

# Percutaneous Balloon Pericardiotomy for Recurrent Malignant Pericardial Effusion

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An 82-year-old woman with stage 3 non-small cell lung cancer presented with a large pericardial effusion demonstrated by transthoracic echocardiography (TTE) (Figure 1, white arrow) (Supplemental Digital Content 1, <http://links.lww.com/JTO/A157>). She had a history of previous pericardial effusion treated with pericardiocentesis. She was evaluated and deemed high risk for definitive surgical treatment. Therefore, she underwent percutaneous balloon pericardiotomy, performed from a subxiphisternal approach under aseptic technique with fluoroscopic and echocardiographic guidance (Figures 2A–D) (Supplemen-

tal Digital Content 2–4, <http://links.lww.com/JTO/A158>, <http://links.lww.com/JTO/A160>, and <http://links.lww.com/JTO/A161>). Six hundred milliliters of serous fluid was aspirated, resulting in immediate symptomatic improvement. Three months later, TTE revealed a small stable effusion with no diastolic right atrium/right ventricle/collapse.

Malignant disease is a common cause of pericardial effusion with incidences ranging from 1 to 20% in all cancer patients.<sup>1,2</sup> Management is challenging with recurrence rates of 13 to 50%<sup>3</sup> after pericardiocentesis and patients often unsuitable for surgical intervention. Percutaneous balloon pericardiotomy is a simple and safe minimally invasive alternative to drain pericardial effusions.

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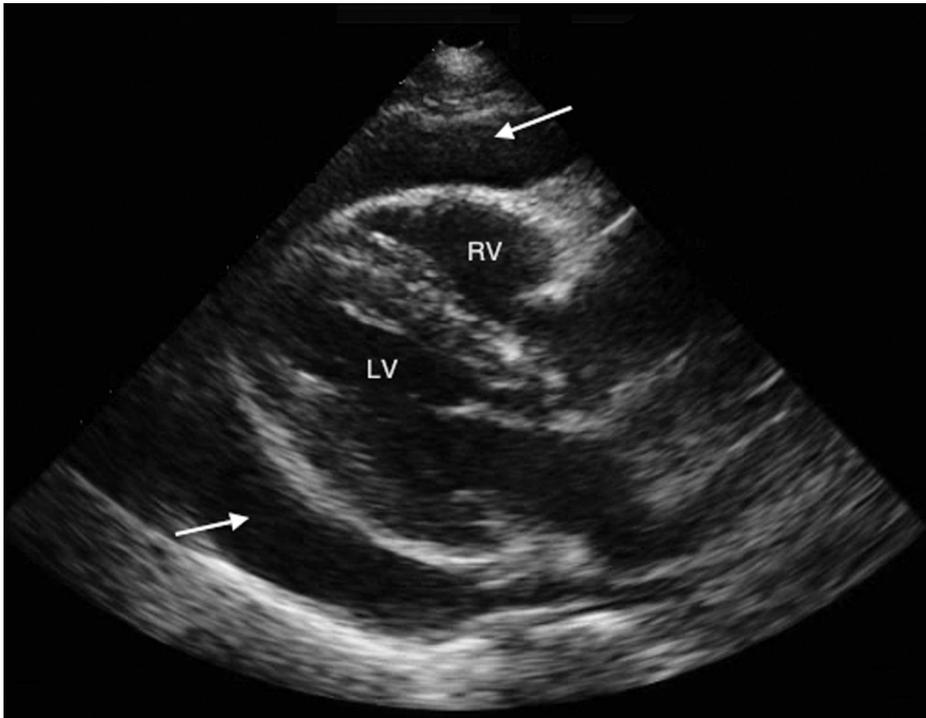
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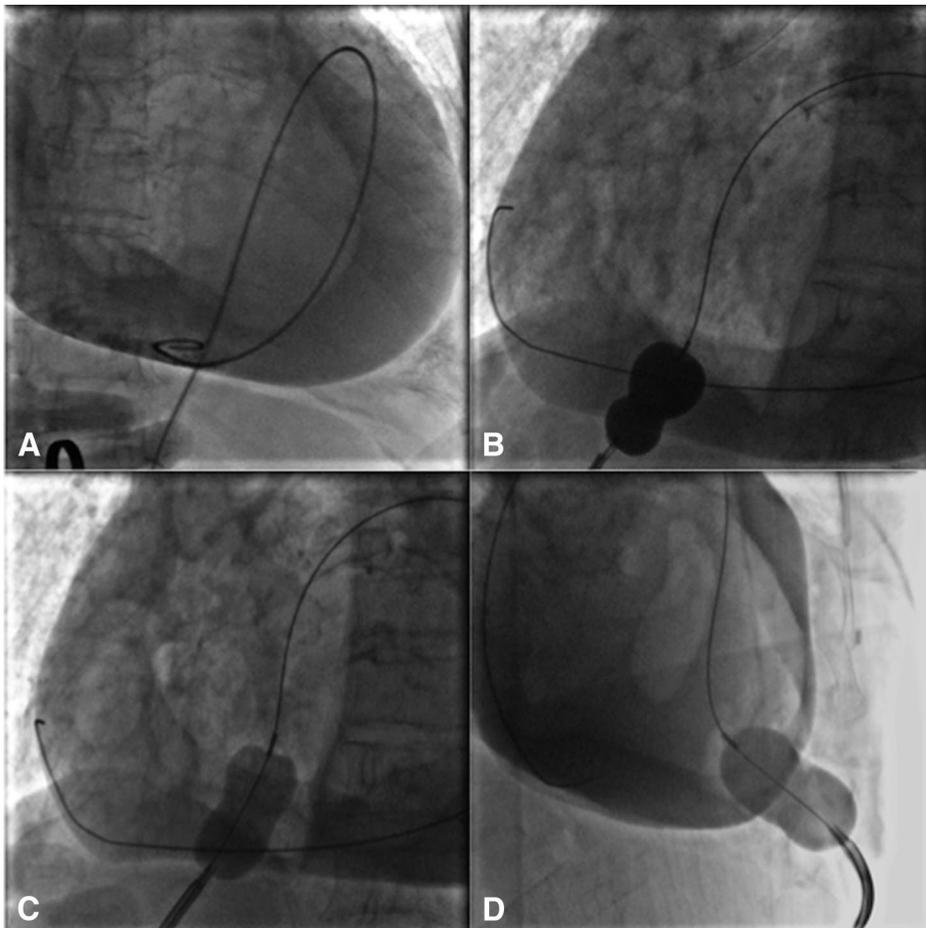
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**FIGURE 1.** Transthoracic echocardiogram showing large global pericardial effusion (white arrows). RV, right ventricle; LV, left ventricle.



**FIGURE 2.** Fluoroscopic images detailing the percutaneous balloon pericardiotomy procedure from confirmation of position using contrast (A); Inoue balloon used to dilate the pericardial space inflated repeatedly until the waist of the pericardium over the balloon was lost with consequential decrease in effusion size (B–D).