

Cath Lab Digest

A product, news & clinical update for the cardiac catheterization laboratory specialist

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STRUCTURAL HEART

Management of Complex Valve Disease Patients

CLD talks with Structural Cardiologist Lowie Van Assche, MD, Baptist Health South Florida, Miami, Florida, about his presentation at Baptist Health's Echocardiography and Structural Heart Symposium, which took place September 27th-28th in Coral Gables, Florida.

How are standard structural heart disease patients different from more complex patients?

For most of our transcatheter aortic valve replacement (TAVR) or transcatheter edge-to-edge repair (TEER) population, the heart team approach has become straightforward. Usually these are stable outpatients, and we discuss each patient as a team in an effort to decide if we should provide medical management, transcatheter therapy, or surgical therapy. However, not infrequently, we will encounter patients who are very sick and it is unclear as to what approach we should take. These patients have complex presentations, fall outside of the guidelines, and don't fit inside the usual pathway of how we treat patients. The good news is that with new transcatheter therapies, we can help some of these patients who are not necessarily within what we might consider standard of care practice. In patients who have acute complications, the number one thing we try to do is get them out of trouble. If we can prevent these patients from decompensating and dying, many will go on have a positive outcome.

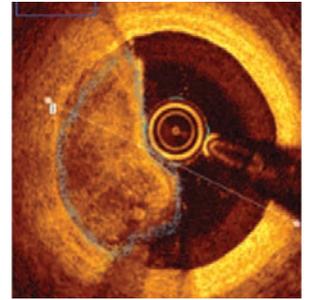
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CLINICAL IMAGES

Optical Coherence Tomography in the Peripheral Vasculature

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PAD TREATMENT

Retrospective Review of Directional Atherectomy and Drug-Coated Balloon Use in a PAD Safety-Net Population

Shea E. Hogan, MD, MSCS; Matthew Holland, MD; Joseph Burke, MD; Paisley Johnson, MD; Demetria McNeal, MD; Lisa Cicutto, MD; Mark Nehler, MD; Pamela N. Peterson, MD, MSPH

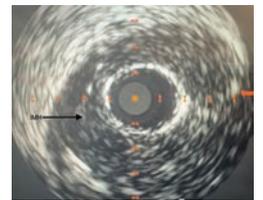
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CASE REPORT

Not the Usual Suspect: Intracoronary Hematoma Presenting as an Acute STEMI

Yashwant Agrawal, MD; Dominika M. Zoltowska, MD; Anthony Elghoul; Anwita Reddy Nimma; Tim A. Fischell, MD

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Not the Usual Suspect: Intracoronary Hematoma Presenting as an Acute STEMI

Yashwant Agrawal, MD; Dominika M. Zoltowska, MD; Anthony Elghoul; Anwita Reddy Nimma; Tim A. Fischell, MD



Figure 1. Electrocardiogram consistent with acute inferior ST-elevation myocardial infarction (STEMI).

A 70-year-old female with no significant medical history presented with two hours of worsening left-sided chest discomfort and diaphoresis. An electrocardiogram (ECG) revealed acute inferior ST-elevation myocardial infarction (STEMI) (Figure 1). Coronary angiography showed a 60%-70% stenosis involving the proximal-mid left anterior descending (LAD) coronary artery with the appearance of spontaneous coronary artery dissection (SCAD) and a 100% occluded proximal right coronary artery (RCA) (Figure 2A-B).

Our patient had a spontaneous right coronary artery intramural hematoma (IMH) causing inferior ST-elevation myocardial infarction, identified on intravascular ultrasound.

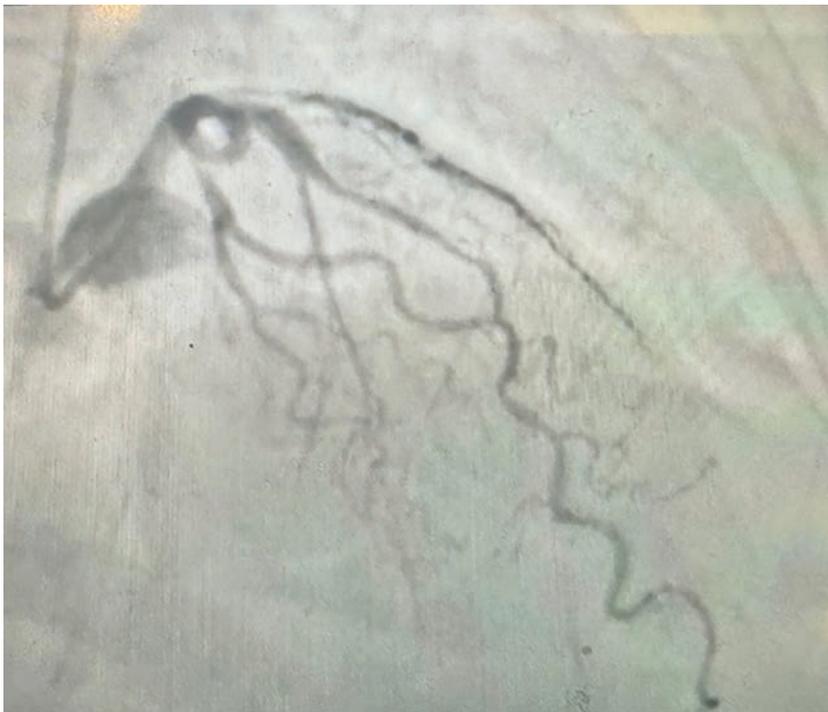


Figure 2A-B. Coronary angiography revealed (A) a 60%-70% stenosis involving the proximal-mid left anterior descending coronary artery that had the appearance of spontaneous coronary artery dissection and (B) a 100% occluded proximal right coronary artery.

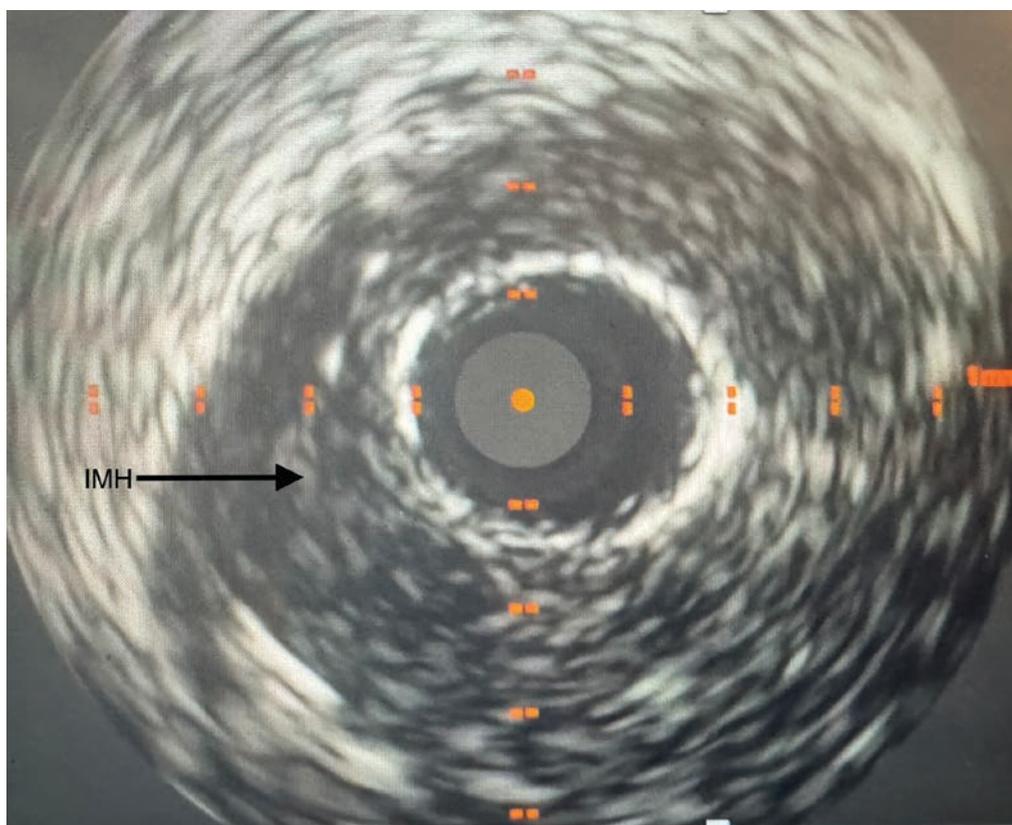


Figure 3. Intravascular ultrasound showed a large intramural hematoma in the distal right coronary artery.

After failing to cross the lesion with a workhorse wire, a Pilot 50 (Abbott) was successful. Percutaneous transluminal coronary angioplasty (PTCA) was unsuccessful in restoration of TIMI flow. Intravascular ultrasound (IVUS) showed a large intramural hematoma (IMH) in the distal RCA and severe stenosis with the presence of fibrofatty plaque through the proximal RCA (Video 1) (Figure 3). A Penumbra mechanical thrombectomy catheter was inserted and intracoronary (IC) injection

IMH occurs with blood accumulation between the intima and media layers of the intra-arterial wall. Spontaneous coronary artery dissection, stress, connective tissue disorders, and iatrogenic events are the most common causes of IMH.

revealed flow in the distal coronary bed. Mechanical thrombectomy was unsuccessful as well (Video 2), chosen in consideration of a thrombotic component contributing to this unusual STEMI. The Penumbra catheter was re-inserted, and IC 200 mcg of nicardipine was administered, which also failed. One mg of IC tPA was then injected, which restored flow (Video 3). Next, 2.75 mm x 38 mm and a 3.0 mm x 48 mm drug-eluting stents from the mid distal to the proximal RCA were successfully deployed (Video 4). Post percutaneous coronary intervention IVUS revealed well apposed and expanded stents (Video 5). The patient was discharged 2 days later on guideline-directed medical therapy. An outpatient workup for fibromuscular dysplasia was unremarkable.

Conclusion

Spontaneous or trauma-related coronary intramural hematoma, a subset of coronary artery dissection, is a rare, challenging, and under-recognized diagnosis constituting 1% to 4% of all MIs.¹ IMH occurs with blood

accumulation between the intima and media layers of the intra-arterial wall. SCAD, stress, connective tissue disorders, and iatrogenic events are the most common causes of IMH. In hemodynamically stable lesions and patients, medical management can be pursued. Otherwise, PTCA, especially using a cutting balloon to decompress the hematoma, and stent placement to prevent luminal collapse, is performed. In refractory cases, emergent coronary artery bypass graft surgery is to be considered.

Our patient had a spontaneous right coronary artery IMH causing inferior STEMI, identified on IVUS with IC tPA used to treat no-reflow phenomena and stent placement to prevent collapsing of the coronary lumen secondary to the IMH. ■

REFERENCE

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Clinical videos are available online with the article by Agrawal et al:



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The authors confirm that informed consent was obtained from the patient for the publication described in the manuscript and the publication thereof.

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