

Clinical Image

Sinusoid sign

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A 62 years old patient, with the past history of unstable angina, presented with the history of shortness of breath, fever and purulent sputum of 2 days duration. He had the history of taking oral Amoxicillin 1 month back for gingivitis. On examination, patient had the temperature of 100.5°F with bilateral crepitations and decreased air entry in the bilateral bases. White cell count was 12800 with 90% polymorphs. Chest X ray revealed bilateral diffuse infiltrates with blunting of bilateral costo-phrenic angles. He required supplemental oxygen with face mask to maintain adequate oxygenation. Bedside echocardiography revealed normal cardiac contractility with no regional wall motion abnormalities. Bedside chest ultrasonography using low frequency transducer revealed anechoic collection above the diaphragm, surrounding the consolidated lungs with dynamic air bronchogram (Fig. 1). Sonography of the chest using high frequency linear probe with M-mode revealed sinusoid sign, suggestive of pleural effusion (Fig. 2). Diagnostic pleural aspiration was safely performed under ultrasonographic guidance, which revealed exudative effusion. Patient was started on Piperacillin-tazobactam combination antibiotics. He improved during the subsequent 5 days of hospital stay, following which he was discharged home.

Chest ultrasonography performs better than chest radiograph and is comparable to chest CT for diagnosis of pleural effusion.¹ During thoracic sonography, pleural effusion is classically seen as anechoic region in the dependent part of the thoracic cavity (Fig 1), which can be an inconsistent finding.² The shifting of lung line towards the chest wall during each inspiration, as observed in M-mode sonography (Fig 2), is called the sinusoid sign. This sign has the sensitivity of 92% and specificity of 93% for the diagnosis of pleural effusion.³ Ultrasound guidance for thoracentesis enhances safety and decreases the risk of pneumothorax with an odds ratio of 0.3.⁴ The existing best practice guidelines recommend routine use of ultrasonography for thoracentesis.⁵

Use of bedside thoracic sonography can aid in accurate diagnosis and safe drainage of pleural effusion.

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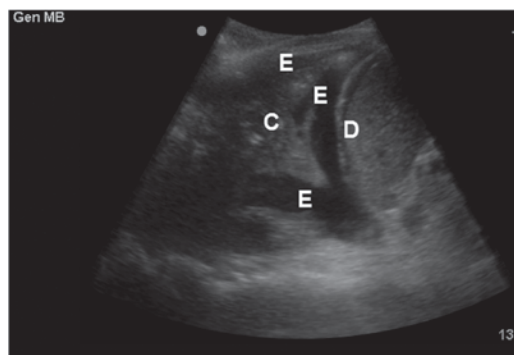


Fig. 1: Thoracic ultrasound showing anechoic pleural effusion (E) about the diaphragm (D) and surrounding the consolidated lung (C).

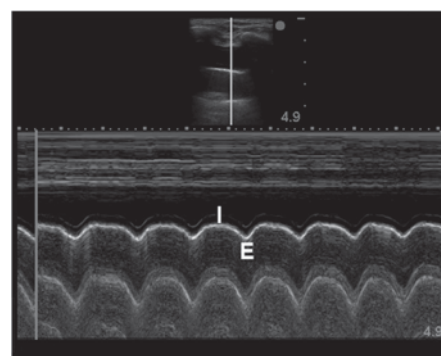


Fig. 2. Thoracic sonography in M-mode showing sinusoid sign with the lung line moving towards the chest wall during each inspiration (I) and moving away from chest wall during each expiration (E).

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