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IMAGES IN INTERVENTION

Restenosis in Magmaris Stents Due to Significant Collapse

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A 54-year-old man with a history of hypertension, diabetes, and tobacco use was admitted for unstable angina. Angiography revealed a 90% diameter stenosis in the proximal left anterior descending coronary artery. Stenting with Magmaris 3.0 × 25 mm and 3.5 × 15 mm bioresorbable scaffolds (Biotronik, Berlin, Germany) achieved satisfactory results by angiography and intravenous ultrasound (**Figures 1A to 1D**).

Nine months later, the patient developed recurrent angina at rest. Repeat angiography showed significant "in-stent" restenosis. Intravascular ultrasound and optical coherence tomography demonstrated collapse at the site of Magmaris implantation and a resultant small lumen. Blood flow was restored with Promus Premier 3.0 × 28 mm and 3.5 × 24 mm stents (Boston Scientific, Marlborough, Massachusetts) (**Figures 1E to 1H**).

Magmaris, an absorbable magnesium scaffold, has been shown to have favorable safety and effectiveness outcomes at 6 months (1). Its metal scaffold was designed to ensure sufficient (but temporary) scaffolding, similar to metal stents. Degradation and scaffold resorption are aimed to enable restoration of vasomotion and avoid the late unfavorable effects of permanent metal stents (2). Prior intravascular ultrasound studies have demonstrated that the bioresorbable magnesium stent can be completely degraded within 4 months (3). Such rapid scaffold degradation could have unfavorably weakened the radial force and could be the main cause of early vessel recoil and restenosis in this patient. Operators should be mindful of the possibility of rapid scaffold degradation and consequent restenosis with some bioresorbable scaffolds.

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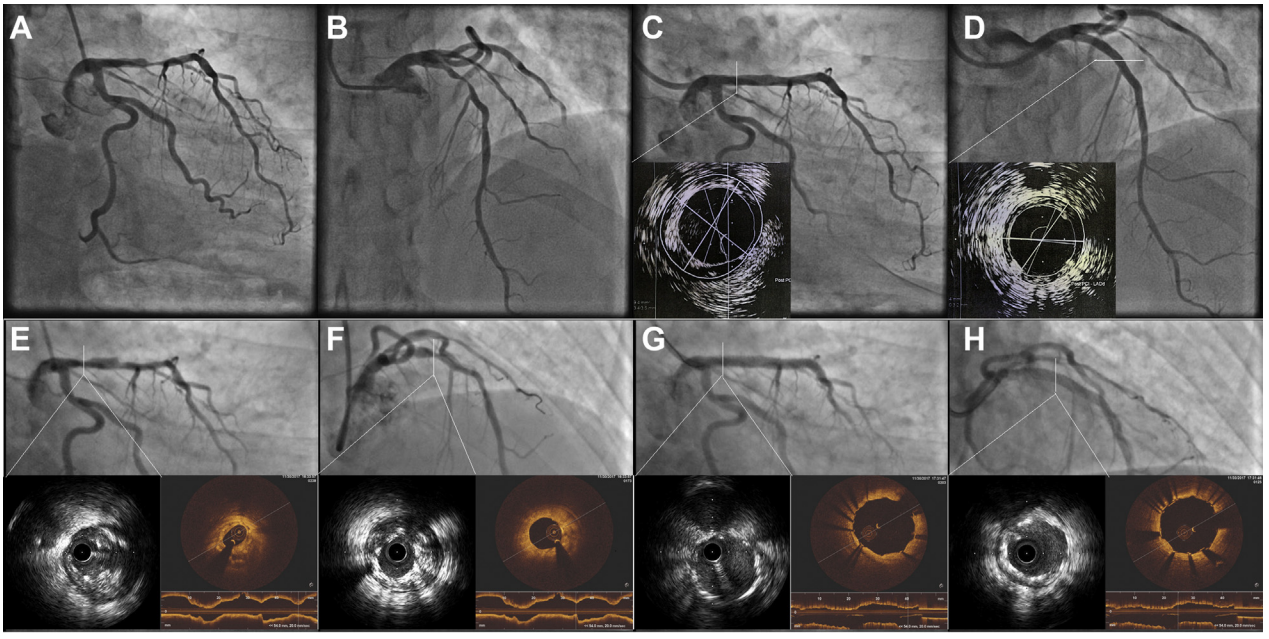
FIGURE 1 Coronary Angiography, Intravascular Ultrasound, and Optical Coherence Tomography



(A to D) Significant stenosis and satisfactory results with Magmaris stents implantation. **(E and F)** Lost IVUS and OCT images. **(G and H)** Restenosis caused by collapsed structure and good results with drug-eluting stents.

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