Lectures

ON

ORTHOPÆDIC SURGERY.

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

Treatment.

Constitutional Treatment. Those in whom lateral curvature is observed are, for the most part, feeble from birth; or general debility has been developed; or there is an hereditary tendency to spinal curvature. In all who enter into this class, and it is a very large class, there is either inherited or acquired weakness. It is required to give strength of body, together with a straight spine.

Doubtless, much may be done with this view; the digestive powers may be strengthened, the circulating fluids may be enriched, the respiratory organs may be placed under more healthy influences, than, for the most part, obtain in cases of this description.

Instead of hot and ill-ventilated rooms, the admission of pure air is to be encouraged. Exercise in the open air, sufficient for health and without fatigue, is essential to the re-establishment of health; and if exercise on foot is too exhausting, then it must be taken on horseback or in a carriage. To breathe the free air is not simply a luxury in these cases; but it is absolutely necessary for the prolongation of life and for the restoration of health.

It is of small advantage to remove disease if you kill your patient in the process. And yet there are those who, recommending the recumbent position, together with the use of instruments, to be observed unremittingly for years perhaps, do all in their power to impair digestion and every other function of the body to the utmost. In some affections, it is necessary that a recumbent posture shall be observed; but as it is a necessity, and the least of two evils, we must accept it. It is not so in lateral curvature of the spine.

It is of the utmost importance to consider the condition of the thoracic viscera in scoliosis, since muscular weakness and the form of the thorax prevent that free exercise of the lungs which is essential to health; for whenever a portion of the body ceases to perform its healthy functions, the approach of disease is to be feared. And, although phthisis is not common among those who are affected with lateral curvature of the spine, yet the recumbent position cannot be long maintained without imminent danger being incurred of becoming phthisical.

Sea-air and bathing are, in almost all cases of this description, highly to be recommended. The general health is thus improved; and with this improvement, the power to bear mechanical treatment increases. And, for the same reason, an animal diet, as much as possible, is to be encouraged. Cod-liver oil, also, may be given, together with preparations of iron, if

a sufficiency of meat cannot be taken. Stimulants are only necessary to enable animal food to be digested more easily.

The *Mechanical Treatment* is that on which we chiefly rely for the removal of lateral curvature of the spine.

After what has been already said, it will not be doubted that the treatment of spinal curvature must vary as the cause which induced it varies. Unfortunately for orthopædic surgery, it has been too much the habit to treat every form of spinal curvature, whether induced by immoderate use of an upper extremity, or by deficient length of a lower extremity, or by thoracic disease, or other cause, after the same fashion; to ignore the cause, in fact; and to treat the affection entirely irrespective of cause and position; so that—whether the curve be primary or consecutive—whether it depend on affection of a lower extremity, or on the use of an upper extremity—the dorsal curve is treated without reference to cause or consequences—without knowledge—and, I might say, without honesty—until it has become matter of doubt, among members of the profession even, whether spinal curvature is curable.

Spinal curvature is curable; but only when all the circumstances which gave rise to it are taken into consideration.

In Lecture IV, an instance of spinal curvature is represented in Figure 6, which is a sigmoid curve, consisting of a primary lumbar curve and a consecutive dorsal curve; and the cause of the lumbar curve is obliquity of the pelvis, occasioned by genu valgum. The ordinary treatment of such a case would consist of a spinal instrument to act on the convexity of the dorsal curve, with, perhaps, a second plate to act on the lumbar curve. Let no one suppose, however, that such treatment would be effectual to remove the spinal distortion. Not only would it not be removed; but distortion would increase, notwithstanding that the spinal instrument might be worn, so long as the cause remained. The treatment should first be directed to the cause of curvature; namely, to the knee. For, until the inversion of the knee is removed, the spinal distortion must remain. In this instance, the treatment was as follows. An apparatus was applied to the leg to restore the straight line of the limb; the recumbent position was much observed; and slight pressure was made on the lower part of the lumbar curve, while the dorsal curve was supported.

Again, Figure 7 illustrates a case in which the pelvis was rendered oblique through standing much on one foot, and where, consequently, was developed a strongly marked lumbar curve, which was compensated by a dorsal curve. In this instance, as in the last, it was necessary first to remove the cause by obliging the patient to recline in a spinal chair during several hours in the day. When this first point had been accomplished, the removal of the lumbar curve was easy; and, as would be expected, the dorsal, or compensating curve, was removed even before the primary curve. Thus, the recumbent posture must be considered a very important adjunct to other and more direct treatment, in all those cases which depend primarily on affections of the lower extremities.

Again, Figure 10 represents a case in which the dorsal curve had been induced by using inordinately the left arm in carrying a burden. The treatment was commenced by removing that burden; and a

spinal instrument was then applied, so as to act on the lower portion of the convexity of the dorsal curve, as well as on the upper portion of the convexity of the lumbar curve. Subsequently, attention was given to the right shoulder, that the muscles, by suitable exercise, might be developed.

The cause of lateral curvature is rarely to be found in the spine itself. Generally, it must be sought for remotely; or the cause may be, and it often is, general debility, when the spine partakes with the rest of the organism.

Nothing has been more abused than the mechanical treatment of spinal curvature. Let the case be curable or incurable, and let distortion arise from whatever cause, the treatment in each instance has been the same. "*Dans l'art de guérir, tout est bon, tout est mauvais; c'est un arme à deux tranchants—sublime si l'on s'en sert avec science, méthode, ordre, et sens commun; absurde et dangereuse autrement.*"

Common sense alone would indicate that, in the treatment of spinal curvature, the primary curve should first be acted on; and, further, that it is of little use to act on this primary curve without first attending to the cause which gave rise to curvature. Having, then, treated the cause, the question is, how best to act on the primary curve.

Fig. 26.

It has been shown how the curves are formed, and that compensating curves are necessary for equilibrium. If the cause of curvature is removed, as genu valgum, for instance, the pelvis will regain its natural position; and the spinal curves, when distortion has been of short standing, may then be removed even without mechanical support of any kind.

But, the cause being removable, it will not require argument to prove that, to act with effect on a series of curves, the curve which was first formed must first

be acted on. The other curves are merely compensatory of the first; so that to treat one of these, in lieu of the primary curve, is much the same as with disease to treat a symptom only.

In Figure 15, the lumbar is the primary curve. To act on such a series of curves so as to restore the spinal column to a straight line, a slight knowledge of mechanics alone is necessary to make it quite certain that pressure should not be made on the greatest convexities of the curves. Pressure in this position is quite unequal to remove a curve: it will flatten the ribs, but it will never lessen the spinal curve. Figures 26 and 27 were taken from two unfortunate patients

Fig. 27.

from whom I had occasion to remove spinal instruments, which had been used after the manner above indicated; namely, on the greatest convexities of the spinal curves. By dint of excessive pressure, through daily screwing the instrument for a space of three years, the ribs were flattened, and the plates of the spinal instruments were entirely imbedded in the ribs. Any treatment more barbarous, and termed surgical, I never before witnessed.

It is evident that such pressure as is necessary to be made should be so applied that it may produce the greatest effect in straightening the spine, with the least injury to the parts which are immediately acted on. This may best be done by acting on the lower portion of the convexity of the primary curve obliquely upwards, and on the upper portion of the secondary curve obliquely downwards. This rule must be observed when the curves are formed from above downwards. But when they are formed from below upwards—for instance, lumbar and dorsal, or lower dorsal and upper dorsal, etc.—it is necessary to act on the lower portion of each curve.

This pressure should, as much as possible, be made

to follow the course of deviation of the parts themselves; and, consequently, it should never be directly lateral. By using extension in the manner indicated, curves, which cannot otherwise be treated, may be unfolded. This unfolding process is slow; and this will not excite surprise, when it is remembered how short are the ligaments, and how closely fitting are the bones which are to be acted on. Rapid changes are impossible, and should not be expected.

When the instrument fits well, frequent changes are unnecessary; great pressure is never required, and it may even be hurtful. Modifications are necessary from time to time, to keep up the action of the instrument, and to vary the pressure, as the curves unfold.

Spinal instruments may be portable, when, if well fitting, they will be worn with great comfort and advantage; or they may be fixed to a couch. In the latter form, being used in the recumbent posture, when the weight of the body is removed from the spine, they are necessarily much more efficient to remove distortion than portable instruments. Not only is the recumbent position most favourable for the action of the instrument, but the instrument itself is infinitely more powerful to remove spinal curvature than any portable instrument can possibly be. The principle on which both of these instruments are constructed is similar; but the couch, acting with powerful machinery, instead of a slight cog and pinion motion only, is so powerful to effect the purpose in view, that it will remove distortion in cases where the portable instrument is utterly useless. In cases of severe distortion, I always recommend the combined use of the couch and the portable instrument, the employment of one alternating with that of the other.

After curvature has been removed, attention should be directed to the development of power by means of exercises which shall bring into action the muscles of the trunk and extremities; such as swinging, dancing, riding, swimming, and the like. These exercises, alternating with rest, will, if judiciously employed, rapidly produce a marked increase of muscular power, as well as improvement in the general health. Friction also, as in shampooing, is very useful, not only in gaining a better condition of the skin, but in conducing to that suppleness of body which, after the removal of spinal curvatures, is most difficult to acquire.

The *palliative treatment* of spinal curvature is applicable to such cases as are not curable. In Lecture v, Figure 16, is an instance of severe curvature, and well portrayed, arising from inflammation within the thorax and its consequences. To attempt to cure such a case would be fatal to the patient; but a support to the enlarged side and to the sunken shoulder will give immense comfort to the wearer.

Again, caries of the bodies of the vertebrae, destruction being irregular, is not unfrequently followed by lateral curvature above and below the seat of disease, after ankylosis is complete. These curves are formed for the sake of equilibrium; and it will probably not often occur that the surgeon shall desire to disturb this effort of nature. I have seen, however, pressure with a spinal instrument made on such curves; the disease re-established; lumbar abscess form; etc. It need not be said here, that efficient support is all the instrumental treatment that ought to be permitted in such a case.

Cases, also, very frequently occur in which, through

excessive distortion, rotation being very great, or ankylosis having taken place, the cure is impossible; yet, where well adapted support gives to the patient not comfort only, but power. Without such support, there may be extreme weakness; but with it, strength to follow the ordinary courses of life.

Lettsomian Lectures

ON

MIDWIFERY AND DISEASES OF WOMEN.

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LECTURE I. (*Continued.*)

ON SOME POINTS CONNECTED WITH THE PATHOLOGY AND ETIOLOGY OF FIBROUS TUMOURS OF THE UTERUS.

Changes undergone by Uterine Tumours.

THE *intrinsic changes* which these tumours undergo in the process of growth are most important; not only because they are of moment in enabling us to judge of the character of the growths, but also because they are useful as indications to guide us in the treatment. These changes, of course, have no relation to the extrinsic changes in the symptoms produced by the growth of the tumours, and by their connexion with surrounding parts.

The intrinsic changes may be classified into three varieties.

I. A process of *softening*, which includes five kinds: *a.* Conversion of the body into a more fleshy mass—a sort of sarcomatous transformation; *b.* Interstitial deposition of watery matter—œdema; *c.* Conversion into a cyst containing liquid matter; *d.* Suppuration; *e.* Fatty degeneration.

II. A process of *hardening*, which depends on the chemical composition of the tumour, and may be peripheral or interstitial.

III. A process of *absorption*, under which a tumour disappears in part or altogether, and this without the assistance of medicine.

I. *SOFTENING.* *a.* The *sarcomatous state* has been usually regarded as the earliest stage of uterine fibrous tumours from the time of Hunter and Bayle, during which period they were spoken of as “the fleshy tubercle”. Guyon, however (an excellent authority on uterine fibrous tumours), implies that this softening is not so often an *early stage* as a *progressive stage* or decay; although he admits that it is occasionally also the incipient stage of fibrous tumour. Moreover, in the softening from decay, the feeling of softness is more marked. Such tumours are generally redder in colour and more full of vessels; and the uterine tissue, especially the muscular, is more marked.

b. Softening by *œdema* may come on suddenly; and then, according to Guyon, it is accompanied with great vascularity of the tumour. These cases, he believes, generally prove fatal. The disease is probably inflammatory, and closely resembling acute œdema of the scrotum. Luys gives an example