

# “How to make a nice longitudinal compression”

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# Disclosures

I do NOT report any consulting, employment or stock ownership of a company developing nor any intellectual property rights related to a technology implementing nice longitudinal stent compression

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# Background

- 67-year-old man
- Smoking habit, hypertension on treatment with ramipril and furosemide
- Recent onset effort angina with positive exercise stress test
- Elective coronary angiography showing tandem lesions of the first diagonal branch

# Coronary anatomy



# What would you have done?



# Interventional strategy

*Provisional stenting according to EBC recommendations in 2013\**

- Two coronary guidewires
- MV predilatation
- MV stenting
- Guidewires switch
- Final kissing balloon

\*Evidence supporting POT was not yet available

# Interventional strategy

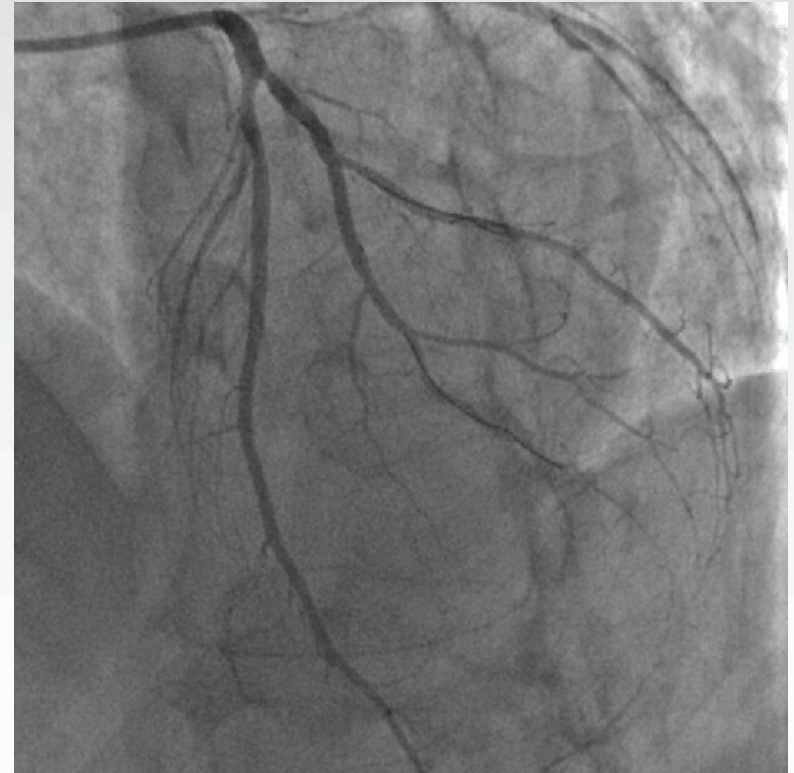
*Provisional stenting according to EBC recommendations in 2013\**

- Two coronary guidewires (BMW Universal)
- MV predilation (Ryuji Plus 2.0/15 mm)
- MV stenting (Promus PREMIER 2.5/38 mm)
- Guidewires switch
- Final kissing balloon

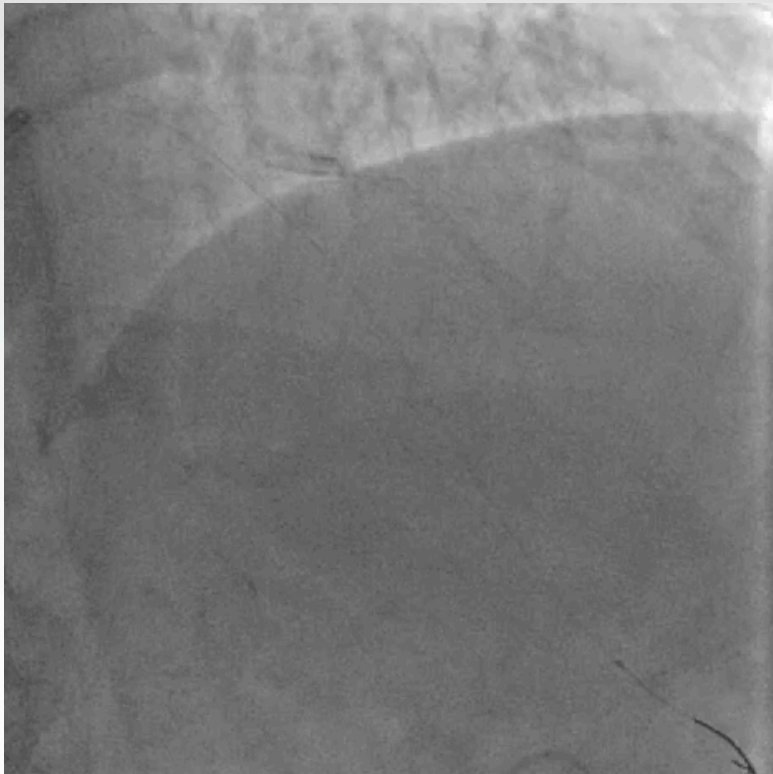
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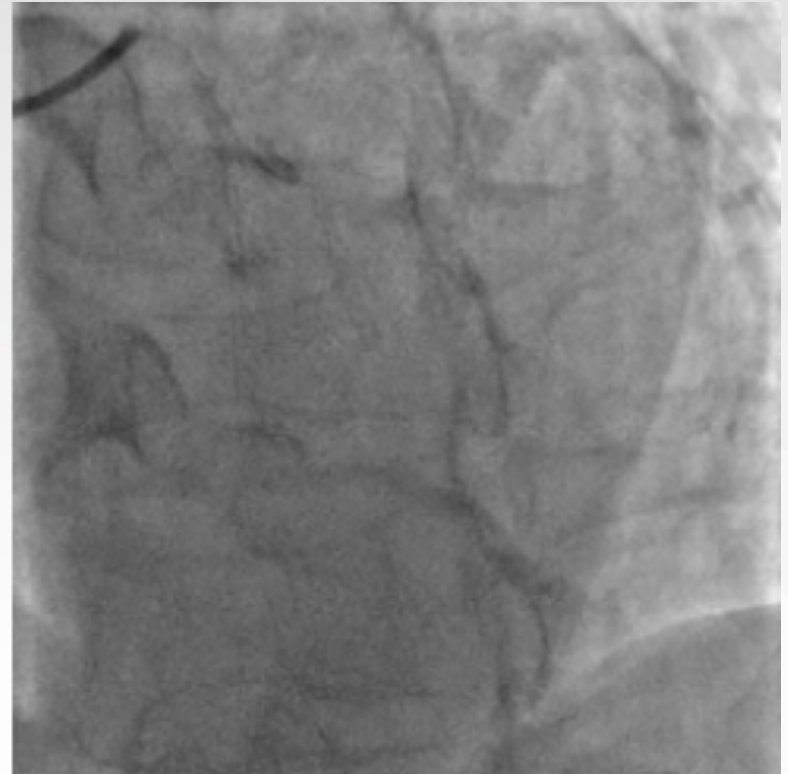
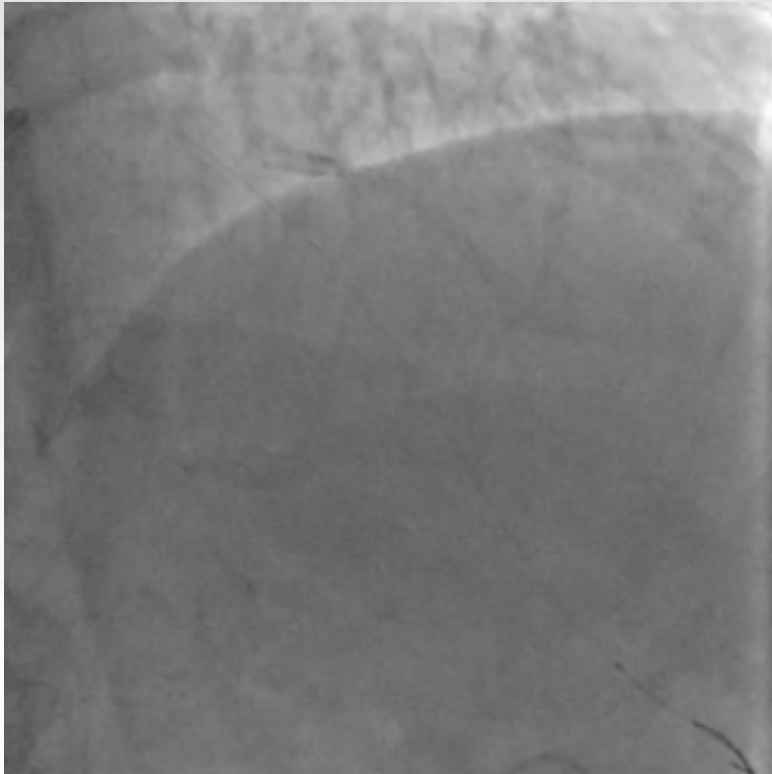
# Stenting result



# During guidewires exchange something went wrong..

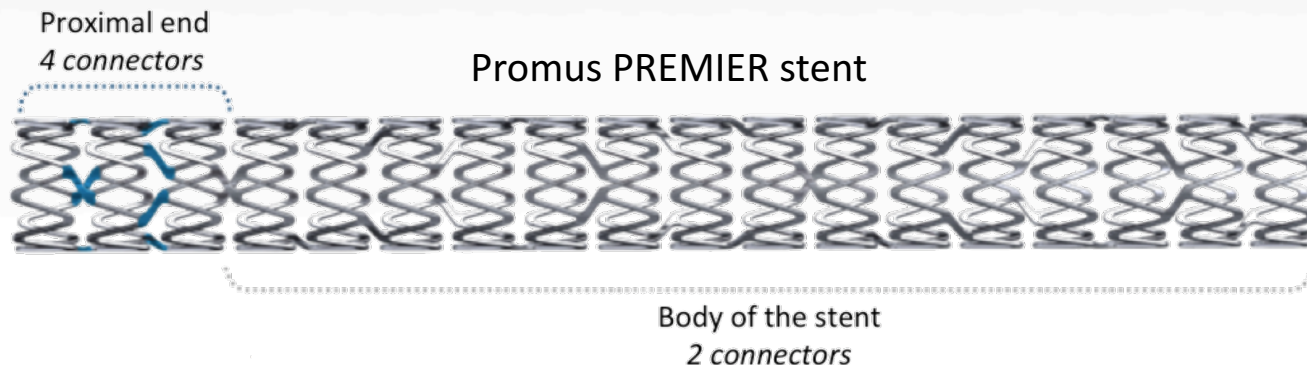
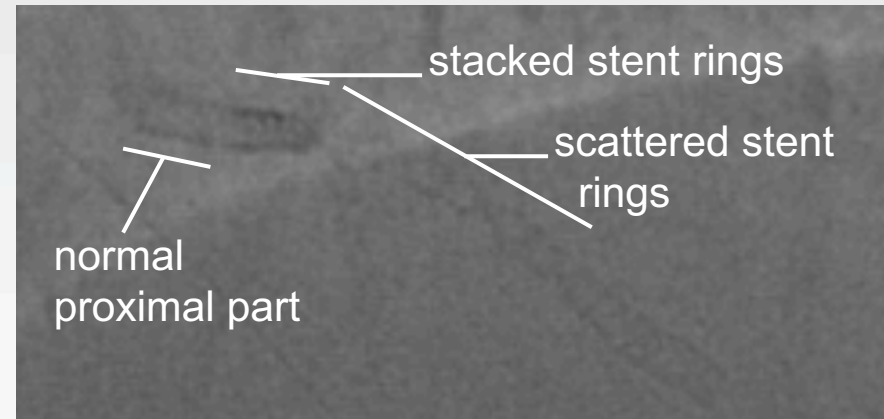
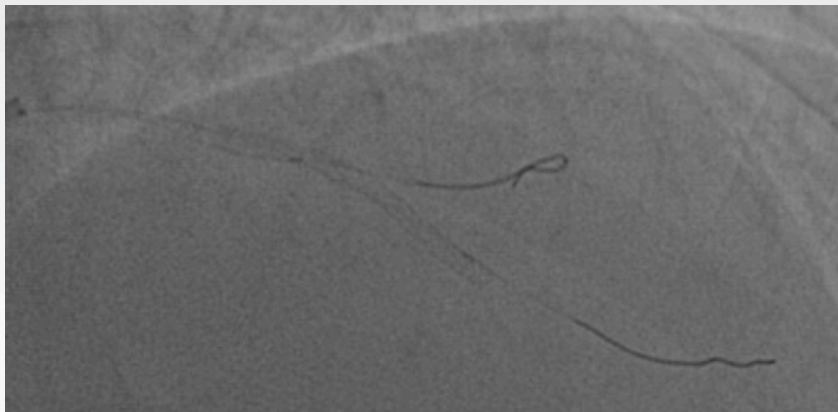
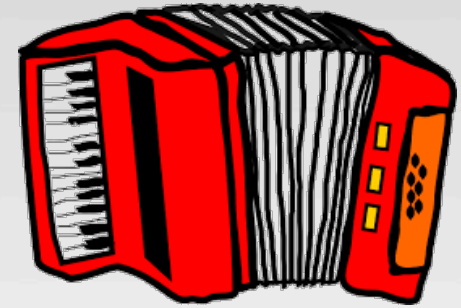


# What happened?



# What happened?

Pulling the jailed guidewire seems to have forcefully dislocated the stent rings producing their separation and scattering distally and their squeezing and accumulation more proximally

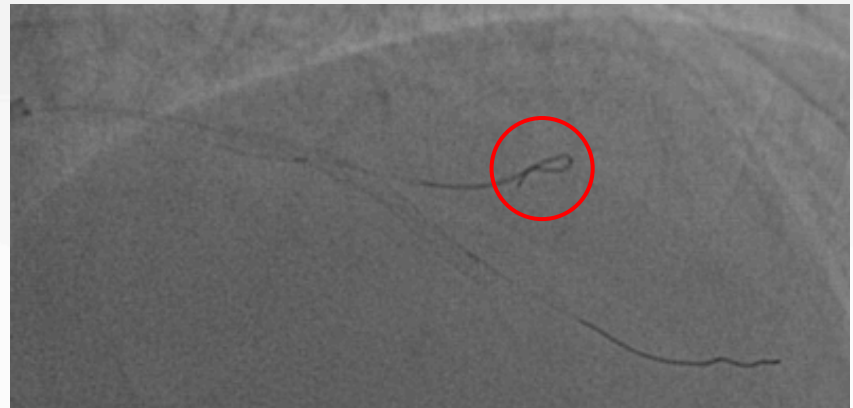
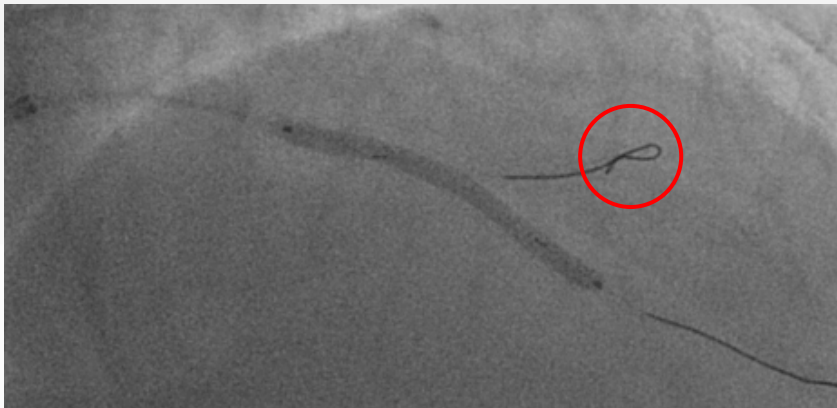
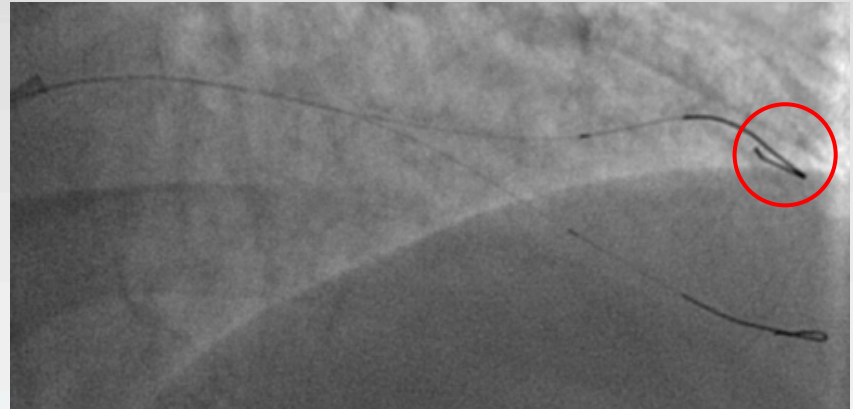


# Some comments

- **Longitudinal stent deformation** has been reported to affect stent designs providing a **reduction of the number of connectors between stent crowns** which favours flexibility at the expense of longitudinal strength
- Most of the described cases and engineering assessments have highlighted a **higher likelihood** of structural deformation with the **PROMUS Element stent which implements a two-connector design**
- Boston Scientific has released an evolution of its PROMUS Element stent, called **Promus PREMIER**, which is characterised by a design modification implementing **four connectors at its proximal end**
- In our case, the very **proximal part** of the stent remained **unchanged** supporting the **efficacy of the multiconnector design** to resist structural deformation due to longitudinal forces



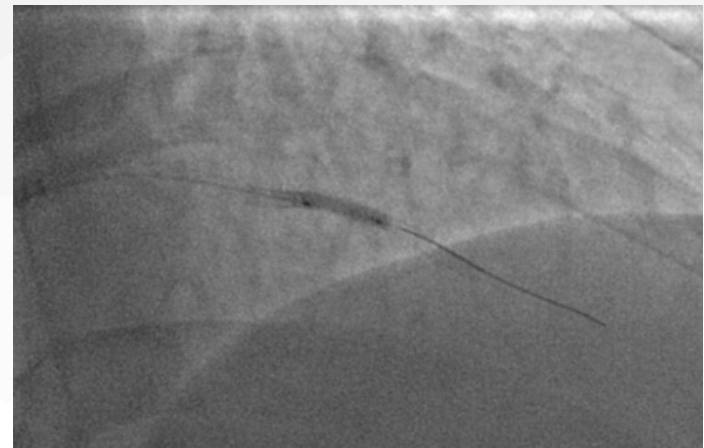
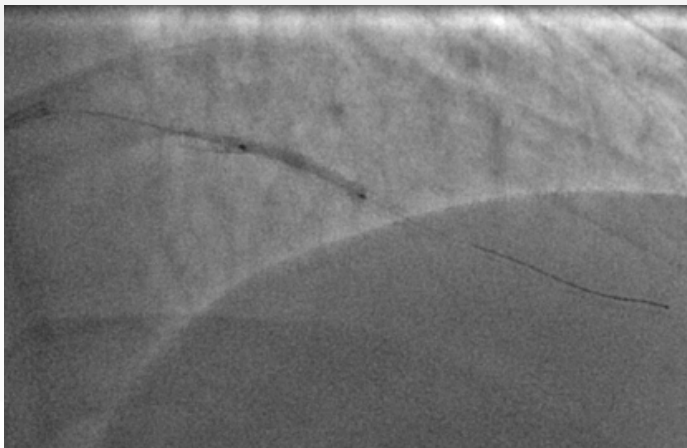
# Who is guilty?



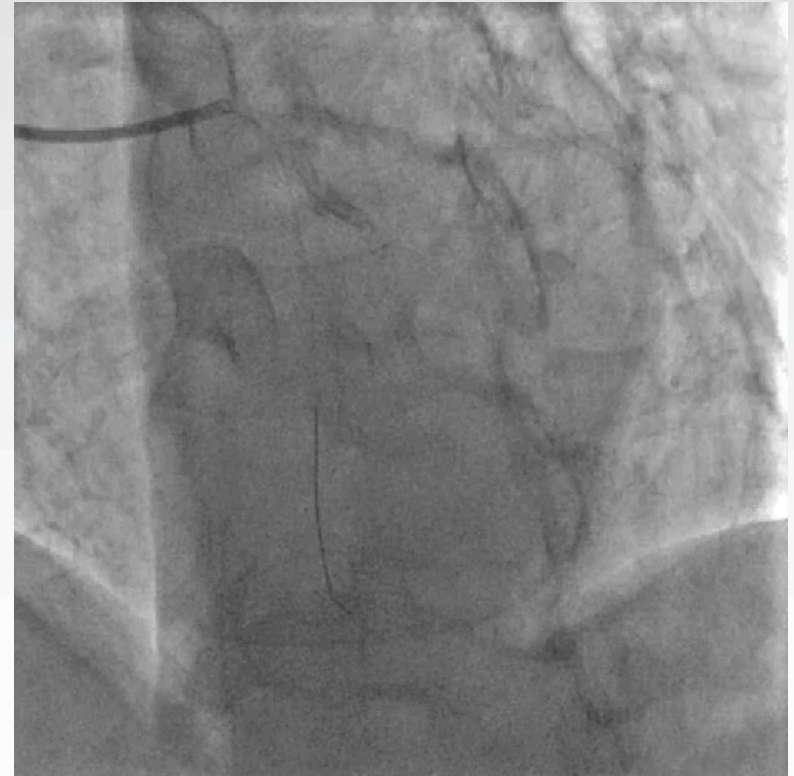
Excessive bending of the guidewire used for SB protection favoured a knot entangling a stent strut during pullback

# What was done next?

- Deformed stent structure rewiring with a light core-to-tip polymer-covered guidewire (Whisper Extra Support)
- Sequential inflation of increasing diameter balloons (OTW Apex 1.5/15 mm, 2/20 mm and NC Quantum Apex 2.5/12 mm)



# Final result



Patient is event- and symptom-free at 4 years follow-up



# Take home message

- Percutaneous bifurcation intervention is a different animal
- Always pay a lot of attention to what you are doing and what is happening
- Select your device wisely
- More specifically, avoid guidewire bending in jailed SB

# Take home message

