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Editorial

Nevzat Erdil

Antalya City Hospital, Department of Cardiovascular Surgery, Antalya, Türkiye

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Corresponding Author: Nevzat Erdil, Antalya City Hospital, Department of Cardiovascular Surgery, Antalya, Türkiye
Email: editor.nevzaterdil@gmail.com

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Transmural aortic hematoma: Who needs emergency surgery, who can be managed conservatively – Timing is everything!

Dear Editor,

Acute transmural aortic hematoma (ATAH) represents a critical yet underrecognized entity within the spectrum of acute aortic syndromes (AAS). Characterized by intramural hemorrhage without an overt intimal tear, ATAH presents significant diagnostic and therapeutic challenges. Despite its clinical importance, there remains a lack of consensus regarding standardized management strategies, underscoring the need for further investigation and evidence-based guidelines (1,2).

From a diagnostic perspective, advanced imaging modalities, including contrast-enhanced computed tomography (CT), magnetic resonance imaging (MRI), and transesophageal echocardiography (TEE), are indispensable. These modalities not only confirm the presence of aortic hematoma but also provide critical information regarding its extent, potential complications (e.g., impending rupture, branch vessel compromise), and associated conditions such as penetrating atherosclerotic ulcers (3).

We present the case of a 69-year-old man who was admitted to our hospital with nonspecific chest pain. Imaging studies revealed a 2-3 mm transmural hematoma originating from the ascending aorta (Figure 1a). He was admitted to the intensive care unit for close monitoring. His symptoms resolved with medical management, and his blood pressure and heart rate remained stable.

However, 24 hours later, the patient developed sudden, severe chest pain accompanied by nausea, vomiting, and clinical deterioration. An urgent contrast-enhanced CT scan revealed the evolution of the lesion into a Type A aortic dissection (Figure 1b, Figure 1c). The patient was taken to the operating room within one hour. Intraoperatively, the dissection was found to extend to the left main coronary artery, necessitating a modified Cabrol procedure using a saphenous vein graft (Figure 1d). The postoperative course was uneventful, and the patient was discharged on the seventh postoperative day in stable condition.

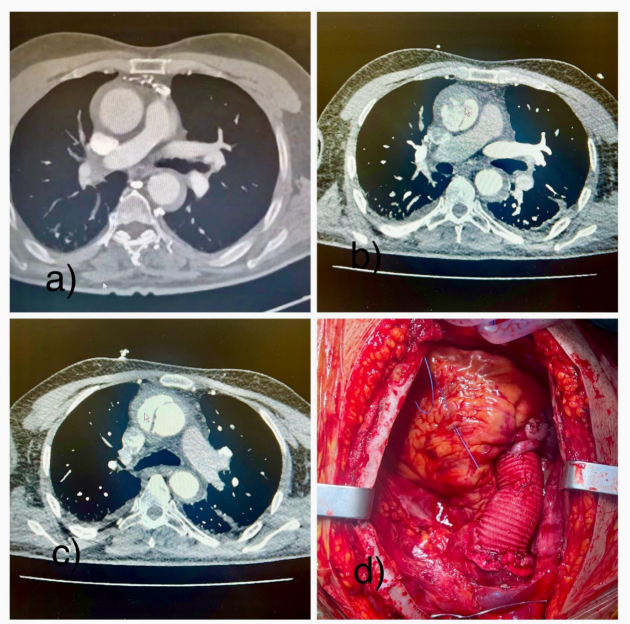

Figure 1. Preoperative CT views and intraoperative view

Management of ATAH is dictated by patient presentation, hematoma location, and the presence of complications. Conservative management, primarily consisting of strict blood pressure and heart rate control, remains the mainstay for stable patients, particularly those with hematomas confined to the descending thoracic aorta (4). Beta-blockers and vasodilators play a pivotal role in reducing aortic wall stress and preventing progression.

Surgical intervention is generally indicated for patients with ascending aortic involvement, signs of rupture, or rapid hematoma expansion. The urgency of surgical repair in these cases reflects the high mortality risk associated with ATAH progression (5). However, in elderly patients, those with significant comorbidities, or cases where the hematoma is suspected to be chronic, even in the ascending aorta, the decision for emergency surgery can be challenging. In such scenarios, hospitalization under intensive care conditions is crucial. A multidisciplinary evaluation involving cardiologists, radiologists, and cardiovascular surgeons is essential in determining the optimal timing and necessity of surgical intervention. Our institutional experience suggests that in cases of diagnostic uncertainty, prioritizing early surgical intervention can be life-saving.

Recent advancements in aortic wall biomechanics and imaging biomarkers hold promise for refining risk stratification and guiding individualized treatment approaches (6). Nevertheless, significant gaps remain, including limited randomized clinical trial data and variability in management strategies across institutions. This highlights the urgent need for multicenter registries and prospective studies to establish standardized, evidence-based treatment algorithms.

In conclusion, ATAH represents a complex and dynamic clinical entity requiring a multidisciplinary approach. Ongoing research and collaboration among cardiovascular specialists are imperative to refine diagnostic criteria, optimize therapeutic strategies, and ultimately improve patient outcomes in this high-risk population.

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