Cardiac Rupture Due to Side Branch Occlusion After Stent Implantation — The Crime of Jailed Stent —

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An 82-year-old man had implantation of a biodegradable-polymer sirolimus-eluting stent into the left circumflex artery (**Figure A**). An obtuse marginal branch (OMB) was occluded (**Figure B**) without any symptoms, despite attempting side-branch salvation by soft guidewire. Electrocardiogram showed T-wave inversion in leads III and aVF. Creatine phosphokinase (CPK) and CPK-MB were elevated to 458 and 37.8 U/L, respectively, at 1 day after percutaneous coronary intervention (PCI). He died unexpectedly 6 days after PCI.

Autopsy indicated cardiac tamponade due to the rupture of a localized high lateral myocardial infarction (**Figure C**).

The infarction area was restricted to the base of the heart and the width was approximately only 2 cm (**Figure D,E**). Stented vessel (**Figure F**) showed penetration of the struts into the intima and medial dissection (**Figure G**), and the dissection extended to the OMB. This case indicates the importance of side branch protection regardless of how small the branch is, because cardiac rupture can occur, especially when there is no collateral flow. In the case of side branch occlusion, careful hospitalized follow-up will be required, although the perfusion area is relatively small.

Disclosure

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Figure. Angiography shows (A) severe stenosis of the circumflex artery (CX; arrow), and (B) occlusion of the obtuse marginal branch (OMB) after stenting (arrow). (C–E) Cardiac fissure (arrows) is identified in (D,E) the infarction area (arrowheads). (F) Stented vessel (inset, ex vivo X-ray) shows dissection; (G) medial dissection (arrows), and trace of strut (asterisk). (C–E, scale bar, 1 cm; G, scale bar, 200 μ m.).