Traumatic Aortic Valve Rupture

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After a head-on motor vehicle collision, a 19-year-old woman was admitted to our hospital with severe blunt chest trauma, bilateral pneumothorax, and a closed head injury with an initial Glasgow Coma Scale of 3. After stabilization, a diastolic murmur was heard. Transthoracic echocardiography showed moderate aortic valve regurgitation (AR). She was treated for her closed head injury and made a remarkable recovery. Follow-up transesophageal echocardiography (TEE) showed severe AR caused by rupture of the acoronary cusp, a rare entity after blunt chest trauma (Figures 1 and 2 and Movies I and II). Three months later, she was operated on (see Figure 3). The cusp was reconstructed with a small pericardial patch (Figure 4). On postoperative TEE, the aortic valve cusp showed full mobility and only trace AR (Figure 5 and Movies III and IV). She had an uneventful recovery and remains well 1 year after surgery.

Figure 1. Flail acoronary aortic valve cusp on TEE.

Figure 2. Severity of aortic regurgitation illustrated with color Doppler.
Figure 3. Intraoperative view shows tear of acorony cusp at aortic valve annulus (arrow).

Figure 4. Cusp resuspended with small pericardial patch (arrow).

Figure 5. Postoperative echocardiogram shows good function of acorony valve cusp with trace aortic regurgitation.
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