Rapid diagnosis of pericardial effusion

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Mr. DB was a 95 year old man who presented to the emergency department with dyspnea progressing over the last 3 months. Chest x-ray demonstrated an enlarged cardiac silhouette.

He had a past medical history significant for coronary artery disease, hypertension and a lobectomy due to tuberculosis.

A point of care cardiac ultrasound was conducted by an internal medicine resident as part of his physical examination in the emergency department. A large pericardial effusion was found. There were no clinical signs of tamponade.

Video 1 (online supplement; Figure 1) demonstrates a parasternal long axis view with the pericardial effusion noted to be posterior to the left ventricle in this view. Video 2 (online supplement; Figure 2) is a short axis view of the heart which is showing that the effusion is surrounding the heart. Video 3 and 4 (online supplements; Figures 3 & 4) demonstrates that the pericardial effusion is present significantly surrounding the apex as well. An echocardiogram confirmed the POCUS findings and cardiology was consulted to conduct a pericardiocentesis, following which the patient's symptoms resolved. The effusion was thought to be chronic and transudative. In this case, the use of POCUS at the bedside allowed for rapid detection of a large pericardial effusion and subsequent treatment.

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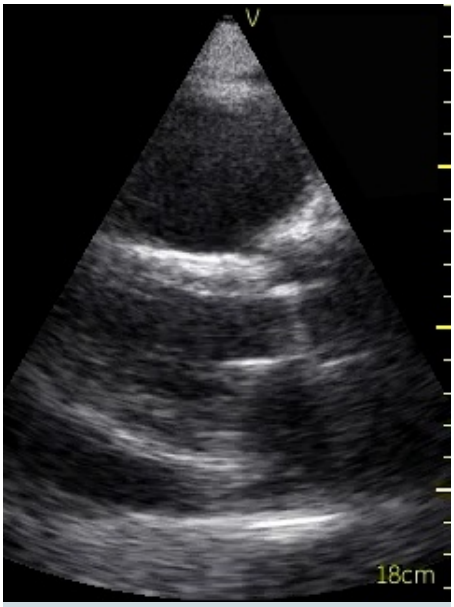

Figure 1. Parasternal long axis view with pericardial effusion. (see online Video 1).

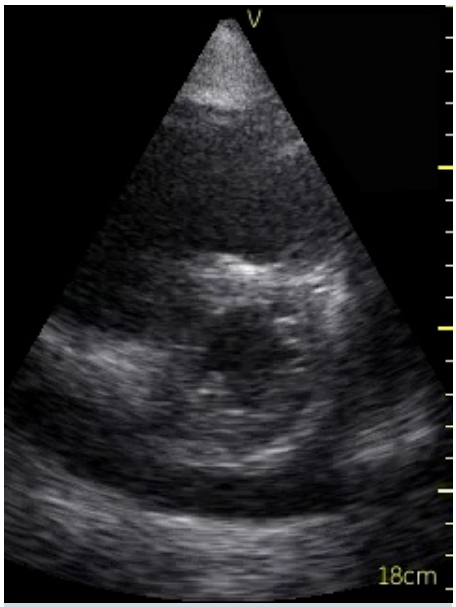

Figure 2. Parasternal short axis view with pericardial effusion. (See online Video 2).

Figure 3. Four-chamber view depicting significant pericardial effusion surrounding the apex. (See online Video 3).

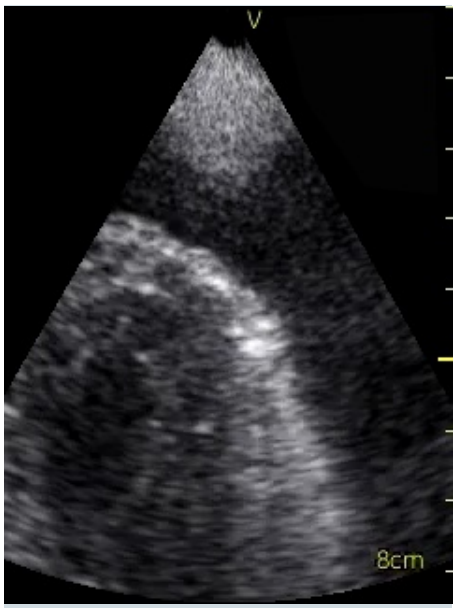

Figure 4. Close-up of four-chamber view depicting significant pericardial effusion surrounding the apex next to the left ventricle. (See online Video 4).