Catastrophic Coronary Stent Fracture and Coronary Perforation Presenting as Cardiogenic Shock

A Rare but Fatal Late Complication of Stenting

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Rapidly progressive dyspnea developed in a 73-year-old male patient with maintenance hemodialysis. His heart sounds were diminished. Heart rate was 102 bpm, and blood pressure was 92/53 mm Hg. Pulsus paradoxus of 20 mm Hg was present. Three months earlier, the patient had undergone extracorporeal membrane oxygenation-assisted percutaneous coronary intervention to implant 4 drug-eluting stents for triple-vessel disease with left main stenosis. Emergency echocardiography (Figure 1; Movie I in the online-only Data Supplement) and noncontrast 64-slice multidetector computed tomography (Lightspeed VCT, GE Medical Systems, Milwaukee, Wis) without ECG gating (Figure 2A, 2B, and 2C; Movie II in the online-only Data Supplement) showed that a stent implanted at the mid-right coronary artery was surrounded by a 4-cm round structure and hemopericardium. Coronary angiography revealed a completely fractured stent that dissected the coronary artery, a large pseudoaneurysm, and pericardial tamponade (Figure 3; Movie III in the online-only Data Supplement). Emergency cardiac surgery, including removal of the coronary aneurysm, repair of the perforated coronary artery with saphenous vein, and venous graft to the posterior descending coronary artery, was performed (Figure 4). After 3 weeks in the intensive care unit, the patient was transferred to a general ward for rehabilitation. Although they are rare, stent fracture and coronary perforation could be considered when a catastrophic event occurs after implantation of coronary stents.1-4

Disclosures
None.

References

Figure 2. Noncontrast computed tomography shows a massive pericardial hematoma ~4 cm in size and right coronary artery pseudoaneurysm (gray arrows) with a stent (red arrowhead) and pleural fluid collection. Swan-Ganz catheter is also shown as dense lines near pseudoaneurysm. A, Implanted coronary stents are indicated by colored arrowheads: left main (pink), proximal left anterior descending coronary artery (blue), mid-left anterior descending coronary artery (bright blue), and left circumflex coronary artery (green). Swan-Ganz catheter is indicated by yellow arrowhead. B, Reconstructed sagittal image showing a fractured coronary stent (arrowhead).

Figure 3. Right coronary angiography shows blood flow extravasating from fractured stent struts into pericardial space.

Figure 4. Gross image of coronary pseudoaneurysm in operating room from the operator’s view is shown. The direction of patient’s head is left side. Both the pericardium and epicardial fat layer are opened. Dark-colored hematoma is seen through the opened pseudoaneurysm (arrowhead).
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