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EARLY SYMPTOMS AND DIAGNOSIS OF TUBERCULAR JOINT DISEASE.

Read in the Section on Surgery and Anatomy at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

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In view of the fact that there are to read two papers, besides the present, on the symptoms and diagnosis of tubercular joint disease, it has seemed best to me to confine my remarks to a limited portion of the subject rather than to attempt to cover a larger field. I have chosen as a fitting introduction to the study of tubercular joint disease to say a few words on the value of early diagnosis in these conditions, and the relations between diagnosis and the therapeutic measures at our command.

In most medical matters it is best on general principles to make the diagnosis when the case is first seen, but this means that it is best largely as a matter of convenience and to enable the attendant through early prognosis the better to control his patient, for a little delay in instituting treatment would make almost no difference with the patient's welfare. The cases are few where therapeutics are so perfected as to permit of the disease being aborted, or much modified by treatment, even if seen in the very beginning.

In tubercular joint diseases, however, it is quite otherwise. Here we are dealing with a disease which begins insidiously and progresses so slowly as to require observation for a considerable period of time to make that progress evident. Changes in symptoms are to be noted not day by day, but week by week, or perhaps only month by month. The time element here holds a prominent place.

When we consider that the chief factor in the extension of the disease is traumatism more or less frequently repeated, we at once see the value of an early diagnosis, for orthopedic surgeons taking the hint have worked out the mechanical problem of how to avoid such traumatism. By this, the so-called conservative method of treatment, the real cure is left to the innate resistant and reparative forces of the organism, stimulated by intelligent support of the general system. If such treatment can be instituted at a time when the disease is limited to a small collection of granulation tissue, say in the articular extremity of a bone, the joint can be put in the best possible condition as regards probable cure.

Experience has abundantly shown that this method of treatment when begun early gives excellent results, but it requires the constant attention of the surgeon for from two to six years, a hardship on the medical attendant, and on the parents, and most of all on the child. To initiate such a course of treat-

ment in a delicate sensitive child is like passing sentence of imprisonment for a like period of time—to be justified only by the extreme conditions of the case. It were almost criminal to pass such sentence on circumstantial evidence or in fact on anything short of almost absolute certainty in diagnosis.

Then again these children are mostly offspring of the poor who can not have the means to procure properly healthful surroundings and who all too often, their patience exhausted in the long siege, willfully or ignorantly neglect those measures within their reach.

Were some more direct method of treatment shown to give equally good results in regard to function it would be more than welcome. Of such methods there are a number which, though still in the experimental stage, bid fair to be of value.

Early excision of tuberculous foci at a time when the disease is confined to small areas outside the joint proper has been long practiced and is theoretically, where it can safely and thoroughly be carried out, an ideal treatment. To drill out the neck of the femur through the trochanter in coxitis, enucleating the tubercular foci in the head of the bone may be a rational procedure under certain conditions and may be carried out by those who have the requisite skill, but to be justified it must be done early and at a time when the diagnosis is most difficult. Not only must the diagnosis of tubercular coxitis be certain but the lesion must be accurately located in the head of the femur. The procedure is by no means an innocent one nor is it certain that in a given case there might not be left a portion of the diseased tissue. Further, there may be more than one focus of disease, and of this we have no means whatever of determining the existence. After all, granting that the technique of the operation can be perfected the whole matter hinges on the diagnosis. Senn says that with the exception of circumscribed points of tenderness outside of the joint, that indicate the existence of primary osteo-tuberculosis during its early stages, we have no symptoms which enable us to make a positive differential diagnosis between a primary osseous and a primary synovial tuberculosis of a joint. In the superficial joints such points of tenderness can be located, but that is quite out of the question when the focus of disease is in the hip or in the deeper parts of the other large joints. However, those cases in which the muscular atrophy is rapidly progressive are quite certainly of osseous origin, or at least involve the bone.

Another method of treatment and one which bids fair to be more generally applicable than early excision is puncture and injection of iodoform directly into the foci of disease. This requires, with the latter, the most perfect aseptic technique, fairly accurate localization, though there is little or no harm done by injecting sterile iodoform emulsion into the

tissues about a joint and if the emulsion is not known to be sterile it should not be used at all.

A number of other methods have been suggested, some of more or less value, the latest of which is that advocated by Bier in the Twenty-first German Surgical Congress. In a second paper in 1893 he reported forty-three cases of surgical tuberculosis treated by this method, which consists in causing a continuous hyperemia of the extremity for a number of weeks. Many of the cases were cured within three months. The method has been taken up by Mikulicz who has seen from it sufficiently good results to think it of considerable value. If this simple procedure proves to justify the hopes of its originator it can be tried as soon as the diagnosis is made and as it is thoroughly innocent the diagnosis need not be absolute.

The study of diagnosis and treatment should go hand in hand. Important as it is to make the diagnosis in tubercular joint disease at the earliest possible time, the diagnosis should be made certain before such severe measures as long continued immobilization or operative procedures are instituted. In most cases, if immobilizing apparatus be applied early, the symptoms of muscular spasm, pain and even tenderness will soon subside and unless the diagnosis is certain in the beginning, there will be a lurking suspicion that an error has been committed and the child is being badly punished. In other departments of medicine in case of doubt it is generally advisable to settle upon the more severe of the diagnostic possibilities, but here a little delay sufficient to clear up the doubt is the lesser of the two evils as long as there remain to be devised methods of treatment entailing less hardship on the patient. Unfortunately, too, there is no symptom or group of symptoms which determines with certainty when a tubercular joint is permanently cured. The case is not unlike that of syphilis. In many instances it is impossible to make the diagnosis, no matter what the probabilities, before the appearance of secondary symptoms and it is a very severe thing to initiate a long course of mercury and iodid of potash in a case of doubt. So in tuberculosis of the joints, the diagnosis is not to be made in the very beginning of the disease; we must wait for certain symptoms and sometimes, be it said, characteristic symptoms are late in making their appearance.

I do not wish to be understood as really advocating delay, but rather as emphasizing the necessity of making the diagnosis certain beyond reasonable doubt and then the earlier the better.

We have still too many cases of rheumatism developing into hip joint disease and too many cases of hip joint disease with caustic marks and blister stains about the knee joint.

In view of the previous considerations let us consider at what stage of the disease the diagnosis is to be made with certainty. Taking tubercular coxitis as the type, in general the first symptom to be noted is almost invariably the limp, an evidence of more or less conscious pain. There is nothing characteristic about this limp—it may be simulated by a number of other conditions. Its real value is to direct the attention of the physician to the child's hip, that he may the more carefully observe the case and watch for more definite symptoms. Actual pain about the hip, or pain reflected to the knee, makes the diagnosis of coxitis probable, but in many

cases pain severe enough to attract attention is entirely wanting. It seems to bear no definite relation to the extent or character of the lesion. Of most value in making the diagnosis are symptoms ascribable to inflammatory irritation, chief of which is spasm of the muscles controlling motion of the joint. No single symptom is characteristic of tubercular joint disease but the nearest approach to it is this muscular spasm, especially if it varies in intensity and intermits. A case in point deserves mention:

A boy of 5 years in whose family there was a case of pulmonary tuberculosis was noticed to limp for several days. The right leg was held somewhat everted, slightly flexed and abducted, though the boy would stand perfectly straight when his attention was directed to his position. Considerable joint pressure made in various directions failed to elicit pain; movements of the leg were normal in extent and painless, save adduction which was slightly limited, as was also rotation of the thigh in the flexed position. The child was kept under observation without treatment and the limp entirely subsided in a week or two. He was seen from time to time for several months but no further evidence of hip joint disease appeared.

Another case in a boy of 14 whose brother came to me nearly a year ago in the so-called third stage of hip joint disease with a large abscess, has had a hip-joint limp for many months. It varies in degree, subsiding almost entirely at times. He has occasionally had a little pain in the region of the joint. The leg is habitually held in slight flexion but abduction is more marked. Adduction is somewhat limited. There is no shortening. There is a slight fullness to be made out about the hip. Vigorous movement up to the limits of range failed to bring out expression of pain as did also severe joint pressure in various directions. It was thought to be a low grade of inflammation in a bursa in the region of the lesser trochanter. The boy is kept under observation and without treatment the condition has materially improved though there is still a considerable limp at times. His general health is excellent and he is a lively growing boy.

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In writing on the subject proposed by our honored chairman I have limited my paper to the consideration of Pott's disease of the spine and hip disease. These affections present many difficulties, especially in the early diagnosis. In diseases of the other joints the same principles and methods of examination hold good and diagnosis is easier because the bones lie nearer the surface.

POTT'S DISEASE OF THE SPINE.

The most important symptom of Pott's disease of the spine is pain in the stomach. Two lines which should find a place in the *vade mecum* of every physician are: "The pain of spine disease is in the stomach," and "the pain of hip disease is in the knee." No prescription for recurring colic should be written, unless it is preceded or presently followed by a careful questioning of the health of the spinal column. The inspection thus prompted may reveal a projection in the median line which should be located by counting the spinous processes downward from the vertebra prominens (seventh cervical), or upward from the fifth lumbar, which is in the line connecting the posterior superior spinous processes, or the result of one method may be verified by the other. The rounded back of rickets or spastic con-