Reprinted from the December, 1950 Issue of
*Annals of Western Medicine and Surgery*

# What Can Be Realized From Inspection of The Chest

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ONE of the most obvious, most simple, most valuable, and at the same time most neglected procedures in the examination of the chest is inspection. By inspection the examiner obtains an idea of the patient and many of his characteristics. He may note the presence of deformities in structure and departures from the normal in posture. He may note the condition of the skin and hair, which often portray signs of endocrine disturbances and aging. In fact, he gains a fair idea of the patient as an individual, his physical stamina, and his mental alertness.

Aside from these general observations which are of immeasurable importance in our estimating a patient's reaction toward disease, we may make observations which may suggest the presence of disease of specific organs within the chest and possibly indicate their nature. Thus we can often see indications of disease of the heart, the lungs and the pleura. Furthermore, we may be fairly accurate in our estimate of the location and nature of the pathology.

In case of the heart one may note air hunger, a cyanosis, an edema, and see the beat of the heart when near the surface.

In case of the lung one may note in case of acute infiltrations that the muscles of the shoulder girdle which receive innervation from the mid-cervical spinal nerve stand out in reflex spasm. So does the crus and central tendon of the diaphragm which, though not visible, have a like innervation and like reflex stimulation. In chronic lesions the same muscles and the subcutaneous tissue which receive their innervation from the cervical segments degenerate. This means a degeneration not only of the muscles but the skin and subcutaneous tissue above the second rib anteriorly and the spine of the scapula posteriorly.

If the pleura is inflamed, either with or without effusion, this produces spasm of the overlying intercostal muscles. If the lesion becomes chronic, then these muscles and other intercostal tissues and the overlying skin and subcutaneous tissues supplied by the same intercostal nerves degenerate and remain so. There seems to be no restoration to the normal. If effusion takes place, it can often be recognized by the bulging of the intercostal spaces. If it heals with adhesions, this is indicated by degeneration of the overlying soft tissues and especially when near the base, by retraction of the intercostal spaces on inspiration.

One effect of the spasm of the apical muscles and the diaphragm in infiltrations in the lung and of the intercostals in pleurisy is to limit motion of the hemithorax involved. Furthermore, movement is limited by the physical presence of the inflammations themselves. This is true in the case of the lung and also the pleura, whether an effusion or simple inflammation.

These changes in the muscles and skin and subcutaneous tissues are important because they are significant of acute and chronic pathology. Wherever acute pathology exists and wherever chronic changes remain there will be change in the respiratory mechanism to accommodate to those change, and inspection, palpation, percussion and auscultation will reveal evidence of disease.

This is especially important to understand now since we know that the respiratory murmur is produced by vibrations arising in the entire respiratory mechanism. We are not listening to the air rushing down through the glottis and impinging on and dilating the air cells, as suggested by Laennec and Beau, but to the entire respiratory mechanism, every part of it which can give rise to sound vibrations. Thus auscultation becomes an estimate of the manner in which the respiratory mechanism is interfered with and of the condition of the structures which transmit the sounds. Hence all of the procedures used in physical examination — inspection, palpation, percussion and auscultation — are intimately associated and should be used in their entirety in examination of the chest.

Inspection should always be supported by palpation, for the two together are more accurate than one measure used alone. Spasm and degeneration are readily confirmed by the touch. Furthermore, the muscles are more tense and the individual bundles respond when tapped lightly with an increased and when degenerated with a decreased rebound. The degenerated tissues show not only as a flabbiness but as an actual wasting. The skin and subcutaneous tissue when degenerated are thinner, as may be determined when one presses them against the ribs or muscles, and when one picks them up and rolls them between the thumb and fingers.

Inspection and palpation combined will enable one to determine slightly lessened movement of the thoracic cage when doubt might exist on inspection only.

With such possibilities of gaining information on

Read at the Fifty-First Annual Meeting of the American Therapeutic Society, Boston, April 15, 1950.

inspection of the chest every physician should cultivate his powers of observation. But it is not only the definite information such as described above that is obtainable, but what one may see in the way of change in motion of the chest wall and in spasm of the muscles and degeneration of the muscles, skin and subcutaneous tissue directs the examiner in his further examination with percussion and auscultation.

Not only may acute and chronic inflammatory infiltrations be suspected by the reflexes above mentioned but increased pulmonary tension such as are present in pleural effusion, pneumothorax (spontaneous or induced), and emphysema are frequently evident to the eye.

Heretofore physical examination has depended most on percussion and auscultation, but now we can see that inspection and palpation indicate where to percuss and auscultate, and furthermore suggest what these procedures may be expected to reveal.

We now understand why in so many instances auscultation has failed to furnish the data which we were expecting. We were thinking only of the air current, bronchi and air cells. Infiltrations in the lung of considerable magnitude when scattered may interfere only moderately with the respiratory mechanism, and so produce minimal changes in the respiratory murmur. The chief element in the murmur in a case of chest pathology may be in one case the pulmonary tissue and air column, in another pathology within the pleura, in another the contraction of the musculature, and in still another the movements in the bony cage.

The changes in the respiratory mechanism usually lessen and prolong the movement. This gives an increase in the length of the murmur, usually in both phases. It may decrease its intensity, but conditions may also be present which will cause the murmur to be transmitted with greater intensity. Dense scar and superficial dense walled cavities produce greater intensity of transmission. When such chronic conditions exist inspection will nearly always indicate that they are present.

Inspection, particularly when reinforced by palpation, will add greatly to the intelligent examination of the tuberculous patient.

The difficulty in attempting to employ methods of physical examination, such as inspection and palpation, for ascertaining specific data in cases of diseases of the lungs and pleura, is that it is something that the best examiners in the past have failed to appreciate. In other words, it is contrary to the accepted teachings. Furthermore, physical diagnosis has been difficult, and it has almost been supplanted today by the x-ray and the laboratory. But the true clinician must study the patient and, if one will learn to look and feel, he will increase his diagnostic acumen and furthermore will be able to auscultate with increased satisfaction.

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