BRITISH MEDICAL JOURNAL:

BEING THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

EDITED BY ANDREW WYNTER, M.D.

No. CLXXVI.]

LONDON: SATURDAY, MAY 12, 1860.

[NEW SERIES.]

Clinical Lectures

DELIVERED AT

UNIVERSITY COLLEGE HOSPITAL,

BY

JOHN ERICHSEN, Esq.,

PROFESSOR OF SURGERY AND OF CLINICAL SURGERY IN UNIVERSITY COLLEGE, ETC.

LECTURE V.

ON EXCISION OF THE HIP-JOINT.

GENTLEMEN,—There have been lately under your notice two cases illustrating in a marked manner the most interesting points of disease in the neighbourhood of the hip-joint. The first of these is that of a woman, aged 23, who was sent up to me by Mr. Barker of Smardon, for disease about the hip-joint, with the following history. She is delicate: both her parents and one brother died of consumption. During early childhood, she had an abscess near the right hip, which healed up after some months, and gave no further trouble, and left no difficulty in moving the thigh. In addition to this, there was also during childhood disease of the lower end of the tibia, the position of which is now marked by a cicatrix. About six months ago, after a fall in which she struck the right hip, the part became swollen and painful, the old cicatrix opened, and matter escaped. The aperture has continued to discharge up to the present time. On admission, the movements of the joint, though limited, were found to be perfect, and gave rise to no pain except what was due to the state of the soft parts around. The limb is in its natural position; but the patient cannot walk or even bear upon it, on account of a feeling of weakness in it. There is a quarter of an inch of shortening; but this is between the knee and ankle, and is evidently due to the disease of the lower epiphysis of the tibia in childhood, and not to the state of the hip. Nearly opposite the insertion of the tensor vaginæ femoris muscle, there is a sinus which discharges a considerable quantity of thin pus. A probe passed along this strikes and passes deeply into carious bone, apparently situated in the trochanter; whilst behind that process is a cavity containing pus, in which the probe turns freely, and runs up beneath the gluteal muscles to some distance.

The diagnosis that we made in this case was, that the trochanter and trochanteric end of the neck of the femur were in a state of caries; that the joint itself was not involved; but that the diseased bone was in such close proximity to it that, unless this could be removed by operation, the articulation would speedily become implicated, and be hopelessly destroyed; that, in fact, the case was not one of "hip-disease" properly speaking, but of caries of the upper epiphysis of the femur, which would speedily go on to that disease; and that the only chance of saving the joint was by timely removal of the diseased bone.

The diagnosis in this case was rendered clear by the fact that the movements of the joint, though limited, were not seriously affected; and that shortening and adduction of the limb were not present; the slight difference of length of the legs being due to the disease of the ankle in childhood on that side.

In accordance with the diagnosis that I formed of the nature of the case, I operated on February 22nd. Making an incision about four inches in length over the trochanter, and slitting

up the sinus that led to the carious bone, I removed, by means of the gouge, cutting pliers, and osteotrite, the greater part, if not the whole, of the great trochanter, and cleared out a carious cavity in the root of the neck of the femur. The patient has since made a good recovery, and has now left the hospital.

Now here is a case which illustrates well the advantages to be derived from conservative surgery. Here you have a carious state of the bones in the closest possible proximity to a large joint, which would infallibly have become incurably involved had the disease been left to run its course, but which was fortunately saved by the excision of the morbid osseous structures.

Besides this case, there has lately been in the wards a child from whom I excised the head of the femur about three years ago, when he was in a very advanced stage of hip-joint disease. This lad has made a very good recovery, being able to walk very well—not, however, putting the whole of the foot to the ground, but having very great power of moving the hip-joint; the opposing surfaces of bone being, no doubt, united by firm fibrous tissue, as happens in these cases. I had an opportunity of observing this a short time ago by *post mortem* examination, in a case of a lad the head of whose femur had been excised. The lad recovered from the operation, but died of another disease some months afterwards. In this case, the upper end of the shaft of the femur was joined to the acetabulum (which had lost much of its cup-like shape) by firm fibrous bands.

Under the term "coxalgia" a great variety of diseases of the bones in the vicinity of the hip-joint are included. And perhaps the advance of conservative surgery has produced no greater improvement in the treatment of disease than by inducing surgeons to make a more careful and exact diagnosis in cases of hip-joint disease than was formerly the case, when no distinction was drawn between the varieties depending on the tissues affected. Now surgeons are, for the purposes of operation, in the habit of diagnosing between cases of disease affecting the soft parts only or the bones only; and further, of distinguishing which bone is primarily or principally attacked.

Varieties. Under the one term "hip-joint disease" are included several forms, commencing in one or other of three primary pathological conditions.

First, in the *arthritic* form, the soft structures—viz., the ligaments, the synovial membranes, cartilages, etc.—are alone primarily affected, usually with acute inflammation, presenting the symptoms of arthritis elsewhere, the disease usually continuing limited to these structures throughout. Its course frequently tends to abscess. Sometimes, however, the joint recovers without suppuration, but with more or less stiffness, or even complete ankylosis by fibrous adhesions of the opposing surfaces.

The second form—the *femoral*—is that in which the morbid action commences in the upper epiphysis of the femur. The progress of this variety of coxalgia is very insidious; its symptoms are by no means prominent; it generally occurs in young children, and is usually, I believe, of tubercular origin. In it you find the yellow, somewhat soft, friable matter filling up the cancelli of the head and neck of the femur, resembling, and indeed being identical with, tubercular deposit in other organs. This form of coxalgia is accompanied inevitably by the formation of abscess in the soft parts around the joint, commonly on the outside of the thigh, and in the gluteal region; and destruction eventually of the articular surfaces, with caries of the head of the bone, followed by its displacement, and leading to shortening and distortion of the limb, terminating very generally in the death of the patient from exhaustion and hectic.

The third form is the *acetabular*. Here the disease originates in the pelvic bones. When this, the pelvic aspect of the joint, is the part first affected, abscess invariably forms, sometimes inside the bone, in the pelvic cavity, but occasionally

presents externally among the muscles, and points most commonly near the pubes, above Poupart's ligament. In these cases, dislocation, though it is met with now and then, rarely takes place. Sometimes, however, the destruction of the acetabulum is so extensive that the head of the femur penetrates it, and passes into the pelvic cavity. Dislocation is most frequent when the disease has arisen in and has destroyed the head of the femur; so that the head being no longer present, no impediment is offered to the action of the muscles around the joint, and the bone at length slips from its position in the cavity of the acetabulum.

It is on that form of disease of the hip-joint which originates in, and is chiefly confined to, the head and neck of the femur, and to the root of the great trochanter, that conservative surgery has most influence. It is, therefore, of great importance to be able to diagnose this form from the other two.

Distinctive Characters of the Three Forms of Hip-Disease. Now, before any question of operating can be entertained, and in only the worst forms and most advanced cases of hip-joint disease can such question be discussed, it is necessary to ascertain to which of the three forms of disease does the case under consideration belong—whether, in other words, it be *acetabular*, and, if so, what is the exact state of the pelvic bones, and which are affected; or *femoral*, and how far the destruction of the head and neck of the femur has proceeded; or whether it be *arthritic*, when operation is seldom allowable.

The determination of this question, which is by no means always easy or even possible, is often much facilitated when we are enabled to watch the case, or have a clear history of its progress previous to any examination. But when we have to deal with an advanced case, of which the account is not clear, and the patient, especially if he be a child, possibly unable to give a succinct history, we may generally, by attention to the following points, arrive at a pretty accurate opinion of the precise extent and seat of the osseous disease. In doing this, the points to be attended to are three in number: 1. The absence or presence of *dislocation*; 2. The existence, position, and extent of *sinuses*; 3. The condition of exposed bone at the bottom of sinuses, as the pelvic bones usually undergo necrosis, not caries; the contrary being the case with the femur. It is by attention to these points that we may generally arrive at a pretty accurate diagnosis as to the precise state of the hip.

1. *Dislocation.* In the arthritic form, this rarely occurs. Anchylosis, fibrous generally, now and then osseous, is the usual termination.

In the acetabular form, also, it is an infrequent result, the head of the femur usually remaining unabsorbed; and, though the cartilaginous surfaces disappear, the bone remains in its cavity.

But in the femoral variety dislocation is common, the head of the femur being generally disintegrated; that is, the cancellous structure becomes soft, carious, and breaks up into small fragments, which gradually come away in the discharge; and the ligaments being at the same time destroyed, the remainder of the upper end of the bone slips out of the socket, and lies on the dorsum of the ilium, being dislocated backwards and upwards. The limb is thus shortened to the extent of two or three inches, adducted, and crossed in front of the other, its abduction being impossible. This is the usual course in the femoral variety of hip-joint disease.

2. *Sinuses.* An attentive examination of the position and direction of these is of great importance in forming an opinion as to the seat of the osseous disease. By passing down them a long probe, we may often ascertain the nature and position of the osseous mischief; but still the amount may be concealed by the fact that sound bone may intervene between the surface and the diseased bone, as when the inner aspect of the great trochanter is affected, or sometimes the diseased or dead bone is covered in by a thick deposit of dense plastic matter, and so the real extent of the mischief in the bone remain obscure.

Situation of Sinuses. There are three situations in which sinuses are met with, which vary according to their point of origin from the abscess, and the position of the diseased bone: hence it is of importance to note their site and direction. 1. When the sinus opens two or three inches below and a little in front of the great trochanter, about the insertion of the tensor vaginæ femoris muscle, the disease is almost invariably *femoral* in its origin. 2. When in the gluteal region, the sinus may indicate *femoral*, but not unfrequently is dependent on pelvic disease; the acetabulum, or a portion of the dorsum

ili, being the part involved. 3. The sinus may open in the pubic region, either above or below Poupart's ligament. A sinus in this situation is almost certainly diagnostic of disease of the pelvic bones, especially the pubic aspect of the acetabulum. When it appears *above* the ligament, it probably leads to intrapelvic abscess. On the other hand, when the abscess opens *below* Poupart's ligament, there is generally disease of the rami of the pubes or ischium.

The situation of the sinuses, as well as their direction, will thus be found to lead the surgeon to a more accurate diagnosis of the seat and extent of the osseous disease than he could otherwise form. And, indeed, it is only by attention to these circumstances that he is enabled in many cases to form an approximative opinion on these points; for the diseased bone is often so covered in by healthy osseous structure, and by plastic matter, that the probe cannot touch it; or the sinus may be so tortuous that a straight probe cannot follow its sinuosities.

3. But there is other important information obtainable from an attentive consideration of the situation of the sinuses. It is with reference to the probable nature of the osseous disease. In *femoral* coxalgia, this is almost invariably caries: hence those sinuses that indicate the existence of primary disease of the upper epiphysis of the femur prove this to be of a carious nature; whilst, on the other hand, sinuses occurring in the pubic region and by Poupart's ligament are almost invariably dependent on the presence of necrosed bone; necrosis being the form of disease that affects the acetabulum and pelvic bones.

Cases requiring Operation. Diseases of the hip-joint may, so far as the question of operation is concerned, be divided into two great classes—those in which no suppuration takes place, however acute the inflammation may have been; and those in which abscess forms.

To the first class belongs the *arthritic* variety of the disease. In this form of coxalgia, the patient commonly recovers with a stiffened or even completely ankylosed, though useful and straight limb. In such cases, I believe that excision is never needed; at least, I have never had occasion to do it, nor have I ever seen a case that seemed to me to justify such a procedure.

The second class of cases—those in which abscess forms—are by far the most numerous. In the great majority of these, however, recovery will take place eventually, under properly conducted medico-surgical treatment. But the recovery in such cases is always so far incomplete that the limb is left much crippled, and often of but little utility. In such cases as these, after years of suffering and of confinement to bed, and after a hard struggle for existence, we find the unfortunate patient left eventually with a limb that is shortened to the extent of from two to four inches, wasted and adducted, with a projecting deformed hip seamed with cicatrices; the remains of the upper epiphysis of the femur being dislocated from the acetabulum, and adherent to the dorsum ili by firm ankylosis. The limb is unable to support the body, and cannot be extended or the sole of the foot firmly planted on the ground; but it is to a certain extent useful in progression, the patient using it as a kind of paddle to push himself on with, as he limps on the point of the toes. In these cases, it is interesting to observe how Nature compensates for the loss of all abduction and rotary power in the hip by giving an extremely increased degree of mobility to the lumbar vertebrae, so that the patient, in walking, swings the pelvis from these, and thus in a great degree makes up for the loss of the natural movements in the coxo-femoral articulation.

But, though recovery takes place eventually in the great majority of cases of coxalgia that have advanced to suppuration, yet in some, and not a few instances, the patient's constitution becomes unequal to the drain imposed upon it, and fatal hectic will eventually supervene. This fatal result is the direct consequence of the wasting and exhausting influence of the long continued discharge of pus from masses of carious or necrosed bone too extensive or too deeply seated to be eliminated by the natural actions of the part. It is in such cases as these that conservative surgery steps in, and endeavours to save the patient's life by the removal of the morbid cause that keeps up the discharge which is wasting it away. The object here is simply to save life by the removal of diseased bone. For the same reason—the preservation of life from hectic—that the surgeon amputates in an extreme case of suppurating disorganisation of the knee-joint, he excises in an extreme case of disorganisation of the osseous structures that enter into the formation of the hip-joint, amputation being

here too formidable a proceeding to be undertaken; and yet the removal of the diseased bone, the irritation and suppuration from which is rapidly destroying the patient, being an imperative necessity.

The *femoral coxalgia* is that form of the disease that is most amenable to operation. In severe and extreme cases of this variety of hip-joint disease, the upper epiphysis of the femur will be found lying in a state of caries on the *dorsum ilii*, in a suppurating cavity, with sinuses leading down to it. The pelvic bones are sound; the acetabulum filled by fibroplastic matter of a reparative character, though possibly slightly roughened and necrosed at one lip. The soft structures in the gluteal region are thinned and wasted, the limb inevitably shortened and adducted. In such cases as these, the patient will probably perish, if left to the unaided efforts of nature; or if he recover, after years of suffering, it will be with a limb shortened, deformed, and but little useful. Whilst resection, being limited to the upper end of the femur, or at most to the roughened lip of the acetabulum, as well, is an easy operation, removes the cause of the wasting discharges and hectic, and in no way increases the already existing shortening, as it is limited to that portion of diseased bone which is already lying above and behind the acetabulum, and which, being carious, must disintegrate and crumble away in the discharges before a natural cure without operation could take place.

In the *acetabular* form of coxalgia, the ultimate result is, I believe, inevitably fatal, if the disease is allowed to run its own course unchecked by operation. Large portions of the pelvic bones in and around the acetabulum fall into a state of necrosis; that cavity becomes perforated; and the head of the femur, still lying in it, becomes denuded of its cartilaginous investment, roughened, and carious, as is well seen in the annexed drawing, taken from a patient of mine who died of this form of the disease. Large abscesses, intra- as well as extra-pelvic, form, and the patient dies worn out by hectic, the natural efforts of the part being entirely unavailing to separate and to eliminate such large masses of necrosed bone, deeply lying, and covered in as they are by the upper end of the femur.

Until a very recent period, surgeons feared to undertake the removal of large necrosed portions of the pelvic bones, and acetabular disease of the hip-joint was accordingly allowed to run its fatal course unchecked. Mr. Hancock was the first surgeon who undertook the removal of large portions of these bones, and since then the operation has been done several times by others. In no case has, I believe, more extensive disease been removed with a good result than in a girl of the name of Fallowfield, who was sent to me three years ago by my friend Mr. Tweed, and from whom I removed the upper end of the femur, the acetabulum, the ramus of the pubes and of the ischium, a portion of the tuber ischii, and part of the *dorsum ilii*. This patient, when admitted, was in the last stage of disease, exhausted by the constant discharge, and must inevitably have speedily sunk under the effects of the disease, had no effort been made to remove the cause of the

prostration. At the operation, she was so exhausted that it was necessary to have her on the operating-table for some hours before she was sufficiently restored to bear moving into bed. Nevertheless, by free use of stimulants and nourishing food, she made a rapid recovery; and a few months ago, when I last saw her, the limb presented the appearance in this drawing: it was straight, shortened about two inches; good movement existed at the hip; and she could walk with much ease. Constitutionally, she was in perfect health. In cases such as this, the result, if they are left to themselves, must inevitably be fatal. There is no danger of laying open the pelvic cavity during the removal of these masses of pelvic bone; for, as Mr. Hancock has shown, during the progress of the disease, the fasciæ, muscles, etc., lining the pelvis, become so thickened and infiltrated with plastic matter, that they form an effectual barrier which protects the pelvic cavity.

Method of Operating. The patient lies on the sound side. If the disease is femoral, the gluteal region perforated with sinuses, and the soft parts thinned, the head of the bone lying dislocated on to the *dorsum ilii*, it suffices to pass a director down one of the chief sinuses leading to the carious bone, and to slit this up. If, however, the bone be more thickly covered, and is not easily reached with the probe, and if the sinuses open on the thigh at some considerable distance from the seat of disease, then a T-shaped incision should be made over the upper end of the femur, so as to expose it. The limb should now be forcibly adducted, rotated inwards and pushed upwards by an assistant, the soft structures separated by a probe-pointed knife from around the upper end of the bone, so that the whole amount of disease may come into view. The carious epiphysis is then cut off with a saw, the soft parts around being protected, if necessary, by means of retractors.

There is one practical question with regard to the amount of the upper end of the femur to be removed, which requires consideration; and that is, Should the bone be sawed through below the great trochanter; or through the neck only, leaving the trochanter? The practice should, I think, differ according to the nature of the disease. If this is femoral, it is best to take away the great trochanter, as the caries has generally reached its cancellous structure, or it may be infiltrated with tubercle. But if the disease be acetabular, it will suffice to remove the head only, leaving the trochanter, which is not affected in these cases. After removing the head of the femur, the upper end should be examined, and any carious parts gouged out. After the epiphysis of the femur has been removed, the acetabulum must be examined, and any rough or necrosed bone lying at its edge should be gouged away.

In the acetabular form of the disease, the early stages of the operation require to be conducted in the way just described;

the incisions, however, being made more freely, but not carried so far forwards as to endanger the anterior crural, or so far back as to wound the sciatic nerve. After the removal of the head of the femur, all loose pieces of necrosed bone are to be taken out, and then, by means of ordinary cutting or gouge forceps, the acetabulum and other diseased osseous structures cut away piecemeal. In doing this, it will be found that the necrosed bone readily separates by means of the finger, or by the handle of a scalpel, from the subjacent soft structures; and the muscles and fasciæ lining the pelvic bones, being thickened and infiltrated with lymph, effectually protect the contained parts from all injury.

The result of excision of the hip-joint has to be considered from two points of view: 1. So far as the mortality immediately referable to the operation is concerned; and 2. As to the utility of the limb that is left after its performance.

1. As to the fatality directly referable to the operation itself. On this point it is difficult to speak with absolute accuracy at present, the statistics of all the operations not being before the profession; but, so far as my own experience is concerned, it is as follows. I have operated in seven cases. Of these, not one has proved fatal; three are now well and going about; two I have lost sight of, after their recovery and discharge from hospital; and two have died, one eleven months and the other two years after the operation, from constitutional disease unconnected with it. When we consider that all these cases were instances of advanced femoral or acetabular coxalgia, which would speedily have proved fatal if not subjected to operation, we may with justice look upon them as successful so far as the preservation of life was concerned. And, in this respect, excision of the head of the femur, or of the hip-joint, stands in a different position to similar operations practised on other joints. The surgeon excises the elbow, shoulder, or ankle, in order to restore a useful limb to the patient. Excision of these joints is a substitute for the loss of the limb by amputation—not, as in the case of the hip, for the loss of the life of the patient by continuance of hectic.

2. As to the utility of the limb left after excision of the head of the femur or the hip-joint. In estimating the utility of the limb left after excision of the hip-joint, we must compare it with the kind of member that would be left in the event of the patient surviving sufficiently long for a natural cure to result. It would be manifestly absurd to compare a limb which had become seriously crippled, diseased, and shortened, before any operation was undertaken, with one in which no morbid action had ever taken place. So also would it be unjust to compare it with the state of a limb left after a slight attack of coxalgia in which operation could never have become necessary or been contemplated. But, on comparing the result of operated cases with that of those which recover spontaneously, after caries and destructive disintegration of the upper epiphysis of the femur has existed for years, we shall find that the balance is by no means against those in which excision has been done. As I do not consider the operation necessary in cases of *arthritic* coxalgia, I do not compare the result of these cases with that of those operated on, but confine myself entirely to those in which there has been destructive bone-disease. In such cases as these, when, after years of prolonged suffering, recovery is at last accomplished by natural means, what is the condition of the limb that is left? Why, more or less completely ankylosed at the hip, wasted, shortened to the extent of two or three inches, partially flexed upon the pelvis, adducted, with the knee possibly stiffened, semiflexed and advanced, the patient just able to put the toes to the ground, without the power of bearing upon or rotating the limb; but when he wishes to turn, twisting the whole pelvis by the aid of the greatly increased mobility of the lumbar spine.

After successful excision, the result is much more satisfactory, as may be seen by the accompanying drawing, or as you had an opportunity of witnessing in the boy on whom I had operated three years ago. The principal morbid appearance in the limb is its shortening to the extent usually of from two to three inches—to the extent, indeed, to which the preexisting disorganisation and dislocation of the head of the bone had previously reduced it. It is well nourished, straight, firm, and admits of easy and rapid progression. The ankylosis is fibrous, not osseous. The patient is then enabled to flex the thigh on the pelvis, and to adduct it; but, just as in cases that have undergone a natural cure, the power of external rotation and of abduction are lost, the mobility of the lumbar spine compensating for the loss of these movements.

Lectures ON THE HISTORY OF MEDICINE.

DELIVERED AT
THE GROSVENOR PLACE SCHOOL OF MEDICINE.

BY
ALEXANDER HENRY, M.D.

LECTURE III.

Circumstances favouring the Development of Philosophy among the Greeks. Character of early Grecian Philosophy. Pythagoras. Alcmaeon. Empedocles. Anaxagoras. Democritus. Heraclitus. Public Practice of Medicine: its origin. Dispersion of the Crotona School. Democedes. Acron. Public Gymnasia: their influence on Medicine. Herodicius. Iccus. Summary.

In the last lecture, I gave a sketch of the practice of medicine as it is handed down to us as having been followed in the temples of Æsculapius. I shewed that it ostensibly consisted in an appeal to the superstitious feelings of the people; and that the priests of the temples jealously retained all knowledge relating to the cure of disease within their own order. At the same time, I alluded to the fact, that it was a common custom to preserve records of the histories of the patients who had been under treatment; and I also mentioned that certain of the temples were especially distinguished by the attention which their priests paid to the study of disease, and that in them—especially in one of them—was laid the solid foundation of our system of medicine.

We now arrive at a period which is characterised by a remarkable change in the aspect of our science. After a period of some hundreds of years, in which medicine remained a mystic art, there appears a family of Asclepiads, who interweave with their own knowledge the learning which surrounds them in the external world, and at last give to the world a collection of treatises, containing a mass of medical knowledge which has in all ages called forth the admiration, not only of the profession, but of the general historian. The doctrines and precepts taught in these treatises, which we commonly know as the works of Hippocrates, call for our careful and impartial examination; but, before entering on this, it is necessary that I should bring before your notice the circumstances which led to their appearance, and to the advanced development of our science which is manifested in them, and comment on the causes which produced so great and salutary a revolution in the history of medicine.

So great an impulse could not well have been given to the progress of a science in any other country, at the time of which I am speaking, than in Greece. For the inhabitants of these other regions whose history has reached us were, in regard to knowledge, in a state of abject subservience to the teachings of their priests, from which their inactive mental constitution did not aid them to escape. Every phenomenon of nature, and every deviation from her ordinary course, were by the mass of the people regarded as the immediate effect of divine interference; and any inquiry into the causes of things was considered useless and superfluous, if not positively impious. We can well imagine the argument to have been applied, if occasion offered, to the study of the philosophy of nature, which is reported to have been used by the Caliph Omar, when asked in what way the Alexandrian library should be disposed of: "If the contents of the books agree with the writings of the Prophet, they are superfluous; if they contain anything contrary, they are impious."

In Greece, however, thought was free and active; indeed, what error there was lay rather in the opposite direction to that of other nations: for thought—that is to say, speculative philosophy—was often allowed to outstrip fact. But what is important is, that thought was not altogether fettered; and that popular prejudices, religious opinions, and social institutions, did not assign absolute limits beyond which the human intellect was not permitted to pass. The active Grecian mind, thus free to exercise itself, threw off all restraint; and the philosophers of that country arrived at the point which one might