

**297e-2** **VIDEO 297e-9** Both vessels are accessed with guidewires and pre-treated with balloon angioplasty.

**VIDEO 297e-10** Result after balloon angioplasty.

**VIDEO 297e-11** Stent being positioned in the LAD.

**VIDEO 297e-12** LAD poststent result.

**VIDEO 297e-13** Stent deployed in the diagonal branch through the stent struts in the LAD using the “culotte” technique.

**VIDEO 297e-14** Diagonal branch poststent result.

**VIDEO 297e-15** Simultaneous inflation of two 2.5-mm “kissing” balloons.

**VIDEO 297e-16** Final postbifurcation stenting result.

### SUMMARY

- Approximately 15–20% of PCIs will involve the treatment of bifurcation lesions.
- Bifurcation lesions require consideration of PCI strategies that protect side-branch patency.
- There are both one-stent and two-stent techniques to treat bifurcation lesions; the selection of technique depends on anatomic considerations, including plaque burden, angle of side-branch take-off, plaque shift during angioplasty, and side-branch distribution.
- Rates of target lesion revascularization and stent thrombosis are similar between one-stent and two-stent procedures.

### CASE 3: INFERIOR MYOCARDIAL INFARCTION—THROMBUS AND MANUAL THROMBECTOMY

(Figs. 297e-2 to 297e-4; Videos 297e-17 to 297e-22)

- A 59-year-old male presented to the emergency room with 2 h of severe midsternal chest pressure.
- His systolic blood pressure was 100 mmHg, and he was tachycardic in sinus rhythm with a heart rate of 90–100 beats/min.
- His initial electrocardiogram (ECG) showed inferior ST-segment elevations with lateral ST-segment depressions.
- He was referred emergently to the cardiac catheterization laboratory for primary PCI.

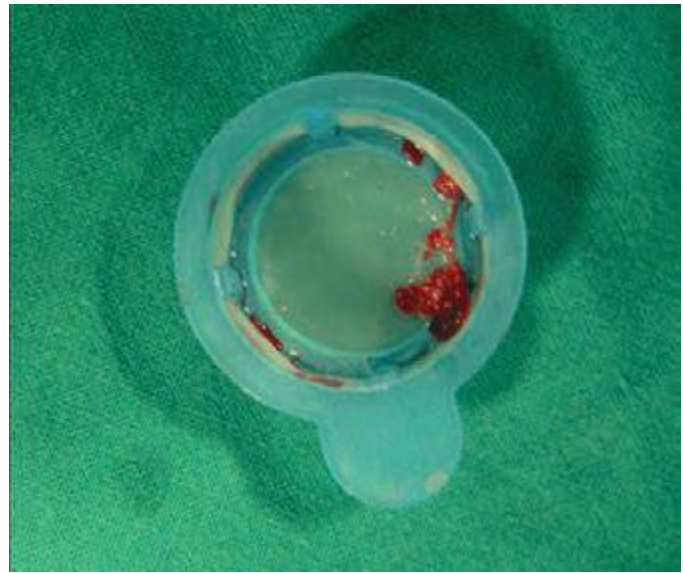
**VIDEO 297e-17** The right coronary artery (RCA) is totally occluded with filling defects in the vessel after contrast injection, indicating thrombus is present in the vessel.

**VIDEO 297e-18** An angioplasty wire is threaded through the thrombotic lesion, but this does not restore blood flow to the distal vessel.

**VIDEO 297e-19** Result after manual thrombectomy and thrombus extraction. The “culprit” ruptured plaque and residual thrombus are now apparent in the vessel.



**FIGURE 297e-2** Preprocedure ECG showing inferior ST-segment elevations and lateral ST-segment depressions.



**FIGURE 297e-3** Example of an organized red thrombus retrieved by manual thrombectomy.

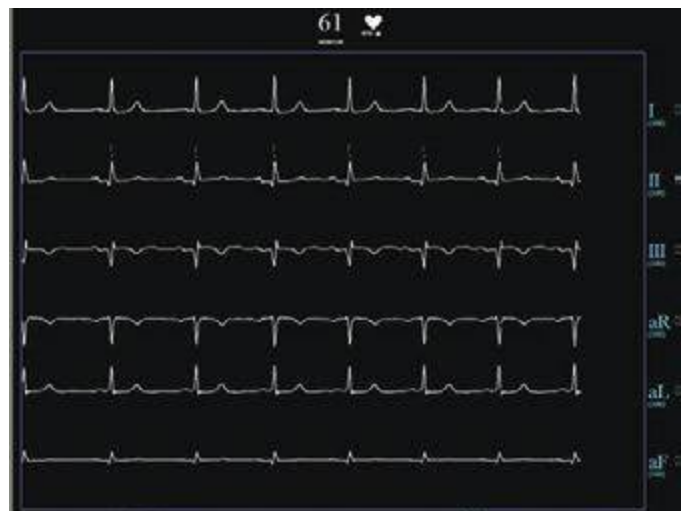
**VIDEO 297e-20** After balloon angioplasty and stenting, thrombus is still present.

**VIDEO 297e-21** After repeat manual thrombectomy and expansion of the stent, the thrombus is no longer present.

**VIDEO 297e-22** Final result.

### SUMMARY

- An acute STEMI occurs following plaque rupture that promotes thrombotic occlusion of a coronary artery.
- Despite successful revascularization of the epicardial coronary artery, microemboli liberated during balloon angioplasty and stenting may lead to persistent microvascular dysfunction. When present, microvascular dysfunction is associated with a larger infarct size, heart failure, malignant ventricular arrhythmias, and death.
- Manual thrombectomy is used to aspirate or remove thrombus in the vessel and limit distal embolization during angioplasty and stenting.
- Manual thrombectomy in primary PCI is associated with improved myocardial perfusion and a reduction in mortality.
- Adjunctive antiplatelet and antithrombin agents are important to aid in the resolution of intracoronary thrombus.



**FIGURE 297e-4** Postprocedure ECG showing resolution of ST-segment elevations.