A 36-year-old man was admitted to the hospital for heart failure symptoms. He had initially presented to the emergency room 3 months prior to admission for shortness of breath and a low-grade fever. At that time, he was diagnosed with possible pneumonia and started on antibiotics. Despite this, his symptoms progressed over the next few months. At presentation, he experienced dyspnea on exertion, orthopnea, paroxysmal nocturnal dyspnea, and lower extremity edema.

The patient’s past medical history was significant for obstructive sleep apnea and 15 pack-year smoking. On presentation, his examination was significant for an early diastolic murmur in the right upper sternal border, right upper quadrant tenderness, and pitting edema. Laboratory reports were significant for elevated brain natriuretic peptide 1629 and a mild increase in the liver function parameters.

An echocardiogram revealed a linear structure, which seemed to arise from the sinus of Valsalva, prolapsed into the aortic valve orifice during diastole and flapped back into the aortic root during systole. The prolapsing of this linear structure into the aortic valve orifice during diastole prevented aortic valve closure and resulted in severe aortic insufficiency. The aortic valve was tricuspid, and the cusps appeared otherwise structurally normal (Figures 1 and 2; Movies I–IV in the online-only data supplement). The linear structure was concerning for an aortic dissection, and the patient had a computed tomography of the aorta that confirmed a Stanford type A/Debakey type 2 dissection (Figure 3). He successfully underwent emergent surgery with aortic valve replacement with a composite mechanical valve conduit and hemi-arch repair using a Gelweave graft.

**Disclosures**

None.

**Figure 1.** Parasternal long axis view showing the dissection flap in the aortic root in systole (A) and prolapsing through the aortic valve orifice in diastole (B) preventing the aortic valve from closing and resulting in severe aortic insufficiency. C, Color Doppler image demonstrating severe aortic insufficiency (arrows). D, Continuous wave Doppler tracing of the aortic insufficiency demonstrating a short pressure half-time (103 ms) suggestive of severe aortic insufficiency [kr1].
Figure 2. Pulse wave Doppler tracing across the proximal descending (A) and abdominal aorta (B) showing holo-diastolic flow reversal (arrows) consistent with severe aortic insufficiency.

Figure 3. Computed tomography demonstrating Stanford type A/Debakey type 2 dissection (arrows) in both the transverse and coronal views.
A Case of a Double Valve
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