

## The epicardial halo sign

Dear Editor,

Pericardiocentesis is a life-saving procedure performed in the acute setting under echocardiographic or fluoroscopic guidance<sup>1</sup>. The epicardial halo sign is a radiological finding occasionally seen in individuals with a sizeable pericardial effusion<sup>2</sup>.

A 75-year-old diabetic male with coronary artery disease was transferred to the emergency department due to acute dyspnea. At presentation, he was hemodynamically unstable, with a blood pressure of 75/50 mmHg, heart rate of 107 beats/min, and oxygen saturation of 90 %. Physical examination revealed distention of the jugular veins, clear lungs, and diminished heart sounds. Electrocardiography recorded alternating amplitude of the QRS complex (Figure 1A). Echocardiography displayed a sizeable circumferential pericardial effusion, confirming the diagnosis of cardiac tamponade.

The patient was transferred to the catheterization laboratory where fluoroscopy in the anteroposterior (AP) view illustrated a radiopaque area between the outer borders of the cardiac shadow and the pericardial space, demarcating the pericardial effusion, described as epicardial halo sign<sup>2</sup> (Figure 1B). Under local anesthesia, the patient underwent fluoroscopy-guided pericardiocentesis through the subxiphoid approach with an 8Fr pigtail catheter insertion over a guidewire (Figure 1B), using the epicardial halo sign as a marker. Copious exudative fluid drainage (1 L) resulted in prompt clinical improvement. Fluid tests were normal, including immunology, serology, cultures, and cytology. Consequently, the pericardial effusion was considered idiopathic. He was discharged on methylprednisolone and colchicine. At the one-month follow-up, he was asymptomatic with normalized echocardiography.

The epicardial halo sign demarcates the borders of the heart shadow<sup>2,3</sup>. It may be seen in the large pericardial effusion and is a manifestation of the difference in X-ray absorption between blood in the cardiac chambers and fluid in the pericardial space<sup>2</sup>. The higher the fluid's radiographic density, the more prominent the radiopaque band demarcating the effusion and the cardiac silhouette. The epicardial halo depicts the heart's outer surface and is used as a border that the aspiration needle tip should not cross during pericardiocentesis<sup>2</sup>. It is highly sensitive for detecting pericardial effusion and correlates better in the AP projection with the effusion size without interfering with body mass<sup>2</sup>. Therefore, it is a valuable adjunct to echocardiography and fluoroscopy for careful guidance during pericardiocentesis.

**Keywords:** Epicardial halo sign, pericardial effusion, tamponade, pericardiocentesis

### Conflict of interest

None.

### References

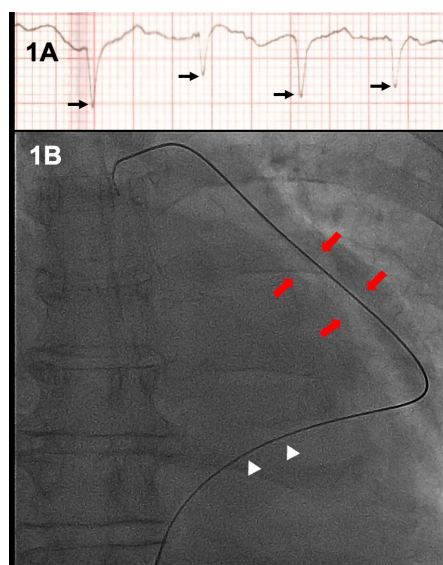
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Triantafyllis AS<sup>1,2</sup>, Sfantou D<sup>1</sup>, Ikonomidis I<sup>2</sup>

<sup>1</sup>Department of Cardiology, Asklepeion General Hospital

<sup>2</sup>Department of Cardiology, Attikon University Hospital  
Athens, Greece

**Corresponding author:** Andreas S Triantafyllis, MD, PhD, Department of Cardiology, Asklepeion General Hospital, 1 Leoforos Vasileos Pavlou, 16673, Voula, Athens, Greece, e-mail: andreas.triantafyllis@gmail.com, andtridoc@yahoo.gr



**Figure 1:** Electrocardiogram showing QRS alternans (Figure-1A, arrows). Fluoroscopy delineating the pericardial effusion as a radiopaque area between the outer borders of the cardiac shadow and the pericardial space, known as epicardial halo sign (Figure-1B, arrows). Guidewire (Figure-1B, arrowheads).