A 17-year-old boy was sent to the emergency service for an accidental nail-gun shot injury of the chest. His blood pressure was 90/60 mm Hg, heart rate was 110 bpm, and oxygen saturation was 87% before anesthetic induction in the operating room. Transesophageal echocardiography undertaken after induction with general anesthesia and endotracheal intubation showed that the left ventricle and descending aorta were penetrated by the nail. There was large amount of pericardial effusion with cardiac tamponade. Periaortic hematoma was evident by transesophageal echocardiography. Under partial cardiopulmonary bypass, the nail was removed, and the wounds of the left ventricular wall and descending aorta were repaired. The patient was discharged uneventfully 7 days after the accident.

Figure 1. Transesophageal echocardiography of descending aorta, short-axis view. A nail (large arrow) penetrating into descending aorta and large hematoma in front of aorta (small arrow) can be clearly seen.

Figure 2. Transesophageal echocardiography of descending aorta, long-axis view. Penetrating nail (large arrow) and aortic blood flow with hematoma (small arrows) surrounding aorta can be clearly seen.
Figure 3. Transesophageal echocardiography of ventricles, short-axis view. Large amount of pericardial effusion is demonstrated. LV indicates left ventricle; RV, right ventricle.

Figure 4. Transesophageal echocardiography of ventricles, short-axis view. Right ventricle is compressed by pericardial effusion (large arrow), and a lacerated wound at apex of left ventricle and part of interventricular septum is shown (small arrow). LV indicates left ventricle; RV, right ventricle.
Nail Gun Penetrating Injury of the Left Ventricle and Descending Aorta
Ming-Jiuh Wang, I-Shiang Chen and Shen-Kuo Tsai

Circulation. 1999;100:e18-e19
doi: 10.1161/01.CIR.100.3.e18

Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 1999 American Heart Association, Inc. All rights reserved.
Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circ.ahajournals.org/content/100/3/e18

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Circulation can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Circulation is online at:
http://circ.ahajournals.org/subscriptions/