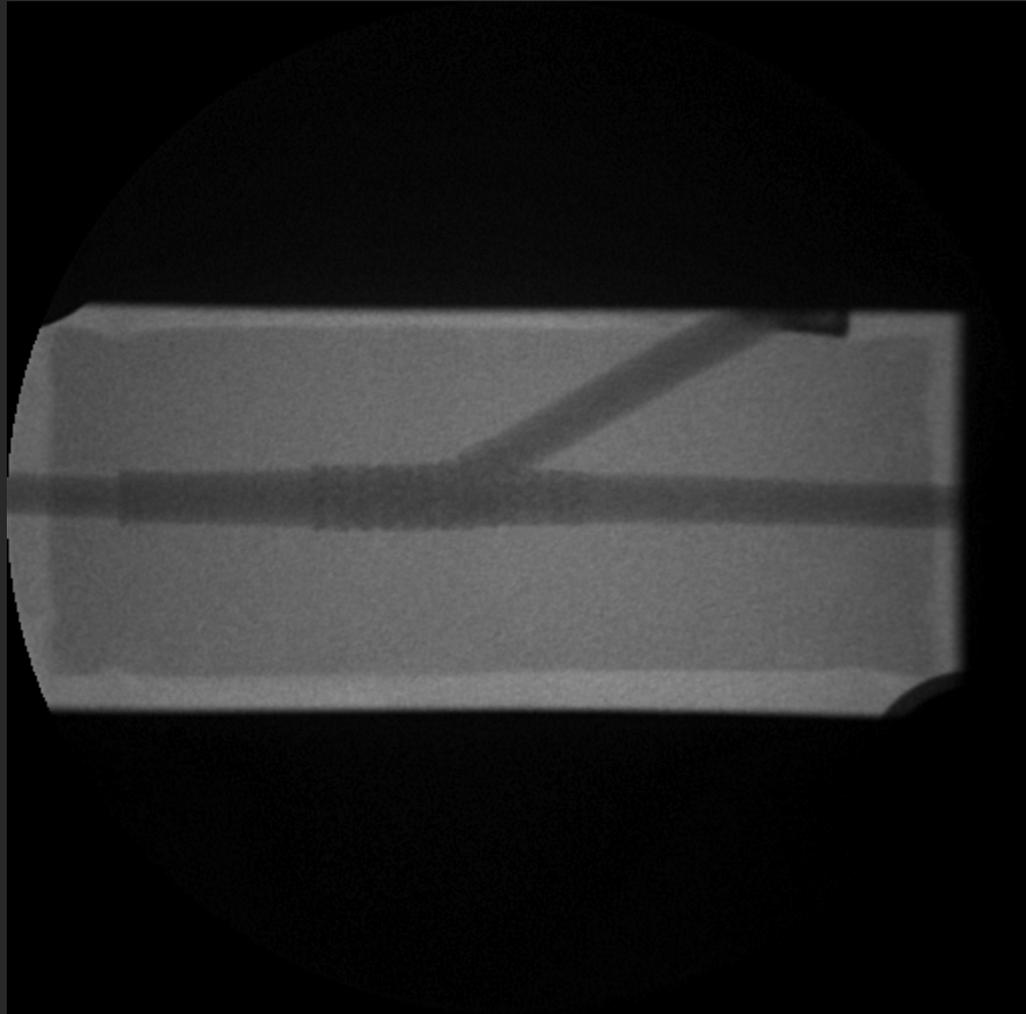
Kissing more proximally



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Result after proximal cross, "spherical" balloon  
inflation, wire repositioning and kissing post-  
dilatation



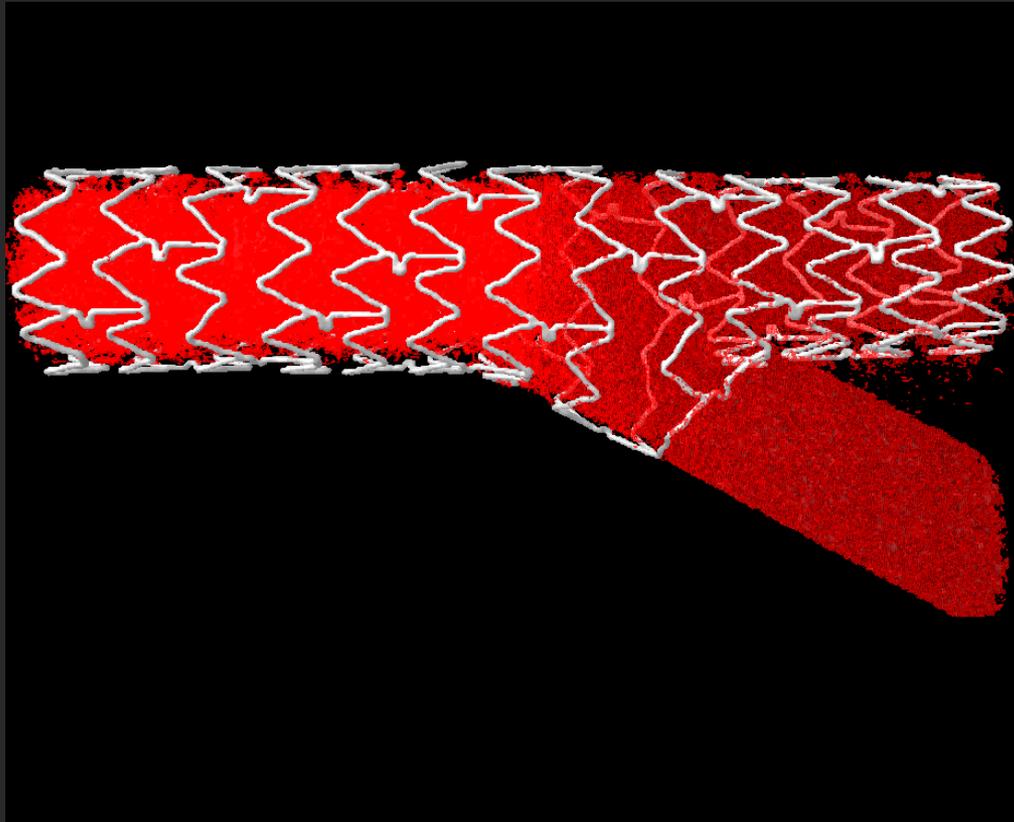


*Ormiston*

## Final result

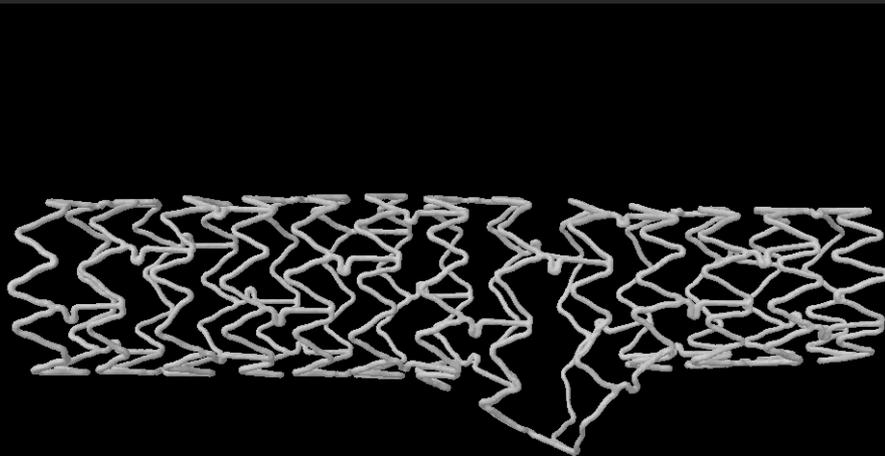
After Proximal Cross, Spherical Balloon optimization,  
wire repositioning and final kissing post-dilatation

Excellent SB scaffolding and distortion corrected

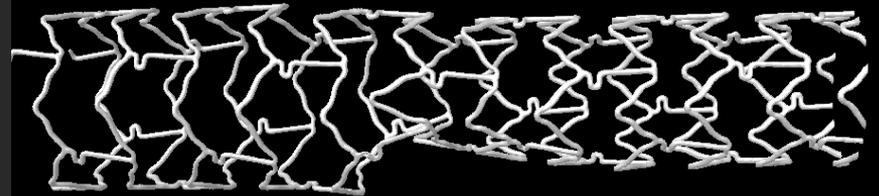


A comparison of stents after proximal cross with and without  
"spherical" balloon Main Branch optimization

Final result after "spherical" balloon  
strategy



Final result without "Spherical"



# Summary

- ▶ “Spherical” balloon inflation enhances the strategy of provisional SB stenting for treatment of bifurcations.
- ▶ It expands the MB stent struts overlying the SB to facilitate passage of the wire between distal struts
- ▶ Distal wire cross facilitates kissing balloon post-dilatation that results in SB ostial support and drug application
- ▶ Caution: SB scaffolding is different with different SB angles and stent designs
- ▶ Limitation: This works well on the bench but will it work well in patients?



