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Position-Dependent Pleural Friction Rub

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The art of physical examination is often forgotten by clinicians in their haste to depend on laboratory tests. This paper described a helpful way to diagnose pleurisy in someone who should have it according to the history. Auscultation of the chest in the supine and lateral decubitus positions will occasionally facilitate the detection of a pleural friction rub when conventional examinations may not do so. Two patients are described in whom this method was used.

SINCE we live in an age in which increasing reliance is paid to ever more refined laboratory and radiological techniques, it may seem anachronistic to describe a simple method in bedside diagnosis. However, the detection of pleural inflammation from whatever cause may initially depend upon the history obtained from the patient and the findings on physical examination. It is well known that a pleural friction rub, the hallmark of pleuritis, may be heard in the absence of laboratory or radiological abnormalities. Thus, hearing a pleural friction rub may be critically important in the diagnosis of conditions involving the pleura primarily or as an extension of lung processes. Most physicians examine the patient's chest only in the sitting position, or in the sitting and supine positions. Auscultation of the chest in the right and left lateral decubitus positions, with the patient breathing deeply, will occasionally reveal the presence of a pleural friction rub not heard in the sitting or supine positions. This simple technique has been neglected in classic teaching.

The claim that a pericardial friction rub may be heard only in one position, namely, the sitting position, with the patient leaning forward, is stressed in most textbooks of physical diagnosis.

It is also emphasized in most treatises on physical diagnosis that application of
pressure with the diaphragm of the stethoscope over the affected area may facilitate the detection of a pleural friction rub. However, the fact that a pleural friction rub may be heard only in the right or left lateral decubitus position is not mentioned in the standard works on physical diagnosis, medicine, or chest disease. Cabot did point out that if the patient with pleuritic pain is made to lie on the affected side for a short time, a friction rub previously not audible may be heard when he sits up and breathes deeply. However, Cabot did not mention the value of auscultation of the chest with the patient in the supine or lateral decubitus positions.

The following two case reports illustrate the occasional importance of position of the patient in the detection of a pleural friction rub.

Case Reports

Case 1. A forty-eight-year-old man was admitted to Henry Ford Hospital on August 14, 1966. He complained of sharp and dull pain, not related to respiration, in the left anterior chest during the preceding 24 hours. The pain occasionally radiated to the neck and to the left arm and hand. Initially, it was associated with shortness of breath and sweating. The patient had not noted chills, fever or cough.

Physical examination revealed a well-nourished man in moderate distress from chest pain. Blood pressure was 140 systolic, and 80 diastolic. Temperature and pulse were normal. Respiration rates were 24 per minute and shallow. No significant abnormalities were noted on examination of the chest and lungs, and the rest of the examination was unremarkable.

Urinalysis, complete blood count, urea nitrogen and serum glutamic oxalacetic transaminase (SGOT) and lactic dehydrogenase (LDH) determinations and electrocardiograms were normal. Sputum cultures revealed normal flora. Smears and cultures of the sputum for acid fast bacilli were negative. Radiologic films of the chest showed an infiltrate consisting of nodular and linear densities in the right lower lobe, the opposite side from which the friction rub was later heard.

The patient continued to have left-sided chest pain after admission, particularly with deep breathing. Two days after admission he stated that his pain was particularly severe when he lay on his left side. He noted practically no pain after he shifted from his left side to some other position. Fine rales were occasionally noted in both bases, but no other abnormality was detected. On the fourth hospital day, the patient was examined in the sitting, supine and both right and left lateral decubitus positions. A prominent pleural friction rub, confirmed by several observers, was heard over the left lateral thorax when he was in the left lateral decubitus position. The friction rub could not be heard in other positions despite the fact that increased pressure was applied to the patient's chest with the diaphragm of the stethoscope.

The patient was given tetracycline. Over the next three days his condition improved, the pleural friction rub disappeared, and the pulmonary infiltrate cleared. Cold agglutinin titer, five days after admission, was 1:32, and Eaton Agent complement fixation titer, six days after admission, was 1:32. Convalescent sera were not tested. A diagnosis of pneumonitis and pleuritis of unknown cause was made.

Case 2. A forty-six-year-old man was admitted to Henry Ford Hospital on September 23, 1966. He had noted generalized myalgia for seven days. For five days he had noted recurrent vomiting, a dull frontal headache, shaking chills and fever. He complained of having a cough which produced three to four teaspoons of thick, yellow sputum daily, for four days. He had had visual hallucinations for three days.

Physical examination revealed a well-nourished, well-oriented man in no acute distress. The blood pressure was 130 systolic and 90 diastolic. The temperature was 101.8°F, the pulse 90 per minute and the respirations 24 per minute. There was moderate inflammation of the pharynx. Examination of the chest revealed normal expansion. Increased tactile fremitus and dullness to percussion were detected at the left base, posteriorly. Coarse inspiratory rales, bronchial breath sounds, and whispering pectoriloquy were heard over the same area. A friction rub was confirmed by several examiners over the left posterolateral lung base, while the patient was in the supine and left lateral decubitus positions. It was absent when the patient was in the sitting position, despite the application of increased pressure with the diaphragm of the stethoscope over
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the affected area. No other significant abnormalities were noted on physical examination.

Hemoglobin was 14.5 grams; white cell count was 24,900, with 78% neutrophils. Sputum cultures revealed normal flora. Radiologic films of the chest revealed a patchy infiltrate in the left base posteriorly.

Following diagnosis of left lower lobe pneumonia with toxic psychosis, the patient was treated with cephaloridine, 0.5 gm, intramuscularly, every 12 hours for seven days. He made an uneventful recovery with resolution of the pneumonia and prompt disappearance of his psychotic symptoms.

Discussion

The first case report is of interest in that the patient's pleuritic symptoms correlated with the physical findings. He noted pain in his left lateral chest with breathing when he was in the left lateral decubitus position, and he obtained relief by shifting to a different position. A pleural friction rub was heard only when the patient was in the left lateral decubitus position. The mechanism of these findings is not readily apparent. A possible explanation is that when the patient was on his left side, the weight of his lung brought the visceral and perietal pleura into closer and more forceful apposition. The pressure exerted externally on the chest wall in this position might also have brought the pleural surfaces closer together.

In this position, breathing might cause the inflamed and roughened pleural surfaces to rub together and cause pleuritic pain.

It is suggested that examination of the chest include auscultation in the supine and lateral decubitus positions in all patients suspected of having pleurisy, but in whom conventional examination does not reveal a pleural friction rub. This simple method will occasionally facilitate the detection of a pleural friction rub which otherwise would not be appreciated.

References

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