Extensive Intramural Esophageal Hematoma After Transesophageal Echocardiography During Atrial Fibrillation Ablation

Min-young Kim, MBChB; Fu Siong Ng, MRCP, PhD; Ben Ariff, FRCR, PhD; George B. Hanna, FRCS; Zachary Whinnett, MRCP, PhD; Prapa Kanagaratnam, MRCP, PhD; Mark Tanner, MRCP, PhD; Phang Boon Lim MRCP, PhD

A 72-year-old man with persistent atrial fibrillation, a history of myocardial infarction and transient ischemic attack, and a CHADS2-VASc score of 3 on warfarin underwent an elective atrial fibrillation ablation. His international normalized ratio was 2.1 on the day of the procedure; he had taken his last warfarin dose 2 days before the procedure. The ablation was performed under general anesthesia, and an uncomplicated preprocedural transesophageal echocardiogram (TEE) was performed that excluded left atrial thrombus. The TEE probe was placed within the esophagus for the duration of the procedure, in part to guide the transseptal puncture. Wide-area circumferential ablation was performed to isolate the pulmonary veins, with further ablation of complex fractional atrial electrograms. Intravenous heparin was given during the procedure to maintain his activated clotting >300 seconds, and protamine was administered to reverse anticoagulation before removal of the sheaths at the end of the procedure.

Seventeen hours after the procedure, the patient had 100 mL fresh hematemesis, developed melena, and complained of dysphagia. His hemoglobin had dropped by 2 U compared with the beginning of the procedure (166 to 144 g/L). The rest of the blood results were as follows: sodium, 148 mmol/L; potassium, 4.0 mmol/L; urea, 7.4 mmol/L; and creatinine, 114 mmol/L. An urgent computed tomography of the thorax with contrast was requested that showed the distal two thirds of the esophagus expanded with low-attenuation material, with contrast seen adjacently in a tightly compressed lumen. There was no layering of contrast to suggest active bleeding (Figures 1, 2A, and 3A). A diagnosis of intramural hematoma of the distal two thirds of the esophagus was made. A chest radiograph was obtained for completion that showed subtle signs pointing toward the diagnosis (Figure 4). The patient remained hemodynamically stable and did not require transfusion or surgical intervention. The case was discussed with a cardiothoracic surgeon and a gastroenterologist and was managed conservatively. The case was discussed with a cardiothoracic surgeon and a gastroenterologist and was managed conservatively. The case was discussed with a cardiothoracic surgeon and a gastroenterologist and was managed conservatively.

Diagnostic investigations should include computed tomography imaging of the thorax in the first instance to rule out atrioesophageal fistula before endoscopy. Endoscopy or barium swallow studies may be useful in assessing structural and functional damage caused by the esophageal hematoma and for follow-up monitoring. Unless the patient becomes hemodynamically unstable, esophageal hematoma can usually be managed conservatively by keeping the patient nil-by-mouth initially, followed by careful reintroduction of fluids and then a soft
diet. A multidisciplinary approach in managing the hematoma is important to allow appropriately guided reintroduction of anticoagulation, and it is probably advisable that low-molecular-weight heparin be omitted when warfarin is restarted.1 Close monitoring of the international normalized ratio to reach a therapeutic range when anticoagulation is restarted is recommended to reduce the risk of rebleeding or thrombosis.

Disclosures
None.

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References

Figure 1. Axial contrast-enhanced image of the chest at the level of the aortic arch demonstrating a soft tissue/fluid attenuation area (star) within the esophagus causing displacement of the contrast-filled lumen of the esophagus (arrow).

Figure 2. A, Axial contrast-enhanced images of the chest at the level of the left atrium demonstrating a soft tissue/fluid attenuation area (star) within the esophagus abutting the posterior wall of the left atrium (arrow). Pleural calcification in keeping with previous asbestos exposure was noted incidentally. B, Axial contrast-enhanced computed tomography image showing resolution of the esophageal hematoma (arrow).
Figure 3. A, Sagittal reconstruction of contrast-enhanced images of the chest demonstrating a soft tissue/fluid attenuation area (arrows) within the esophagus causing contrast holdup in the proximal esophagus (star). B, Sagittal reconstruction of a contrast-enhanced computed tomography image showing resolution of the esophageal hematoma (arrows).

Figure 4. Frontal chest radiograph demonstrating curvilinear soft tissue density to the right of the midline (arrows) extending from just above the level of the aortic arch to the level of the diaphragm. Features compatible with previous asbestos exposure were noted incidentally.
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