Title
Bleb Point: Mimicker of Pneumothorax in Bullous Lung Disease

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In patients presenting with severe dyspnea, several diagnostic challenges arise in distinguishing the diagnosis of pneumothorax versus several other pulmonary etiologies like bullous lung disease, pneumonia, interstitial lung disease, and acute respiratory distress syndrome. Distinguishing between large pulmonary bullae and pneumothorax is of the utmost importance, as the acute management is very different. While multiple imaging modalities are available, plain radiographs may be inadequate to make the diagnosis and other advanced imaging may be difficult to obtain. Ultrasound has a very high specificity for pneumothorax. We present a case where a large pulmonary bleb mimics the lung point and therefore inaccurately suggests pneumothorax. [West J Emerg Med. 2015;16(3):447–449.]
radiograph demonstrated large bullous emphysema on the right lung with complete obliteration of normal lung and possible pneumothorax. The patient was unable to lie flat for computed tomography (CT), so bedside ultrasound (Figure 1 and Video) was subsequently performed using a high frequency linear transducer, demonstrating normal lung sliding at the left apex. No lung sliding was noted at the right apex and lung point was also noted. Differential diagnoses included pneumothorax, worsening bullous emphysema, and pneumonia.

The patient rapidly improved with oxygen, nebulized albuterol and ipratropium, intravenous methylprednisolone, and antibiotics, so tube thoracostomy was held. He became stable enough for CT (Figure 2), which demonstrated complete collapse of the right lung secondary to extensive progressive bullous emphysema with extensive bilateral bullae and bronchiectasis. There were air-fluid levels at the right lung base concerning for superinfection vs. secretions. No pneumothorax was appreciated. The patient was admitted to the respiratory stepdown unit, where steroids and antibiotics were continued, and the patient was subsequently transferred to a specialty tertiary hospital for lung transplant.

DISCUSSION

Distinguishing pneumothorax from bullous emphysema is a difficult but important distinction in management of the severely dyspneic patient. Patients with bullous emphysema, especially large bullae are at higher risk for pneumothorax. Thus, risk factors and often clinical exam are less than helpful. Frequently chest radiograph is unable to differentiate bullous emphysema from pneumothorax, but chest CT, the gold standard, is often difficult for patients to tolerate. A physician may also feel that the patient is not stable enough to go to radiology for a CT. This creates a dilemma as to what diagnostic test will aid in the accurate assessment of these acutely ill patients.

Lung ultrasound has been proven to be valuable in assessing pneumothorax in the unstable patient, especially compared to portable chest radiograph. While there has been some argument about the sonographic appearance of bullous emphysema, anecdotal reports and case series have determined that ultrasound is still able to differentiate bullous emphysema from pneumothoraces. Presence of lung sliding effectively rules out pneumothorax despite concomitant lung disease while presence of a lung point was previously thought to effectively rule in pneumothorax.

However, none of those cases involved discovery of a bleb mimicking a lung point, or “bleb point.” We postulate that because of the severity of bullous emphysema that the amount of healthy lung tissue was minimal and that the visceral pleura was so thin at the junction of parietal pleura that M-Mode ultrasound was unable to detect any sliding. Further study is required to examine the utility of these findings in larger populations.

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Video. Ultrasound demonstrating normal lung sliding in right apex and bleb point.

REFERENCES