

Case of the Disappearing Metallic Stent



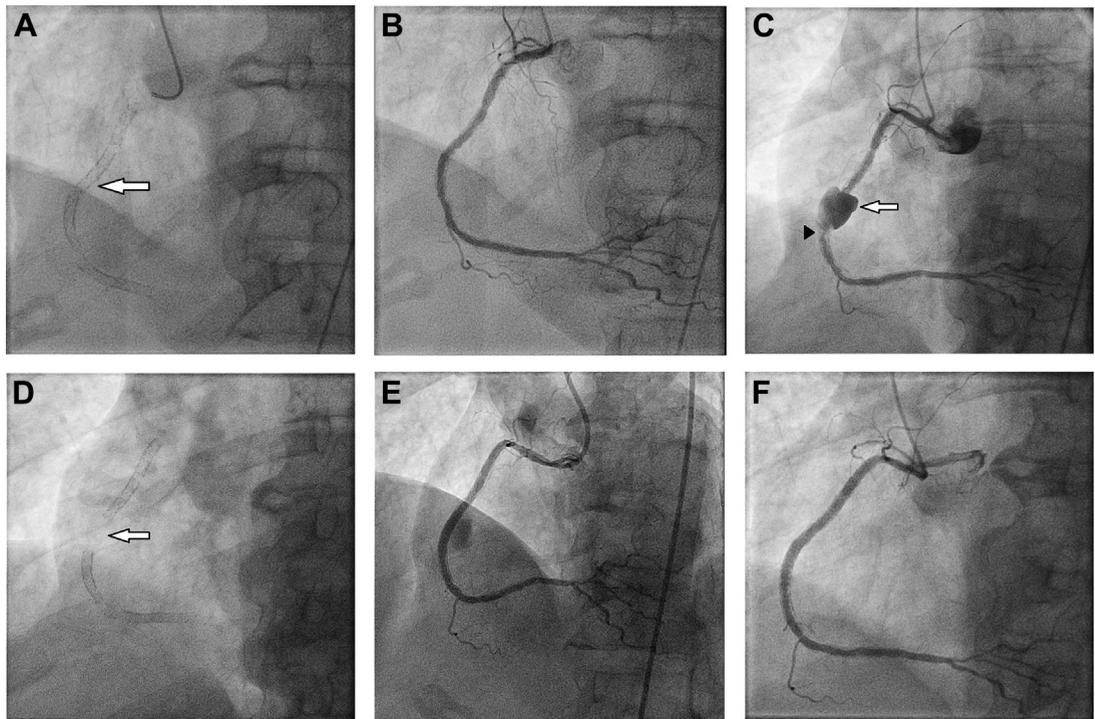
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A 60-year-old woman with hypertension, hyperlipidemia, type 2 diabetes, coronary disease, and end-stage renal disease on hemodialysis presented with a non-ST-segment elevation acute coronary syndrome. Previous coronary interventions included repeated drug-eluting stents in the proximal to mid right coronary artery with both paclitaxel- and sirolimus-eluting stents 12 years before. Coronary angiography 3 years before this presentation revealed patent stents (Figures 1A and 1B). Coronary angiography performed for the current presentation revealed a new large coronary aneurysm in the right coronary artery (Figure 1C, arrow), with absence of a previously placed stent (Figure 1D). The likely explanation for this “disappearing” stent is stent fracture with development of aneurysmal expansion and subsequent distal stent migration. Severe in-stent restenosis was noted just beyond the aneurysm (Figure 1C, arrowhead). This high-grade neoatherosclerotic lesion was the likely culprit responsible for the patient’s acute coronary syndrome presentation.

To our knowledge, this is the first reported case demonstrating late stent fracture accompanied

by aneurysm formation and stent migration into the distal portion of the vessel. Coronary artery aneurysms are known to occur at the site of prior intervention, with an incidence rate of 0.3% to 7.0% (1,2). Our patient had a type II coronary aneurysm that developed more than a decade after the initial stent deployment. Stent fracture has been reported with both bare-metal and drug-eluting stents, with an incidence rate approaching 4% within 12 months of implantation (3). Prior meta-analyses demonstrated that the risk for stent fracture is highest in the right coronary artery, with placement of overlapping or multiple stents, in areas of hinge motion, and with longer stent lengths (3,4). Covered stents were successfully used to treat our patient’s aneurysm and the restenotic lesion (Figure 1E). Follow-up angiography at 3 months performed for atypical chest pain demonstrated resolution of the aneurysm (Figure 1F).

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FIGURE 1 Right Coronary Artery Angiography

(A) Presence of stent (arrow) in the mid right coronary artery with (B) absence of aneurysm on contrast injection. (C) Angiography with fusiform aneurysm at the site of prior stent (arrow) and in-stent stenosis distal to the aneurysm (arrowhead). (D) Absence of previously placed stent (arrow). (E) Angiography following covered stent deployment demonstrating exclusion of the aneurysm. (F) Repeat angiography at 3 months with patent stents.

REFERENCES

1. Sliota P, Fischman DL, Savage MP, et al. Frequency and outcome of development of coronary artery aneurysm after intracoronary stent placement and angioplasty. *Am J Cardiol* 1997;79:1104-6.
2. Aoki J, Kirtane A, Leon MB, Dangas G. Coronary artery aneurysms after drug-eluting stent implantation. *J Am Coll Cardiol Intv* 2008;1:14-21.
3. Chakravarty T, White AJ, Buch M, et al. Meta-analysis of incidence, clinical characteristics and implications of stent fracture. *Am J Cardiol* 2010; 106:1075-80.
4. Kan J, Ge Z, Zhang J-J, et al. Incidence and clinical outcomes of stent fractures on the basis of 6,555 patients and 16,482 drug-eluting stents from 4 centers. *J Am Coll Cardiol Intv* 2016;11: 1115-23.

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