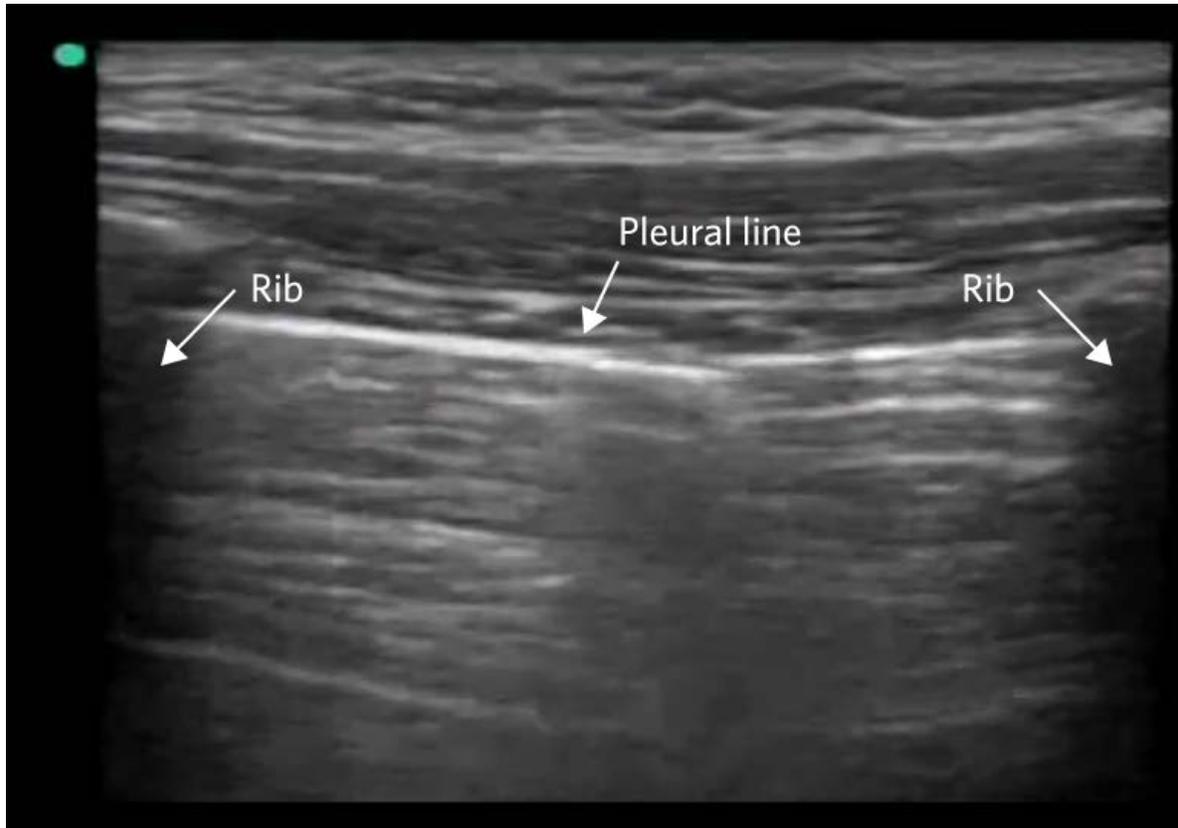




ULTRASOUND OF THE LUNG FOR PNEUMOTHORAX: The How-To Guide

Updated : Aug 25, 2017



How to do it:

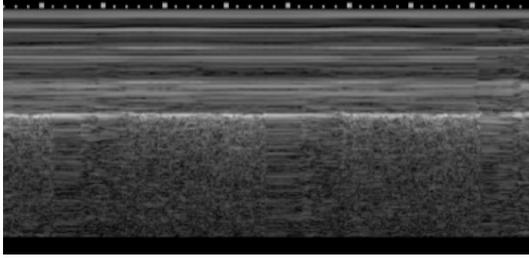
1. Select low frequency (abdominal) probe.
2. Hold probe with thumb and 2 fingers.
3. Position probe on most superior aspect of chest (because that's where the pneumo will be) in longitudinal orientation, marker towards patient's head.
4. Find the area of interest: two rib shadows and the bright white pleural line between them.
5. Minimize the depth to the lowest possible setting for your machine.
6. Observe for the presence of lung sliding - yes or no. Lung sliding means no pneumothorax. Absence of sliding means pneumothorax is present.
7. Also scan the interspaces directly above and below the most superior interspace.

8. If pneumothorax is identified, slide your probe laterally to identify the lung point sign, which demarcates the limit of the pneumothorax. The lung point is the spot where you see the transition point between sliding lung and no sliding. This sign is pathognomonic for the presence of pneumothorax.

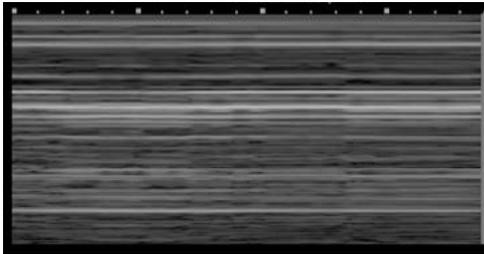
How to do it better:

If you want to get a closer look, **try switching to the linear probe**. Confirm your impression of lung sliding by looking for comet tails. Comet tails are a linear bright vertical lines seen in the lung tissue, and are a helpful artifact, arising only in the absence of a pneumothorax.

Use M mode. A normal lung in M mode will show straight lines in the near field, and a grainy appearance in the far field: the seashore sign.



A pneumothorax will show only a series of lines: the bar code sign.



You can use the lung point sign to help you estimate the size of the pneumothorax. The more lateral it is, the larger the pneumothorax. In general, the pneumothorax needs urgent decompression if the lung point is in the mid-axillary line.

How to do it safely:

On occasion lung sliding can be subtle. Look carefully and be 100% certain of the presence or absence of sliding before calling it.

Lack of lung sliding can be seen in other conditions as well – essentially in any condition that causes scarring of the visceral and parietal pleura, such as pneumonic adhesions, surgical scarring or pleurodesis. *In this case you might see no sliding, but comet tails.* Keep the clinical context in mind, and if you have doubt, get confirmatory tests.

How to use this in practice:

This is a very quick and easy scan to do in any patient with respiratory distress or chest wall trauma. Incorporate it early into your evaluation of these patients.

It can also be helpful in the more stable patient with respiratory distress, especially in the presence of a small pneumothorax, where it is more accurate than chest x ray. It can confirm your clinical impression of pneumothorax, even in the presence of a normal radiograph.

You can use the lung point sign to follow your patient's recovery from pneumothorax over time. The lung point location will demonstrate when the pneumothorax is diminishing.

Created by the UBC CPD Hands-On Ultrasound Education (HOUSE) Program (house.ubccpd.ca)

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