Tension Pneumopericardium Secondary to Gastropericardial Fistula Presenting as Acute Pericarditis With Cardiac Tamponade Physiology

Jacob A. Misenheimer, MD, Yan Liu, MD, Gregory Means, MD, Prashant Kaul, MD, Michael Yeung, MD

A 44-year-old man with prior Nissen fundoplication presented with chest pain, hypotension, tachycardia, and inferior ST-segment elevation on electrocardiography. Coronary angiography demonstrated normal coronaries, and left ventriculography revealed radiolucency in the pericardial space (Figure 1, Online Video 1). Echocardiographic windows were poor. Right heart catheterization revealed diastolic equalization of pressures consistent with tamponade. He improved initially with intravenous fluids but developed recurrent hypotension and worsening sinus tachycardia. During pericardiocentesis, air and fluid were aspirated with immediate stabilization. Chest radiograph obtained before pericardiocentesis revealed pneumomediastinum (Figure 2). Computed tomography of the chest and abdomen suggested gastropericardial fistula (Figure 3), which was later repaired surgically.

Pneumopericardium typically results from chest trauma (1) but can be a complication of gastrointestinal procedures (2). Tension pneumopericardium, which often mimics ST-segment elevation myocardial infarction and cardiac tamponade (3), can be fatal (1). Rapid identification and pericardiocentesis is essential. Echocardiography is seldom useful due to suboptimal windows. Computed tomography, cineangiography, and chest radiography are helpful; right heart catheterization is sometimes necessary to confirm tamponade physiology.

From the Division of Cardiology, University of North Carolina, Chapel Hill, North Carolina. The authors have reported that they have no relationships relevant to the contents of this paper to disclose.

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FIGURE 1 Left Ventriculography Demonstrating Pneumopericardium

Pneumopericardium demonstrated by radiolucency within the pericardial space. Online Video 1 demonstrates this finding in motion.

REPRINT REQUESTS AND CORRESPONDENCE: Dr. Jacob Misenheimer, 160 Dental Circle, CB 7075, Chapel Hill, North Carolina 27599. E-mail: jacob.misenheimer@unchealth.unc.edu.
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APPENDIX For a supplemental video, please see the online version of this article.