

The Efficacy and Safety of a Novel Minimally-Invasive Thoracotomy for Creation of Pericardial Window

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Background: There are two main approaches for creating a pericardial window: a thoracic approach or a sub-xiphoid approach. The currently preferred method for thoracic approach is video-assisted thoracoscopy. Each of the above mentioned approaches has its limitations. We have therefore developed a simple mini-thoracotomy approach through a parasternal vertical approach, 6 cm in length, between ribs 4-5, for creation of pericardial window in a size of more than 3x4 cm in patients with chronic large pericardial effusion (malignant and non-malignant), and evaluated the efficacy and safety of this unique approach.

Methods: We retrospectively analyzed the medical records of 30 patients (13 males) who underwent pericardial window from September 2001 to December 2010 for long-standing, symptomatic, large pericardial effusion. Procedures were done under TEE guidance. Clinical follow up was done on those discharged alive.

Results: The mean age was 63±17, median 60, range 27-90 years. Six patients had malignant effusions, and the diagnostic yield was 100%. The median procedure length was 65 minutes, and 840 ml of pericardial fluid were evacuated on average. Five patients died in-hospital due to progression of their malignant process. Procedural complications were: 1 pneumothorax, 1 patient had hypotension during surgery, 1 developed atelectasis and 5 acute renal failure post surgery. Median length of hospital stay post procedure was 7.5 days, range 5-44 days.

Conclusions: The parasternal vertical approach for creation of pericardial window is simple, safe and efficacious in all the patients in our series, and results in long-term symptomatic improvement, specifically in patients with non-malignant large pericardial effusions.