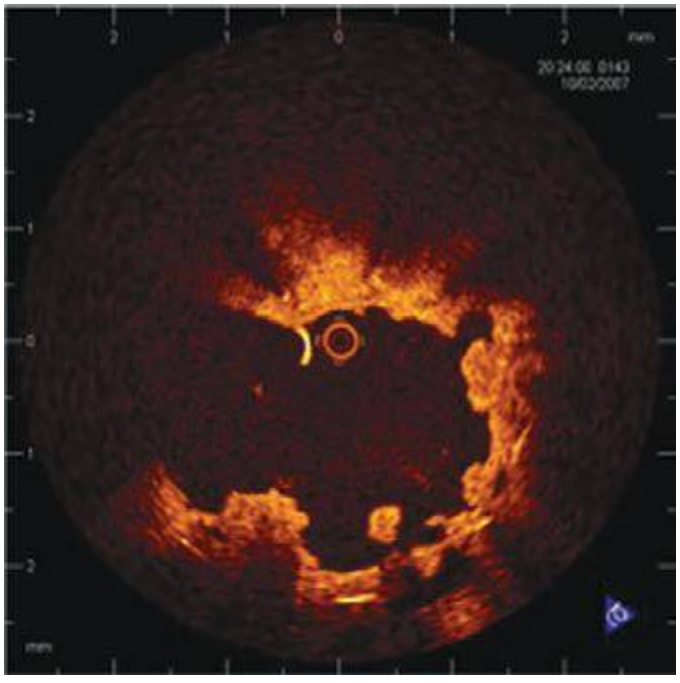

FIGURE 297e-8 Optical coherence tomography image following initial balloon dilation. Residual thrombus that is adherent to the stent struts is seen.

CASE 7: VERY LATE STENT THROMBOSIS OF A PROXIMAL LAD DRUG-ELUTING STENT

(Figs. 297e-8 and 297e-9; Videos 297e-43 to 297e-46)

- A 62-year-old male had a drug-eluting stent placed in a proximal LAD lesion to treat severe angina. He received dual antiplatelet therapy with aspirin and clopidogrel for 1 year and then discontinued clopidogrel per protocol.
- He remained asymptomatic until 15 months after the initial stent placement when he presented with severe chest pain due to an acute anterior STEMI.
- He was taken to the catheterization laboratory within 70 min of presentation, and his initial angiogram showed a total occlusion of the proximal LAD stent.

VIDEO 297e-43 Baseline angiogram showing a total occlusion of the proximal LAD within the drug-eluting stent and a significant stenosis at the origin of the LCx.

VIDEO 297e-44 The LAO view shows the LCx stenosis with a filling defect indicating that thrombus is present in the vessel lumen.

VIDEO 297e-45 The LAD lesion was crossed with a guidewire, which resulted in slow filling of the mid-LAD (TIMI 2 flow) and revealed thrombus filling the stent.

VIDEO 297e-46 The final result after LAD and LCx stenting. The LAD lesion was pretreated with balloon angioplasty, and a bare metal stent was deployed to cover the proximal lesion. The LCx ostial lesion was dilated with balloon angioplasty, and a bare metal stent was placed using a "V stenting" technique.

SUMMARY

- Stent thrombosis is an infrequent (1–2%) but serious complication of stent placement. It occurs most commonly within the first month, but rarely can occur as late as 1 year (0.2–0.6%) with bare metal stents. Very late stent thrombosis (VLST), which occurs after 1 year, is very rare with bare metal stents but can occur with drug-eluting stents.
- Premature discontinuation of dual antiplatelet therapy is the most common cause of early and late stent thrombosis; however, the etiology of VLST is not clear.
- The majority of patients with stent thrombosis present with acute coronary syndromes or STEMI; this presentation is associated with a high mortality rate (10%).
- Treatment is immediate PCI with balloon angioplasty or re-stenting.

CASE 8: TRANSCATHETER AORTIC VALVE REPLACEMENT

(Figs. 297e-10 to 297e-14; Videos 297e-47 to 297e-50)

- A 75-year-old female with symptomatic aortic stenosis and a valve area of 0.58 cm^2 by transthoracic echocardiogram.
- Chronic obstructive pulmonary disease (forced expiratory volume in 1 s [FEV_1] = 0.54) and other comorbidities contributed to an unacceptably high cardiac surgical risk (calculated logistic Euroscore = 29.57%) for aortic valve replacement.
- She was referred for transcatheter aortic valve replacement (TAVR) as part of a clinical trial.

VIDEO 297e-47 Aortogram shows patent coronary arteries and minimal aortic insufficiency.

VIDEO 297e-48 Balloon valvuloplasty is performed with rapid ventricular pacing at 180 beats/min.

VIDEO 297e-49 A 26-mm Edwards SAPIEN valve is positioned using fluoroscopic and transesophageal echo guidance and deployed.

VIDEO 297e-50 Aortogram after valve deployment shows a functional valve with mild aortic insufficiency and without impingement of the coronary ostia.

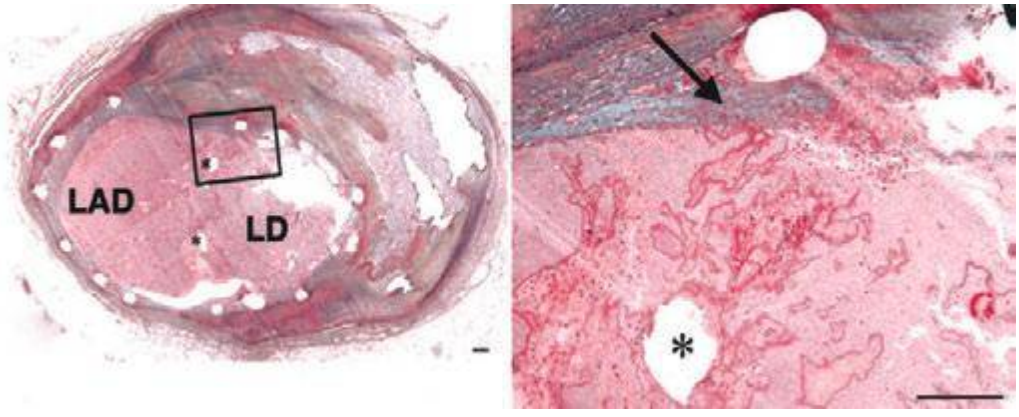

FIGURE 297e-9 Pathologic specimen of late stent thrombosis obtained at autopsy. Thrombus is seen filling the LAD vessel lumen and extending into a diagonal branch (LD). Stent struts occupied the space denoted by the asterisk (*) (*left*). A magnified view of the vessel reveals thrombus around the stent strut and neointima formation (*arrow*) (*right*).