THE CONSERVATIVE TREATMENT OF TUBERCULAR JOINT-DISEASE.¹

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WHEN the possibilities of the extension of tubercular processes in bone are considered, the outlook appears so doubtful that nothing but radical measures would seem to be of avail; and were it possible to always definitely remove the whole of a tubercular process, this measure would receive general support, but the difficulty of definite localization of the focus in early stages, when this should be attempted, as well as the impossibility of determining the limits of the affected tissues, prevents this measure from being one of surgical certainty. The value of conservative treatment of tubercular joint-disease cannot be estimated by theory, unless the theory be substantiated by clinical facts, as shown by the results of cases having undergone this method of treatment; and a consideration of this method of treatment must, in a brief communication, consist of simply a statement of the object to be gained, for which this method is used, the means employed to obtain this end, and an illustration of what results may occur when this has been successfully carried out. It would not be claimed that the method would always meet with success, but that success may be expected in a large majority of cases when the conditions are properly complied with, and that the cure by this means is attended with much less destruction of important structures, than when attempted by early removal, which must include much healthy bone, in order to insure complete eradication of even a small area of infection.

The conservative method depends upon the cicatrization in the tubercular process, which at some stage of the disease walls off the affected portion. It is known that if bone is placed under proper conditions it will heal, and for this it is necessary that the diseased part should be kept in a condition of physiological rest, which would vary according to the locality of the disease. The simple placing of a patient in bed as a treatment for any joint-disease, and particularly for a disease of the hip, or the spine, is not the treatment for a diseased joint, for the principle of the conservative treatment is the rigid enforcement of rest, and protection from bruising of the two joint-surfaces, adapted in its detail to each particular joint. It must be borne in mind that the freedom, which to a normal joint is physiological, becomes in a diseased one a source of actual trauma and constant irritation. For the purpose of illustration, the disease of a hip may be used as representing the type of the severe form of disease, and one difficult to treat.

The object of the treatment is to protect the diseased joint-surfaces from all such irritation as may be in its respective stage injurious, until the process of repair is complete. The injury which may come to the diseased joint may be considered as that either of mobility, giving friction of the diseased surfaces, or pressure, or, what is still more harmful, the two combined, and must be prevented by the removal of all natural use and weight-bearing of the limb. In addition to this is, however, the great intra-articular pressure, which comes from the spasm of the powerful thigh muscles, driving the head of the femur against the acetabulum. Examinations of specimens show

that the evidence of disease is usually most extensive in the upper part of the acetabulum, the place where most of this pressure would be exerted. Therefore in the thorough treatment of disease in this location there must be rest to the part by immobilization, avoidance of jar and bruising, and the removal of pressure from the muscular spasm.

These indications which are met with in a diseased joint must be treated in the most thorough manner, demanding a continuance of the utmost care for a long period of time, and may be considered under the heads of immobilization, traction, and the removal of weight.

The immobilization must be complete, not only for voluntary movement in the normal planes of motion of the joint, but also all involuntary motion must be guarded against, such as would be occasioned by the child turning and twisting, both when awake and asleep. For this reason, it is not sufficient that a child be simply placed in bed, when this method of treatment is to be used, but must be so secured, as for instance in early cases during recumbency, by the use of the frame, to which the child can be properly strapped, that all injurious motion may be prevented, and attention given to the child's wants without disturbing the rest to the joint.

The traction of the limb to overcome the pressure from the spasm of the muscles must be sufficient to prevent the unusual pressure of the head of the femur against the acetabulum, and must be constant for all such time, as the need of this part of the treatment is evident. This traction must be carried on in the line of deformity of the limb, must be continuous, both when it is applied by the weight during the recumbent and by the apparatus during the ambulatory treatment.

The necessity for the removal of pressure by weight-bearing lasts longer than either that of immobilization or traction. During the ambulatory treatment this is accomplished either by the use of crutches, while the traction splint is worn, or later by the apparatus used as a walking splint, as an ischiatic crutch, transferring the weight to the tuberosity of the ischium.

Three types of cases can be used to illustrate the results of the method of treatment when carried out carefully, and which represent not different types of disease, but cases of different grades of severity.

CASE I. Boy, six years old. At the beginning of treatment presented symptoms of pain, occasional night-cries, slight deformity, slight atrophy, limitation of motion and limp. No spasm while limb was at rest. Treatment carried out by the removal of weight, by crutches, and a high sole. This treatment continued for one year, when all signs of joint disease had subsided. Treatment was then omitted, child allowed the gradual use of the limb with no return of symptoms.

CASE II. Boy, eight years old. Early symptoms of pain, night-cries, limp, deformity, spasm, and limitation of motion. Treatment by traction in recumbency, followed by ambulatory treatment, with splint and crutches. An abscess developed later, which was opened, and discharged for some months. Treatment continued for three years. At the time of last examination, flexion in 90 degrees, abduction one-half, rotation one-third. Limb strong; patient walks with a slight limp.

CASE III. Boy, eight years old. Early symptoms of pain, spasm, night-cries, slight deformity, and

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limitation of motion. Early treatment in this case was not constant. Later, child entered hospital for an abscess, which was opened. Treatment continued by recumbency for some weeks, later by ambulatory treatment, with traction, high sole and crutches. During the next three years several abscesses formed, with many remissions of symptoms of pain, with increasing deformity and spasm. At the end of five years the child had motion to nearly 90 degrees, rotation nearly normal, abduction one-half, shortening one inch. On the upper part of thigh and buttock are scars of six or seven sinuses. General condition at the time of last examination excellent.

The first two cases illustrate the abortive influence of the conservative treatment of cases carried out carefully and successfully during its early stages, in which the result of both cases was good. The third case represents one, in which, as the early treatment was not thorough, but by the later continuance of the conservative treatment, the tubercular process subsided, and cicatrization so far was carried on that the joint became a useful one, and thus illustrates the possibility of cure after the disease has become extensive, as is shown by the long continuance of the process and the many abscesses. The treatment by conservative methods, although it requires time and patience, has the advantage that the cure is obtained with the least destruction of bone. When compared with the operative treatment in this respect, it is seen that the loss of substance is much less, and the possibility of a joint mobility is greater. If the attempt is made to remove the disease by operative measures, it must be by the loss of considerable bone substance, or the thorough eradication of disease cannot be expected.

Clinical Department.

A CASE OF DISLOCATION OF THE LOWER END OF THE TIBIA FORWARDS.

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THIS form of dislocation is so rare that I thought a report of a case might be interesting and instructive.

J. H., aged twenty, occupation milkman's helper, family history excellent, is a strong, vigorous adult, who has been accustomed to same work for several months. The work consists of carrying milk-cans in both hands from the team and delivering at doors. On the morning of December 17th, at 4 o'clock, he alighted from the team with cans of milk (about six quarts) in each hand; he stepped from the footboard, placing his left foot on the step of the team, and then jumped to the ground. On touching the right foot to the ground, he felt pain in the ankle and fell; he was unable to move his ankle. By the aid of his partner he hobbled to my office, a short distance.

On uncovering the leg I first noticed a large prominence over the lower end of the tibia. On examination, I found that there was a complete dislocation of this bone at the lower end. By extension of the ankle, with pressure downward on displaced bone, it was reduced without much difficulty. Side-splints were applied, and the patient removed to his home. Dr. M. F. Gavin later confirmed the diagnosis of dislocation of the tibia forwards. About a week after the accident a plaster dressing was applied; this remained for a few

weeks. In about six weeks after the injury the patient was able to resume his work, and at present the function of the joint is apparently normal.

In this case there was no fracture, there was no disturbance in the relations of the bones and joint excepting between the tibia and the astragalus, the former being pushed forwards, and of course torn away from the fibula.

E. M. Moore, in the "Reference Handbook of Medical Sciences," gives the best description of this: "This form of luxation is an exceedingly rare one, and the different cases often vary much in degree. The tibia is sometimes carried forward a short distance only, but it may, however, be carried so far that, instead of resting partially upon the astragalus, it may leave it entirely and stand upon the instep. As in lateral luxation, the fibula is apt to give way above the ankle, and the displacement is sometimes complicated with a fracture of the end of the tibia. The deformity is striking; the heel projects, the lower extremity of the tibia overhangs the instep, and the motion of the ankle is lost. The reduction is effected by flexing the leg upon the thigh, then drawing upon the foot in the line of the tibia."

Bryant's "Surgery" mentions a condition something like the case reported, but both tibia and fibula are dislocated forwards: "Sir Astley Cooper calls this, dislocation of the foot backwards. It is usually caused by the violent propulsion of the lower end of the leg-bones forwards, when the foot is fixed, and is readily recognized by the shortening of the anterior surface of the foot and the proportionate elongation of the heel, with some pointing of the toes, as well as prominence of the lower end of the tibia. At times, the fibula is fractured and the point of the bones carried forwards with the astragalus. This accident is rare, it being more common to meet with fracture of both malleoli, and displacement of the foot and broken fragments backwards."

Hamilton says: "This dislocation may be produced by a violent extension of the foot upon the leg, as, for example, when, the foot being engaged under a piece of timber, the body falls backwards to the ground; or when, the leg remaining fixed, a heavy weight descends on the front of the foot, the foot resting upon an inclined plane; by a blow on the back of the tibia, or possible even by the toes being brought violently in contact with some firm body. The fibula is generally broken on a level with the articulation, the malleolus internus also in some cases, and still more rarely a fracture occurs through the posterior margin of the articular surface of the tibia. Symptoms: The length of the foot in front of the tibia is diminished, while the projection of the heel is correspondingly increased; the toes are turned downwards, and the heel drawn upwards and fixed in this position; the end of the tibia may generally be distinctly felt in front of the astragalus; the extensor tendons of the toes are sharply defined, while the tendo-Achilles is curved forwards, and tense."

This injury can be distinguished from dislocation of the astragalus backwards; in this displacement the body of the astragalus is felt behind the ankle, and the absence of its head from normal position easily recognized.

In my case the tibia was displaced forwards; the other bones preserved their connection and relations to the foot.