Journal Homepage: -www.journalijar.com
INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)
Article DOI:10.21474/IJAR01/3357
DOI URL: http://dx.doi.org/10.21474/IJAR01/3357

RESEARCH ARTICLE

EWART'S SIGN A CLINICO-RADIOLOGICAL REVIEW.

Yazeed Bahamdan[1], Abdulrahman Al-Thukair[1], Hind Al Saif[2] and Abdelhaleem Bella[3].

1. Medical Students, Imam Abdulrahman Bin Faisal University.
2. King Fahad Hospital of the University,Imam Abdulrahman Bin Faisal University.
3. RCSI Medical University of Bahrain.

Manuscript Info

Manuscript History

Received: 28 December 2016
Final Accepted: 24 January 2017
Published: February 2017

Abstract

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.

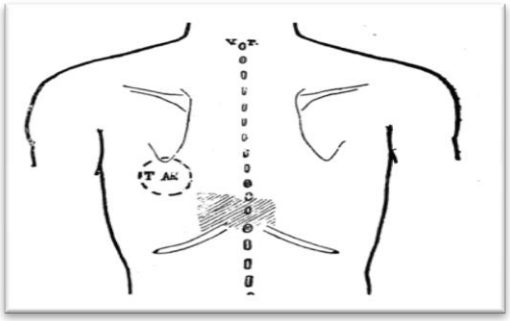
In Dr. William Ewart's seminal paper "Practical Aids in the Diagnosis of Pericardial Effusion in connection with the questions as to the Surgical treatment" in 1896, he describes the clinical signs associated with pericardial effusion which includetriangular area at the tip of the left scapula which 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).

Corresponding Author:-Yazeed Bahamdan.
Address:-Medical Students, University of Dammam.



The Posterior Pericardial Patch of dullness and the posterior pericardial patch of tubular breathing and aegophony.

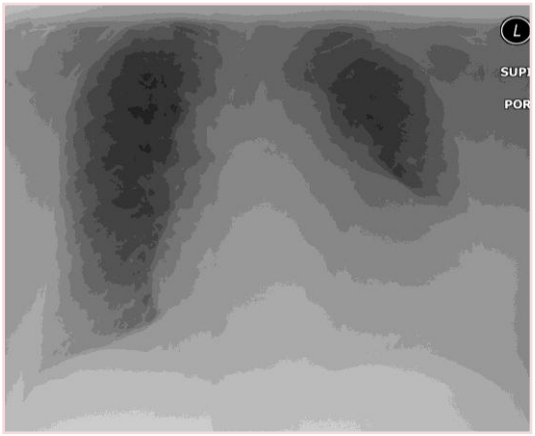


Fig 1:- CXR at presentation showing enlarged cardiac silhouette.

Fig 2:- CXR post Pericardiocentesisshowing segmental atelectasis.

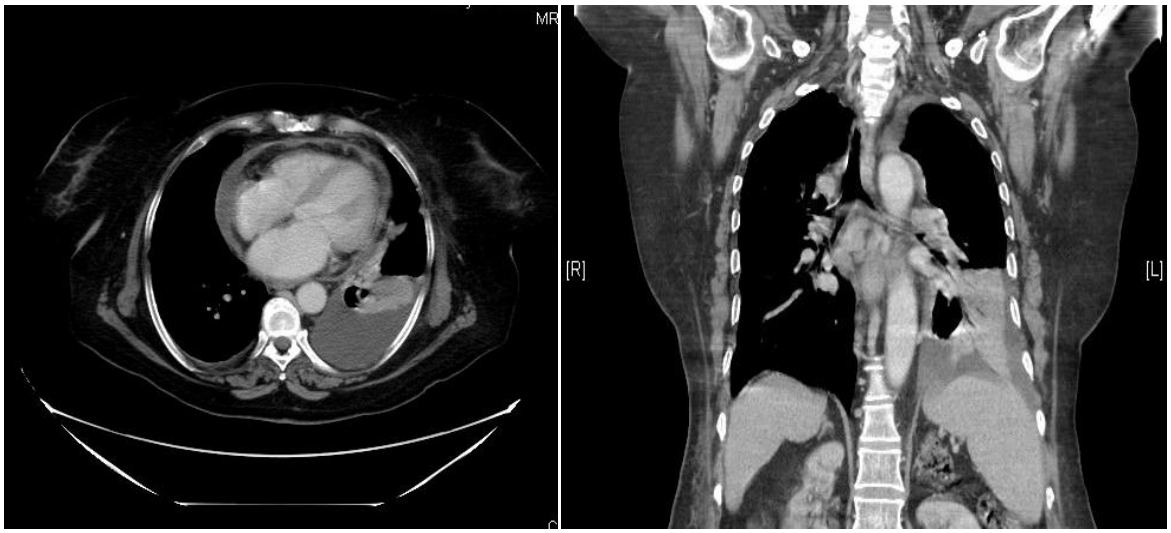


Fig 3:- CT chest with contrast showing the pericardial effusion , segmental atelectasis left lower lobe with effusion.Note the lymphadenopathy on CT.

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.

Sign Number	Description of the Sign
First Sign	Increased Lateral Cardiac Dullness
Second Sign	Increase in the Absolute Dullness
Third Sign	Liver Depression
Fourth Sign	Dr Rotch's sign : dullness in the right 5th Intercartilagenous space
Fifth sign	The lower angle of pericardial dullness points to the right
Sixth sign	The left lower angle of dullness. The relation of the apex beat to this angle
Seventh Sign	The first rib sign "feel with the finger the upper edge of the first rib as far as its sternal attachment".
Eighth Sign	**The Posterior Pericardial Patch of dullness**.
Ninth Sign	Tubular breathing below the right Mamma.
Tenth Sign	**The posterior pericardial patch of tubular breathing and agophony.**
Eleventh Sign	The secondary pleural effusions and the pulse in pericardial Effusion.
Twelfths Sign	The large and slapping pulse of pericardial effusion.

Discussion andConclusion: -

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[1-3] beside Dr.Ewart paper[4]. The latest was in 2000 in relation to tuberculous pericardial effusion. It has been referred to as Bambereger- Pins. Ewart'ssign 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:-

1. Smedema JP, Katjitae I, Reuter H, Doubell AF. Ewart's sign in tuberculous pericarditis. S Afr Med J. Nov 2000;90(11):1115.
2. Burch GE. Of Ewart's sign and myocardial infarction. Am Heart J. Dec 1977;94(6):809.
3. Steinberg I. Pericarditis with effusion: new observations, with a note on Ewart's sign. Ann Intern Med. Aug 1958;49(2):428-437.
4. Ewart W. Practical Aids in the Diagnosis of Pericardial Effusion in Connection to the question as to Surgical Treatment. Br Med J. Mar 21 1896'1(1838):717-721.