Stent fracture detected with a novel fluoroscopic stent visualization technique – StentBoost

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A 50-year-old man was admitted with high-risk acute coronary syndrome with enzyme elevation. A coronary angiogram revealed a critical 90% stenosis of the proximal left anterior descending artery. The lesion was predilated and a 3 mm × 18 mm bare metal stent was deployed at 14 atm. After stent deployment, balloon passage inside the stent was difficult. For better visualization of the stent, StentBoost (Philips Medical Systems, Netherlands) was used. With the balloon markers located within the stented segment, roughly 40 frames of digital cine were acquired without injection of contrast at 15 frames/s. StentBoost-augmented images (Figure 1) revealed that the stent had fractured into two pieces, which was not apparent on ordinary cine angiography. Subsequently, a second stent was deployed across the fractured stent.

Stent strut fracture is a rare but important complication that can lead to serious consequences, such as stent thrombosis, if it is not treated in time. Stent fracture is a rare but important cause of restenosis in the drug-eluting stent era (1). In the present case, StentBoost enabled the diagnosis of this complication, which could then be treated. Stent strut fracture has been diagnosed previously by means of

intravascular ultrasound (1), multislice computed tomography (2) and optical coherence tomography (3).

StentBoost is a novel fluoroscopic stent visualization technique that creates a high-quality image of deployed stents by superimposing motion-corrected acquisition frames, thus giving a clearer image of the stent. The balloon markers must be in the frame. StentBoost does not require any additional expensive hardware and it can give important information about stent position, placement and complications, as illustrated in the present case.

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Figure 1

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Received for publication August 6, 2007. Accepted September 24, 2007