Lectures

ON

ORTHOPÆDIC SURGERY.

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LECTURE III.

ON CURVATURES OF THE SPINE. (Continued.)

Cyphosis.

CYPHOSIS, or posterior curvature of the spine, is a much more frequent affection than the last mentioned form of distortion. Indeed, occurring, as it does, in infancy, in youth, and in old age, it is one of the most common forms of distortion of the spinal column. As well as being applied to posterior curvature, the term cyphosis is also sometimes used to express angular curvature of the spine. But, inasmuch as posterior curvature and caries, or angular curvature, are totally distinct affections, I shall not include them under a common heading; nor shall I further allude to the last-mentioned form of disease at the present time; but shall reserve what I have to say with regard to it for a future occasion.

The causes of posterior curvature of the spine are debility—debility in infancy, in youth, and in old age; rachitis, muscular rheumatism, and partial paralysis. Some occupations are prone to induce a stoop in those who are engaged in them; thus it is, for instance, with watchmakers, engravers, embroiderers, writers, shoemakers, and others, whose occupations require a stooping position. This position, which is at first most irksome, becomes at length easy, and more or less permanent. Those, also, who are subject to asthma, acquire a stoop which becomes diagnostic of the disease.

Debility and rachitis are, in infancy especially, the causes of cyphosis. For the most part, the curve occupies the entire length of the spine, from the occiput to the sacrum; and in infants this is the least severe form of posterior curvature. The normal curves of the spine have not been formed, the muscles of the back not having power to support the trunk; and the head falls forward through muscular debility. This bowed condition of the spine increases, and the dorsal vertebræ become more prominent; for, notwithstanding its weakness, the child is seldom kept lying down. Nutrition is imperfect, and symptoms of rickets begin to show themselves; frequent diarrhœa, perspiration about the head and neck, general wasting, and a blanched condition of the skin. The child is uneasy and fretful. Swelling of the ends of the long bones may now be observed, especially of the carpal extremity of the radius and the tarsal end of the tibia; and the vertebræ will probably now assume a somewhat more conical appearance.

Such children are seldom brought up at the mother's breast, or they are not alone nursed, but at

the same time they are fed with farinaceous food. Some are born rickety; others become so at the breast, when, at the same time, they are fed with farinaceous food; but a child which is healthy at birth, will seldom show symptoms of rickets while it has a sufficiency of milk for nutrition (and without admixture of farinaceous food), and while it is kept warm.

Some of the worst forms of this affection are produced in Russia. The intense cold which prevails during the winter months is the reason, though an insufficient one, for the very imperfect ventilation which is observed in the dwelling-rooms throughout Russia. So badly ventilated and hot are the rooms in St. Petersburg, for the most part, that respiration is not carried on easily. But, in winter, the children are seldom allowed to breathe the outer air. This is a prominent cause of the prevalence of this affection in Russia.

When the child has commenced to walk, a different kind of curve is, for the most part, induced. Here the normal antero-posterior curves have been at least in part developed, that the erect position may be maintained; and consequently, as in the last mentioned form of distortion, the curve which is induced is an exaggeration merely of the normal curve of the region: it occupies especially the middle or the middle and upper portions of the dorsal region. (Fig. 5.)

Fig. 5.

In youth, posterior curvature often occurs during rapid growth, as a consequence of debility. At this period, the lower cervical and the upper dorsal vertebræ are mostly affected. A stoop is not unfrequently acquired during convalescence, and remains permanent in manhood. Those also who are short-sighted, and who do not habitually wear

glasses, are apt to accommodate their figures to their imperfect vision, and thus acquire a stooping position. Posterior curvature is not attended with pain; so that firm pressure may be made along the course of the spine without flinching. And should tenderness be found on examining the spine, destructive disease, or caries, must be suspected. Caries is often so insidious in its advances, that great and irremediable distortion may be already induced before the affection is recognised.

In *old age*, an abnormal increase of the dorsal curve is common, as a result of muscular debility. And when cyphosis has been induced by any occupation, or through disease, as rhenmatism, etc., it is frequently much increased in old age; then equilibrium can no longer be sustained, and a stick becomes necessary for support.

The *pathological appearances* differ according to the age at which cyphosis is observed. In infancy, the muscular system is chiefly affected; while, in the adult, the intervertebral substances become compressed anteriorly; and, in old age, fusion of the bodies of the vertebrae or more partial ossification may be found. Together with these changes, the whole trunk is more or less affected; the chin rests on the sternum; the ribs are approximated, and respiration is laboured, in consequence of their diminished motion.

The *treatment* of this affection in childhood is simply to maintain the horizontal position until debility is so far removed that the child has power to sit or stand erect. Nature is an excellent guide with regard to this change.

When debility is inconsiderable, a splint of leather or gutta percha applied to the back will give sufficient support to enable such children to assume a sitting posture occasionally; but when the head droops, the horizontal posture ought to be maintained; for it cannot be otherwise supported in an infant without the apparatus be so weighty that it is liable to do more harm than good. Such children, then, should be treated for debility in the horizontal position. But it is not necessary here to dwell on the appropriate treatment for debility; this involves rules of diet and hygiene generally. It is a subject which deserves to be treated of at length; for it is one that is greatly neglected, and yet of the utmost importance to children of every class; since it relates to the diet, the air that is breathed, the clothing by day and night, exercise, bathing, etc. I say it is of the utmost importance to children that these questions should be carefully considered with regard to them especially, since they are more sensitive to external agencies than adults; and yet no adult can neglect any of these considerations with impunity. The neglect of this subject involves great loss to the state; the lives of the people being shortened, and their physical power not being wholly developed through inattention to the laws of our well-being.

This is a subject which, as yet, has scarcely been treated of in our language; indeed, it cannot properly be said to have been treated of at all. Nor is it possible here to enter on the treatment of rachitis: this is a subject scarcely less extensive than that last mentioned. Suffice it to say, that the horizontal position, together with a well-regulated animal diet, attention to warmth, ventilation, exercise, bathing, etc., will speedily alter the appearance and

increase the strength of any child suffering from cyphosis.

As the muscular system becomes more developed, gymnastic exercises are useful to increase the power of the extensors of the trunk. According to circumstances, they may be used in the horizontal or the upright position. These exercises will generally remove the tendency to cyphosis, if debility have occurred in youth, and they are employed carefully, and before the curve is permanent. In advocating the employment of gymnastic exercises, however, I consider it an absolute duty, having watched very closely their effects, to warn against their indiscriminate use. I know nothing more pregnant with danger where a spinal curve exists, than the use of muscular exercises: they should never be undertaken without the constant superintendence of a competent person. Frequently, a slight curve is increased by their use, and a temporary curve is rendered permanent.

Hereditary cyphosis will seldom be removed by any means; and it will generally recur if removed. It is, for the most part, conjoined with thoracic disease.

Portable instruments, which remove the weight of the head and shoulders from the spine, may be used with great advantage in most of these distortions; indeed, after childhood, they should, for the most part, be worn when exercise is taken; but modified pressure whilst in the horizontal position and on the spinal couch—pressure which can be regulated at will and perfectly adjusted by means of springs—is the only certain form of instrument which can be employed where the curve is more than of the slightest kind. With a portable instrument, the pressure that can be used is of the most trivial description; but with the couch, treatment commences in earnest. It is a mistake, however, in these cases, to use much pressure. The curve is much more readily removed by moderate, firm pressure on the horizontal couch, than by severe pressure. Pressure which is painful is hurtful; it induces much rather a compensating curve than the removal of the primary curve.

In *old age*, support to the trunk may be so well adjusted that the instrument shall give great comfort to the wearer, and not be apparent, unless the head also be supported. These supports may be worn with the greatest ease, even on horseback. One of the most celebrated men who ever lived was to be seen on horseback, with his chin very close upon the pommel of his saddle, until he wore such a support as is now mentioned, when he was again as upright as in his youth. He continued to use this support so long as he rode; namely, within a very short period of his last illness.

PRESENTATION OF ADDRESSES TO DR. EDMUNDSON. A few months since, Dr. Edmundson of Carrick on Suir was appointed by the Lord Lieutenant to the position of Resident Superintendent of the Auxilliary Lunatic Asylum at Clonmel. His departure from Carrick seems to have called forth universal regrets. An address was prepared on behalf of the town, and signed by the magistracy, gentry, and townspeople generally. Accompanying this complimentary expression of opinion, was a costly evening service of plate, and a valuable skeleton clock. The constabulary body of Carrick, also presented Dr. Edmundson, their kind and attentive medical officer, with a third address, accompanied by a handsome photographic album. (*Clonmel Chronicle*.)