HIP-JOINT DISEASE AND ITS EARLY TREATMENT.

Read before the South London District of the Metropolitan Counties Branch.

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FIRST I would define the class of hip-disease to which my observations particularly apply. I classify hip-joint disease primarily under two heads, acute and chronic. We meet with acute synovitis and acute arthritis; acute synovitis of simple serous catarrhal character; acute suppurative synovitis; and the infective suppurative inflammations, as the gonorrhoeal and pyæmic. I do not refer to any of these. We meet with acute arthritis when other articular structures beyond the synovial membrane are affected. This acute variety commonly ends in acute necrosis of the epiphysis of the femur, or portion of the acetabulum; it is sometimes designated acute epiphysitis. I do not refer specially to this. My observations are limited to the chronic variety of arthritis, and with respect to this I shall confine myself to parts of the subject.

First, with respect to the strumous, or scrofulous, or tubercular variety or forms of the disease, I am quite convinced, by examination of parts removed from my own cases of excision, now amounting to sixty-eight in number, that chronic hip-joint disease in children is met with in three several kinds: 1, simple; 2, strumous or scrofulous, which are synonymous; 3, tuberculous. Each kind may continue distinct from its commencement to its termination, but the second and third may be the sources of other or general tuberculosis.

It is true that scrofulous disease can become the focus from which tubercular inoculation, or tubercularisation, of the system may spread. It is true that primary tubercular disease of the synovial membrane or articular bone is found.

I here remind you that the report of the Committee of the Clinical Society upon hip-joint disease in 1881, stated, "In respect to the question whether hip-disease in childhood is a scrofulous affection, or in what proportion of cases any element of scrofula is present, the Committee have felt themselves unable to offer any decided opinion, since the whole subject of the nature and histological characters of tubercle, and the relation of scrofula to the tubercular diathesis, must be still *sub judice*." They pointed out that of 429 cases, 9 per cent. died of some form of tubercular disease; and they pointed out that of 104 deaths from hip-joint disease, 36 died of tubercular affections, or more than 34, and nearly 35, per cent. These figures include my own clinical facts up to 1880. My experience since is in support of this statement with regard to the tubercular nature of the disease, but it is rather from microscopic examination of parts removed by excision than from deaths.

Since the report referred to, I have had eighteen specimens of joint-disease examined carefully for tubercle, and these have been demonstrated to present tubercle in its generally acknowledged forms. Six of the specimens were exhibited at the Pathological Society in February, 1881, when I read my paper on tubercular disease of joints. The twelve other specimens were examined by the late Dr. Williamson of this hospital in 1882, but have not been publicly exhibited before this evening. Bacilli were not looked for in either set of specimens.

I am not singular in these views of scrofulous and tuberculous disease of joints. Mr. Erichsen, in the excellent new edition of his *Surgery*, by Marcus Beck, recognises tubercular disease of joints, and almost admits primary tuberculosis, without giving any additional facts of his own collecting. Mr. Bryant adheres to his former opinions. Mr. Macnamara has personally convinced himself of the fact of tubercular disease. Mr. Barwell, in an article of this year's date, in Ashhurst's *Encyclopædia of Surgery*, gives an opinion rather in favour of tuberculosis of joints but no facts.

The most recent public utterances on the part of continental surgeons, since those quoted in my paper of February, 1881, were made at the International Congress in Copenhagen, where Ollier, Trélat, and Volkmann, repeated in an emphatic manner their views as to the frequency of the occurrence of tuberculosis of joints. Indeed, I am inclined to imagine that these authorities may be too broad in their statements. Volkmann stated that, in 250 instances of excision of the hip-joint, he had found all but five or six to be tubercular. He had found Koch's bacilli in all. P. Bruns, of Tübingen, is convinced of the tubercular nature of white swellings and fungous gelatinous tissue. König, of Berlin, formerly of Göttingen, in a recent

pamphlet on disease of bones and joints, writes more positively than before of the frequency of tubercular disease.

It is not denied that many cases of scrofulous disease of joints recover without any extension of this disease to other parts of the body, as in the history of scrofulous disease elsewhere in the frame. It is not denied that primary tubercular disease of joints is recovered from without operation and without extension of the neoplasm, now called by some infective granuloma. I, however, reassert, from my own knowledge, that primary tubercular disease of joints does occur, and I venture to reassert the truisms, 1, that tubercle is auto-inoculable or infective; and, 2, that scrofulous inflammations predispose to and become the seat of tuberculosis, as these have an important bearing on the early diagnosis and early treatment of this disease of which I am speaking.

Next to this subject of the frequency of the tuberculous form of arthritis at the hip, and intimately connected with the pathology of arthritis, I would direct attention to the frequency of the occurrence of necrosis and sequestra, in the progress of it.

The Committee of the Clinical Society, already quoted, reported that they found nearly 60 per cent. of the specimens presented more or less necrosis, or sequestra of dead bone. In 1880 I had directed attention to the frequency of its occurrence in these chronic cases, having up to that time met with it in 13 of 45 cases of excision. Since then, nearly five years ago, out of 23 additional excisions, I have met with necrosis in 12 of them. This makes a total of 25 instances of necrosis or sequestra in 68 excision cases, a percentage of more than 36.

I believe that this represents more faithfully the percentage of necrosis than the statement of the Committee of the Clinical Society. In their investigation, they had almost exclusively museum specimens, obtained *post mortem*, to see, beyond my own collection of thirty-six specimens removed by excision (out of forty-five specimens) before death.

I bring up this subject again because, as time has gone on, I have become more than before impressed with the significance of the occurrence of those sequestra. I think it is important, both with regard to quite early treatment when the disease is in its infancy, as it were, and it is of yet greater importance to recognise the possibility of its occurrence, or, rather, its having occurred, when abscess has formed. I do not intend to speak of the necrosis as it affects the question of incision or excision; but, when reverting to the early treatment, I shall again refer to this possibility of necrosis. It is obvious that it is most important to prevent it.

The third subject to which I wish to turn attention is that of shortening of the limb as the result of the disease of which I am speaking. Surgeons are only too well acquainted with shortened limbs after the disease has passed beyond the second stage. Dividing the disease into three stages, for the sake of description, the second stage commences with the formation of abscess. When sinus and pathological dislocation occur, the disease has entered its third stage. Surgeons are only too familiar with shortening as the result of these later stages of the disease, but they are not so familiar with shortening as the outcome of the disease when cured in its first stage. It is on shortening in this condition that I wish to remark.

It is my impression, from perusing text-books on this disease, that the practitioner is led to expect cure of the first stage without shortening; at least, this result is omitted. I am not speaking only from my own experience when I state that such an expectation is misleading. Cure of the first stage is a frequent possibility, but it is not always followed by perfect after-growth of the limb. At page 12 of the report of our committee of the Clinical Society, we are informed that in seventeen cases personally examined, and found cured after the first stage, there were twelve good cures, with an average shortening of 1 inch, and three cases which presented $3\frac{1}{2}$ inches of shortening. These cures had not been attended by the formation of abscess, yet the fifteen cases presented an average shortening of $2\frac{1}{2}$ inches.

I look upon this as a very interesting fact, and think it should be more widely recognised than it is. It is a fact well known to me now, from the observation of the cases referred to in the report, and from my own experience. Cases well known to me as cures after the first stage, without suppuration at any period of their history, have resulted in permanent shortening of the limb. When simple synovitis is followed by resolution and cure, no shortening is expected or experienced. When arthritis occurs, and that ends in resolution, even then shortening may ensue; and I believe it mainly depends upon the situation of the bone-inflammation. Acetabular ostitis, ending in resolution and cure, is not likely to be followed by any, or, by very trifling, shortening; but when there is primary femoral articular ostitis, and that is followed by resolution and cure, it may be, and certainly will be, followed by shortening, and this will be more or less

in extent as the epiphysal line of the bone has suffered from the inflammation. This consequence of the first stage of hip-joint disease should be fairly faced, and the young practitioner should be warned of its possible occurrence. The percentage of cases not passing beyond the first stage is, according to the report so frequently quoted, 31 per cent. The proportion of such cases known to be cured is given as 48.4 per cent.; the possible percentage may be larger. This is an excellent result, but I believe it may be exceeded in the future. Amongst the classes above the poor hospital-cases, the percentage of cures is still better. The fact, however, remains that shortening does occur. I have briefly indicated the probable explanation of it. The surgeon should warn the friends of a child-patient that the cure of the disease in the first stage may lead to shortening in spite of the best treatment, and we may know that it may be from one inch to three inches and a quarter.

The fourth subject is one which belongs to both the pathology and to the symptomatology of the disease—namely, the contraction and rigidity of muscles about the joint. It is invariably present in the disease under notice. It is found in various degrees, being strongly marked in some cases, feebly marked in others. Its presence is absolutely indicative of the existence of inflammation in the joint; its absence is indicative of the subsidence of inflammation. It is, therefore, one of the most valuable and significant; in my estimation, it is the most significant of all the early symptoms of hip-joint disease. Some authors appear to attach but little importance to the symptom, and content themselves with the mention of it. Mr. Hilton pointed out the explanation of this interesting phenomenon in his *Lectures on Rest and Pain*, in 1860 and following years. In his eighth lecture, he said: "When the interior of the joint is in a state of inflammation or of irritation, the influence of this condition is carried to the spinal cord, and thence reflected to the various muscles of the joint through the medium of the associated motor nerves, the muscles being supplied by the same nerves that supply the interior of the joint." In that beautiful physiological fact lies the explanation of this constant early symptom of hip-joint disease. I speak particularly of it this evening because, first, I have found it one of the most significant of the diagnostic symptoms, and, secondly, because its early total subsidence and disappearance denote that the disease has yielded to the early treatment. To this point, I may again refer when speaking of the early treatment.

Having now very briefly commented on the four allied subjects, (1) of the often tubercular nature of this chronic disease; (2) the frequency of the occurrence of necrosis and sequestra in the later stages of it; (3) the less frequent, but not uncommon, result of shortening of the limb, found in cures in the first stage of the disease; and (4) the too much overlooked symptom of reflex muscular spasm and rigidity; I will turn to the second part of the title of this paper—namely, early treatment.

I am quite in accord with the majority of surgeons in attaching great importance to pure air, particularly sea-coast residence, and such other general remedies as are well known to benefit scrofulous affections. I wish they were more within reach of the poor. The part of the early treatment of the disease which I would advocate now is absolute rest.

I have so frequently observed that the common treatment by rest has fallen short of absolute rest, that, at the risk of wearying some of you, I shall venture to explain what I understand by absolute rest. Simply applying an approved hip-splint for a diseased joint does not ensure complete perfect rest, as probably most hospital surgeons are well aware. If the splint have been applied properly, it prevents all movement of the joint, but it fails to take off the weight of the body from the limb, nor does it necessarily take off the weight of the limb from the pelvis or body. The limb is supported by the splint, that is true; but that is not enough to procure physiological rest. So long as the limb depends from the body, the muscles and ligaments will assist in supporting it; and so long as these structures around the joint are not in absolute rest, the joint is not functionally at rest. Perfect rest is best obtained by the strictly recumbent posture, combined with a long splint, efficiently applied. Several objections have been, and are, raised against this treatment. It is alleged that the confinement entailed by the recumbent posture is injurious to the general health. No doubt it is so when long continued, and in an unwholesome atmosphere, but only when it is practised under these unfavourable conditions. The main objection is to the unwholesome atmosphere, and that is one which may be overcome. The advantages gained by the absolute rest far outweigh any disadvantage from long recumbency, provided it be in a favourable air.

Another objection raised against recumbency and long rest in early treatment is one common to it and rest generally—namely, that anky-

losis is likely to be the consequence of it. This objection applies to the treatment of simple synovitis or arthritis, but not to strumous and tubercular forms of chronic arthritis. I am convinced that interruption of absolute rest by passive movements of the diseased joint is very injurious, and an unscientific proceeding. It is as unsound in practice as inefficient rest. I have never seen ill results from properly conducted absolute rest; but I have often witnessed the mischief of interrupting the continuity of absolute rest.

Another and third objection to this kind of rest is one of an opposite kind; namely, that the pressure of the opposed articular surfaces causes ulceration of cartilage, or absorption of cartilage and bone. This objection does not apply to the scrofulous or tuberculous disease. When these morbid processes of ulceration, or caries, and absorption, are observed in strumous and tubercular inflammations, they are the results of the inflammation, and not of the pressure. I cannot admit that this objection is valid. It is as untenable as the previous ones, or less tenable. I am, therefore, an earnest advocate of complete continuous rest in this disease, for it is the most potent preventive element in the early treatment.

The morbid actions and changes which the surgeon should aim at preventing, are progressive inflammation, and the collection of scrofulous or tuberculous inflammation products in the articular structures or cavity. These products are known to be very little capable of undergoing organisation, and, on the other hand, they are too prone to undergo degenerative changes, such as caseation and liquefaction.

Next, I advocate absolute rest with the view of preventing the occurrence of the possible necrosis. The formation of a sequestrum in the acetabular part of the joint, or in the head of the femur, must, at any period of the disease, be a serious complication; serious, I mean, as it entails protracted illness and abscesses, and, probably, such operative treatment as is not uncommonly called for in the later stages. Early check of inflammation may prevent the necrosis. I do not say that it will positively obviate it; I can only say that it may do this. When caseous products of inflammation infiltrate a portion of bone, this, in all probability, will become necrotic or carious. We can say this much, that perfect rest is the treatment best adapted to prevent necrosis, and I have pointed out that sequestra have been found in from thirty-five to sixty per cent. of examined morbid specimens.

Thirdly, I would quote the occurrence of the shortening of the limb, which has been found in not a few cases cured in the first stage, as another reason for observing strict rest in the early treatment. The early reduction of the inflammation, both in its local extent and severity, one would expect to have a material influence over the consequences to the growth of the bones concerned. This applies more particularly to affections of the femoral epiphysis, whether they occur primarily or secondarily.

Fourthly, the connection between early treatment and muscular rigidity or spasm is of a character very different from that of the three preceding subjects. Its presence is to be taken as evidence that inflammation is in progress; its total extinction is to be taken as evidence that inflammation has subsided. When there are no longer any muscular resistance nor pain on flexion of the thigh or the pelvis; in other words, when the thigh can be completely and painlessly flexed on the pelvis, then the inflammation may be said to be cured. This is, in my estimation, the most valuable indication that the case is cured.

I am reluctant to take up your time with remarks on the details of treatment; and, indeed, what I have to add may be condensed into a few words. The rest which is ensured by recumbent posture and the long suitable splint, should be accompanied by a certain amount of extension or traction upon the limb. I say a certain amount, for I do not think the quantity or quality of pain from which the patient is suffering is to be taken as the measure of the extension which is to be made. Some surgeons advise that weight or elastic force should be employed sufficient to neutralise the muscular spasms, and pull out the head of the femur from contact with the acetabulum, and to stop the night-screams; but my experience and reasoning are against the employment of so much force. The ilio-femoral ligament is no more capable of extension in early hip-joint disease than in dorsal dislocation of the femur. Weight, or elastic force sufficient to steady the limb, keep it straight, and prevent shortening, is all that is demanded.

With reference to local applications, my experience is against the employment of irritants, setons, issues, and the like. I have found leeching useful in relieving acute sensitiveness and pain in acute attacks of inflammation, such as we now and then meet with in the course of chronic diseases. In a similar way, poultices and soothing fomentations are occasionally needed. Their habitual use is not desirable. The

whole limb should be kept warm, and scrupulously clean by washing, and it should be systematically rubbed to maintain the suppleness of the muscles and joints below the hip, as this obviates some of the minor ills of long confinement.

The splint which I employ almost exclusively is a modification of Thomas's back-splint for the disease. I found the back-splint was unsuitable for the second and third stages of the disease. It was greatly in the way in dressing abscesses and wounds. In the early treatment, it was less easily managed than an outside splint, and needed much care that it did not cause splint-sores. I prefer the parallel outside splints. These are connected by a chest-girdle of the pattern now exhibited. The long splint on the diseased side should be about six inches longer than the limb, and it should be furnished with a simple contrivance for making extension. A stirrup is applied to the foot and leg, and this stirrup is fixed to the end of the splint by a strong elastic band or cord. When firm points of counter-extension are needed, a pelvis-girdle is added to the splint, and to this girdle the ends of a perineal strap are attached. The girdle is also useful in preventing or correcting tilting of the pelvis. In all cases of tilting, I use the double splint, but, when the disease is not accompanied by this deformity, a single splint is commonly sufficient. These splints are covered in by the bed-clothes, are easily managed by mothers, are portable, that is, patients can be carried in them. The ordinary splints for hospital use are made on the premises here by the assistant surgeon-man, at a trifling cost. He can turn out an excellent double splint for 10s. 6d., or a single one at half the cost. Mr. Spratt, of Bond Street, is in the habit now of making the complete double or single splint, and he has kindly lent me one to show, and it is on the table.

Before concluding, gentlemen, I beg your permission to add a few words in reference to the specimens under the microscopes. These are to show tubercle and tubercle of joints. I may divide them into two groups. One small group showing acknowledged typical tubercle, in other structures than articular, namely, tongue and lung. Side by side with this, for the sake of comparison, is a second group, which is subdivided into two sections, one showing tubercle in all stages in synovial membrane (where its presence has been denied or thought very rare, because not looked for); and a second section showing tubercle in all stages in articular bones. These specimens have been mainly prepared from my own cases; but that my specimens may be corroborated, Messrs. Clutton and Makins, and Drs. Acland and Had-don, have kindly lent some of their own preparing. The slides from my own specimens consist of some exhibited by me at the Pathological Society in February, 1881, three years and nine months ago.

I have already referred to some preparations made by Dr. Williamson in 1882. This gentleman, who had been a student here, devoted himself during the early part of that year to the study of tubercular and serofulous diseases of the hip-joint, and accomplished some excellent work. This was his last task. He caught typhoid fever, and died in Florence. These beautiful specimens, which are shown in public now for the first time, have, therefore, a particular and melancholy interest.

In conclusion, gentlemen, I crave your indulgence for many shortcomings of this paper. It is intentionally of a suggestive and fragmentary character, rather than exhaustive, and yet its parts are more or less mutually coherent. It is the result of an earnest desire to assist in the advancement towards a correct and particular knowledge of the pathology and morbid anatomy of this too common disease; it is in furtherance of a desire to obtain for tubercular disease a recognised position in the classification of diseases of joints in English as in foreign literature; it is an effort to distinguish shortening of a limb after cure in the first stage of the disease, as an event which may have to be reckoned for or with; and, in a similar way, to distinguish necrosis as an event which should influence the surgeon in both the early and later treatment of this disease; and, finally, with respect to early treatment, to express the extreme importance which I attach to efficient practical absolute rest.

THE LATE MR. JOSEPH DIXON.—At the monthly meeting of the Hove Board of Improvement Commissioners, on the 21st May, the following resolution of the Works and Improvement Committee was brought forward and adopted:—"That this Committee have heard with deep regret of the death of Mr. Joseph Dixon, who for upwards of twenty-seven years has faithfully and efficiently fulfilled the duties of police surgeon in this town, and they desire to express to the members of Mr. Dixon's family their sincere sympathy with them in their affliction."

MEDICAL MAGISTRATE.—Dr. Herbert Taylor, of Todmorden, has been placed on the Commission of the Peace for Lancashire.

REMARKS ON A FEW ARTICLES OF THE INDIAN MATERIA MEDICA.

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WITHIN the last few years, considerable attention has been paid to the subject of the Indian materia medica. The writings of Fleming, Roxburgh, Ainslie, Royle, O'Shaughnessy, Wise, Bidie, Khani Lal Dey, Moodeen Sheriff, and others (amongst whom I think I may venture, without laying myself open to the charge of egotism, to include myself) have succeeded in awakening medical officers and other practitioners in the East to the important fact that around them on every side in the vast Indian continent, from the Himalayas to Cape Comorin, there are available, at almost nominal prices, often at the simple cost of collection, remedies as powerful and efficient as the more costly imported articles, the supply of which, from the very nature of things, is necessarily limited, and at times precarious. The spirit of inquiry thus set on foot resulted in many indigenous drugs being subjected to clinical trials in European hospitals and elsewhere, where their effects could be carefully watched; and, their alleged efficiency having been satisfactorily proved, they in due time were admitted into the official list of the *British Pharmacopœia*; of this we have examples in Indian hemp (*cannabis sativa*), chiretta, *hemidesmus Indica*, agle marmelos, and kamela. On satisfactory, though not perhaps on equally conclusive, evidence, no fewer than forty other articles were admitted into the official list of the *Indian Pharmacopœia* issued by the Indian Government in 1868. Some of these latter have since found their way into Europe, and are at present under trial in the hands of British and continental practitioners; for example, chaulmoogra-oil, sandalwood oil, gurjun balsam, *anacardium (cardol)*, etc. What the verdict will be, remains to be seen.

To enter on the consideration of Indian materia medica in general is beyond my intention, and, indeed, beyond my powers. All that I purpose to do, on the present occasion, is to offer some brief suggestions on a few articles which appear to me worthy of more attention than has been paid to them, and which seem to hold out the prospect of proving valuable therapeutic agents.

CARUM (PTYCHOTIS) AJOWAN.—The first of these to which I would direct attention is the fruit of *carum (ptychotis) ajowan*, D.C., an umbelliferous plant common under cultivation throughout India, sold in the bazaars under the name of ajwain or ajvain (Bengal) and o'mam or o'num (Tamil). Under the name of ajava-seeds, they were brought to the notice of the profession in Europe in 1773 by Dr. Percival (*Essays*, vol. ii, p. 226), but they fell into unmerited neglect. My own impression is that they are the most powerful of all the umbelliferous carminative seeds, and that they may well replace others in practice. Dr. G. Bidie and Mr. J. J. Wood, both of the Madras Medical Service, have borne strong testimony to their value; the latter regarding them as combining the stimulant quality of capsicum or mustard with the bitter property of chiretta and the antispasmodic virtues of asafoetida. An essential oil (of which they contain about 5 per cent.) and a distilled water, are official in the *Pharmacopœia of India*. Greatly increased interest attaches to this article from the recently discovered fact that its stearoptene, sold in the bazaars of the Deccan, Scinde, etc., under the Hindustani name of ajwain-ka-phail, is identical with thymol, whose claims as an antiseptic and germicide have of late attracted much attention. The fruit, indeed, is now a recognised source of this valuable antiseptic agent. Without attempting to enter upon its therapeutic uses generally, I would point out two diseases in which it seems very desirable that trials should be made to test its powers. 1. *Cholera*. Here Anglo-Indian testimony is already strongly in its favour, but we want more than public opinion; we want facts based on scientific observation, and it is hoped that this may be accorded to it by our professional brethren in the East. The antiseptic properties of its constituent, thymol, conjoined with its powerful diffusible stimulant action, indicate the probability of its proving of the greatest service in this disease. 2. *Dyspepsia*. All I desire here is to draw serious attention to the following words of the late Mr. J. J. Wood, with reference to ajvain or o'mam seed. "On account of its bitter, biting, or pungent, yet pleasant, taste, and the sensation of warmth it creates in the stomach, it has been constantly recommended of late years to those afflicted with the desire for alcoholic drinks. It does not, of course, intoxicate, but it is no mean substitute for the ordinary stimulant in removing, almost immediately, the sensation of 'gnaw-