Lectures

ON

ORTHOPÆDIC SURGERY.

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LECTURE VI. ON CURVATURES OF THE SPINE. (Continued.)

Symptoms of Lateral Curvature of the Spine.

It has already been said that lateral curvature may be divided into incipient and confirmed curvature. Incipient curvature exists in the erect position of the body, and it may be removed in the horizontal posture. When, however, the curve becomes permanent, it is shown both by the form of the thorax and in the gait, as well as in the inequality in the height of the shoulders and the hips. The shoulders are no longer on the same plane; one is raised, while the other is depressed. The shoulder on the side of the dorsal convexity is not only unduly raised, but the scapula is rendered abnormally prominent, and its inferior angle is carried outwards and away from the median line of the trunk. But, while this occurs on the convexity, on the opposite side the scapula is depressed; for the ribs are flattened and depressed on the side of the concavity, while they are bowed out on the convexity. The scapula changes its position only as the ribs change in form; being raised and rendered prominent as these are bowed, and depressed as they are depressed.

This change in the form of the ribs is caused by rotation of the vertebræ; and thus it is that rotation of the vertebræ constitutes one of the most important characteristics of spinal curvature. It commences so soon as curvature becomes confirmed. Hence I have dealt with it as a means of classification; namely thus: incipient curvature, or curvature without rotation of vertebræ; and confirmed curvature, or with rotation.

The angles of the ribs are rendered abnormally prominent on the side of the convexity of the curve; and the ribs themselves become more horizontal in direction, and they are separated more widely from each other than in their normal condition. On the side of the concavity, they are rendered more oblique in their direction; and they are depressed, or even they overlap one another.

The anterior surface of the thorax also presents changes consonant with those which are going on elsewhere. All the changes are due to a common cause, and they proceed *pari passu*. On the side of the convexity, the ribs are flattened anteriorly; the mammary gland becomes atrophic, and its nipple presents outwardly; and the shoulder is raised and carried forward; while, on the side of the concavity, the ribs become unduly prominent. Thus the greatest diameter of the thorax is in an oblique direction from behind forwards. These particulars are shown in the following figure (Fig. 18).

One of the earliest symptoms of spinal curvature

is pain below the scapula, on the side of the convexity of the curve. It is not invariable, however. Not unfrequently pain is only felt when distortion becomes excessive. I have frequently observed this to be the case with hereditary distortions.

Fig. 18.

A symptom which always gains much attention is the prominence of one hip. The ilium on the side of the lumbar concavity is raised, and on the same side the loin sinks in so as to produce a striking alteration in the form; while on the opposite side—the lumbar convexity—the transverse processes project backwards through rotation of the vertebræ, and the spinal muscles are in consequence rendered tense.

With regard to the formation of the spinal curves, considerable errors exist. Thus, one author asserts that the lumbar curve is always the primary curve; while another—Pravaz—affirms with equal warmth that the dorsal must necessarily be first formed. Others (and it seems to be a prevailing opinion) teach that a spinal curve may remain single.

I trust, in speaking of the causes of spinal curvature, that I may have shown in such a manner as to carry conviction that the primary curve may be cervical, dorsal, or lumbar; and that equilibrium can only be maintained when compensating curves have been formed. A single curve can only exist in the horizontal position. Nothing more is necessary to produce compensating curves than the erect position, and the muscular force which is necessary to maintain that position.

The curves are constantly undergoing change, representing segments of smaller circles, and becoming more rigid, until the height of the trunk is considerably diminished; and, as a necessary consequence, the obliquity of the hips and shoulders is always

diminishing, through the increase of the spinal curves, until they again assume a horizontal direction. And thus, through great increase of distortion, equilibrium may be restored. This position is shown in Figure 17, Lecture v.

Pathological Anatomy.

It has already been stated that scoliosis is *incipient*, or *without rotation of the vertebræ*; and *confirmed*, or *with rotation*. In the former, the muscles are chiefly affected; but, in the latter, the ligaments and intervertebral cartilages are also much implicated. But, although the muscles, ligaments, intervertebral cartilages, and the vertebræ themselves, are implicated and altered in lateral curvature of the spine, these are not the only structures which are affected, but every viscus in the cavities of the thorax and abdomen is liable to become directly or indirectly involved through this distortion.

The *muscles* on both sides of the spine are for the most part somewhat more pallid than in their healthy condition. In the commencement, they are somewhat tense on the side of the convexity; in a more advanced stage, they become prominent through the projection of the transverse processes; and at length they become atrophic through disuse. In the concavity of the curve, they are for the most part weak and relaxed—wholly inactive; yet I have known them to be so tense in the concavity, that they have formed the greatest impediment to the removal of the spinal curve. It was so in the case from which the following figure was taken (Fig. 19).

Fig. 19.

In this instance, the ordinary treatment for spinal curvature had been found ineffectual; it had been zealously pursued until the patience both of the patient and the surgeon had been exhausted, when

it was determined to divide the erector spinæ. The operation was followed by the happiest result: the spine was speedily straightened, and it remained so. It is exceedingly rare, however, that such an operation is necessary, or that it is expedient to divide any muscular fibres. In France, it has been done to a very great extent, but, as I believe, needlessly, and even to the injury of the patient.

The appearances of the muscles which have been now described differ somewhat, according to the cause of the distortion. This would be anticipated by all, and therefore a general description only would be expected.

The *ligaments* constitute a greater impediment to the removal of spinal curvature than the muscles. If, for the sake of experiment, the muscles be cut through *post mortem*, it will be found that the spinal curve remains unaltered, or nearly so; but distortion may be removed by dividing the ligaments of the spine. These ligaments are shortened in the concavity of the curve, while they are elongated on the side of the convexity.

GREAT DISCOVERY IN HOMŒOPATHY. It is found that if all homœopathic medicines are simultaneously administered, only that one which tallies with the disease will act, and the rest will be inert. The Salt of Life contains a mixture of all homœopathic medicines, so compounded, as to prevent chemical reaction, and it *cures all diseases by presenting all remedies to the system*, leaving the election of the proper one to nature. Patented and prepared by Hahnemann, Williams, and Co.

SUDDEN DEATH IN NEW YORK. The present state of things bearing on the point is truly lamentable. No provision whatever is made for cases of sudden death occurring throughout the city; a person may die of heart-disease on his way home from business, and, if not immediately recognised by the bystanders, is soon lodged in a lonely cell of the nearest station-house. Here the body is allowed to remain for a very short time, as the Captain of the Precinct is unwilling to have the corpse over night in the station-house if it can be avoided. The coroner is immediately summoned by telegraph to hold an inquest on the body of an unknown person just brought in, with as little delay as possible. This is soon accomplished, and in a short time a permit is made out to inter the body at the city's expense. The relations of the deceased begin to feel uneasy at his prolonged absence from home. Diligent inquiries are made, and a strict search instituted in all directions without avail. At length they are amazed to find that he lies buried in a trench, twenty feet below the surface, in the public burying-ground. It makes one shudder to think how suddenly he may be disposed of, should death overtake him on the public highway, unless the fact comes to the notice of his friends. The policeman who takes the body to the station-house is in a hurry to get rid of his disagreeable duty; the captain of the precinct is in a hurry to get the body away from the station-house; the coroner is in a hurry to get through with his part of the business; and the city undertaker is in a hurry to get through before dark. The result of all this is, that the whole affair may be disposed of in a few hours. There is no exaggeration in the picture we have drawn. It is the mode in which the great city of New York disposes of a portion of its dead. We have known instances where two hours had hardly elapsed after the death of a person, before the body was confined and on the road to the public burying-ground. (*American Med. Times.*)