RESEARCH ARTICLE

EWART’S SIGN A CLINICO-RADIOLOGICAL REVIEW.

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Introduction:
Suspicion of the presence of pericardial effusion could be from the history, physical examination, electrocardiogram (ECG), and chest x-ray.

However, the clinical examination remains the first tool in the diagnosis of pericardial effusion.

In Dr. William Ewart’s seminal paper “Practical Aids in the Diagnosis of Pericardial Effusion in connection with the questions as to the Surgical treatment” in 1896, he describes the clinical signs associated with pericardial effusion which include a triangular area at the tip of the left scapula which shows breath sounds and egophony associated with dullness.

We report a case of pericardial effusion which present the clinical and radiological basis for Ewart’s sign.

Case Presentation:
We present an 86 years old female who is known to suffer from Type II diabetes mellitus on Insulin mixtard, she also takes Perindopril 5 mg for hypertension. She presented with one-month history of breathlessness and cough associated with night sweats. No past medical history of TB or contact with TB. When examined in the ER she was found tachypnic (RR22) with pulse rate 85, small volume and BP 130/80 (nonpulsusparadoxus) and saturation of 92% in room air. Her chest examination showed: dullness left base posteriorly below the left scapula with Bronchial breathing (Ewart’s Sign).
The Posterior Pericardial Patch of dullness and the posterior pericardial patch of tubular breathing and aegophony.

**Fig 1:** CXR at presentation showing enlarged cardiac silhouette.

**Fig 2:** CXR post Pericardiocentesis showing segmental atelectasis.
Cardiovascular System:
Muffled heart sound and JVP raised. No Lymph nodes were felt and her abdominal examination was unremarkable. TST: no reaction to 2TU PPD (Mantoux test). Bloods including TSH and autoimmune screen: TSH Normal, Urea 9.7 with Normal Creatinine and normal liver function test, CBC: WBC 8.1 Hb 12.7 and Platelets 215. ESR 61. Echocardiogram: massive pericardial effusion EF 50% RVSP 45 and thickened pericardium. Echo-free space 2.5 cm posterior and lateral. RV diastolic collapse. ECG showed small voltage QRS complexes with no acute ischemic changes. Chest x-ray (Fig 1&2) showed increased cardiac shadow. CT chest with contrast (Fig 3) showed pericardial effusion with mediastinal lymph nodes. Sputum analysis was negative for AFB.

Pericardiocentesis under echo guidance showed straw colored fluid. There were no malignant cells and it was lymphocyte rich fluid. The AFB stain, TB culture and TB PCR were negative. Pericardial window was done and the biopsy showed chronic inflammation. No granuloma

The patient was treated with oral prednisolone and Anti-TB medications for 6 months with improvement both radiological and clinical.

Follow up study:
limited study with minimal effusion, follow up CXR shows resolution of the effusion.
### Discussion and Conclusion:

As rightly stated by Ewart and shown in our case there was at compression of the left lower lobe correlating with the clinical Ewart's sign. We found only three references in PubMed using “Ewart’s sign” as a search word besides Dr. Ewart paper. The latest was in 2000 in relation to tuberculous pericardial effusion. It has been referred to as Bamberger-Pins. Ewart’s sign in the European Cardiology Society guidelines on pericardial diseases 2004. Despite the availability of echocardiography, clinical examination remains the first tool in the diagnosis of pericardial effusion.

### References: