

Identification of Chest Palpation and Thoracoabdominal Dyssynchrony through Physical Examination

Van Hueseok*

Department of Pulmonary Medicine, Mada Walabu University, Robe, Ethiopia

Short Communication

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***For Correspondence:**

Dr. Van Hueseok, Department of Pulmonary Medicine, Mada Walabu University, Robe, Ethiopia

E-mail: hueseok@gmail.com

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ABOUT THE STUDY

The anterior surface of the chest is palpated by placing the palm of both arms flat on the chest wall with the thumbs touching on the midline with the thumbs touching on the midline while the patient is taking deep breaths. The hands are placed first at the angle of Louis, then on the fourth or fifth intercostal space, and finally at the lower costal margin. The posterior chest surface can also be palpated with the patient sitting, by putting the thumbs on the paravertebral lines and the other fingers each on a different intercostal space. The expansion of the apices can be appreciated by putting the palm of the hands flat on the supraclavicular fossa. The position of the trachea can be determined by placing the thumb and index finger on the lateral aspects of the trachea over the jugular notch. Lateral deviation of the trachea can be caused by mediastinal shift ^[1].

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During the anterior palpation attention should be paid to the cardiac impulse, usually palpable at the anterior axillary line, at fourth or fifth intercostal space. Although it is not palpable in a large proportion of normal people, lack a palpable apex beat may be a sign of pulmonary emphysema. Palpation of the thorax also is important for the detection of enlarged axillary or supraclavicular lymph nodes. It can also disclose the presence of subcutaneous emphysema. Most of the alteration of respiration dynamic suspected at inspection can be confirmed by palpation. Attention should be paid to the amplitude and symmetry of the movements and to the presence of retraction of the costal margin at the end of inspiration, that indicates severe air trapping. Palpation is also of aid in detecting contractions of axillary respiratory muscles by putting the hand on sternocleidomastoid or on the abdominal wall and to evaluate the presence of thoracoabdominal dyssynchrony, by putting the hand in the midline on the middle chest and the other on the upper abdomen. During the phase of the physical examination an end inspiratory retraction of the costal margin can be appreciated, indicating pulmonary hyperinflation [2].

While the subject is speaking the lung parenchyma and the chest wall normally transmit a palpable vibration known as tactile fremitus. It should be assessed by placing the ulnar aspect of both hands firmly on the posterior chest wall while the patient says the word ninety nine. For comparison both sides should be palpated simultaneously and symmetrically using one hand quick alternating between the two sides. The vibration is best appreciated in the region close to the tracheal bifurcation and in people with low pitched voice. The tactile fremitus is reduced when an obstruction of the airways block its transmission to the chest wall or lung elasticity is reduced [3]. Tactile fremitus is also reduced or absent in the area over a pleural effusion but the lung parenchyma above the superior margin of the effusion may be compressed and hence transmits a reinforced vibration. Another cause of reduction or absence of tactile fremitus is pneumothorax. Tactile fremitus is better transmitted by consolidated lung parenchyma provided that the bronchi are patent and it is also reinforced in the presence of bronchiectasis or lung excavations. This is how the physical examination can be performed to identify the condition of upper thoracic region [4].

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