A “leaking” aorta

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Video clip is available online.

A 14-year-old boy was brought to our trauma center after a high-energy impact motorcycle crash. He was in hemodynamically unstable condition (blood pressure 70/40 mm Hg) and unresponsive to resuscitation. Chest radiography showed a large left hemothorax with clearly widened mediastinum (Figure 1). An intercostal drain was inserted, and 1300 mL of blood was evacuated. After aggressive resuscitation, blood pressure increased to 90 mm Hg systolic. In light of the suspicion of thoracic aortic injury and the response to fluid resuscitation, an emergency computed tomographic scan was therefore elected as the next step toward an emergency thoracotomy. Contrast-enhanced computed tomography showed a still large left hemothorax with a 40-mm hemopericardium from American Association for the Surgery of Trauma grade V traumatic injury of the thoracic aorta and an active extraluminal leak of contrast from the aortic wall at the level of the isthmus, contained within a large mediastinal hematoma (Figures 2-6 and Videos 1-4). The patient was taken to the operating room, where cardiac arrest occurred. After cardiopulmonary resuscitation, the patient underwent on-table emergency endovascular repair with endograft insertion, obtaining a complete seal of the rupture. The patient recovered without deficit and was discharged on postoperative

FIGURE 1. Chest radiograph showing large left hemothorax with a clearly widened mediastinum.

day 13. At 3 years of follow-up, the patient is well and without endograft-related complications on magnetic resonance imaging. This is an exceptionally rare case of a patient in extremis with grade V aortic injury and active contrast leak successfully managed by on-table endovascular repair.

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FIGURE 2. Computed tomography angiography: Three-dimensional reconstruction using volume rendering of the aortic isthmus rupture. Rupture (*white arrow*); acute aortic leaking (*red arrow*). A, Anterior view; 30° LAO, oblique view; P, posterior view.

FIGURE 3. Computed tomography angiography: Axial view shows the aortic lesion. Rupture (*white arrow*); acute aortic leaking (*red arrow*).

FIGURE 4. Computed tomography angiography: Coronal view shows the aortic lesion. Acute aortic leaking (*red arrow*).

FIGURE 5. Computed tomography angiography: Sagittal view shows the aortic lesion. Acute aortic leaking (*red arrow*).

FIGURE 6. A, Computed tomography angiography: Axial (B), sagittal (C), coronal (D) views show the aortic lesion. Acute aortic leaking (*red arrow*).