

tions, and at the same time making pressure upon the head of the bone and the acetabulum by crowding the articular surfaces together.

In addition, pressure should be made upon the great trochanter in order to bring the head of the femur and acetabulum in contact from that direction.

Again, holding the knee with one hand and fixing the pelvis with the other, press the thigh-bone upward. This manœuvre generally causes pain, which can be detected in the patient's face, even when he denies he feels it. If the manœuvre *does* cause pain, then observe whether or not extension relieves it. To make your examination doubly sure, if tenderness has not already been detected, sweep with the thigh its largest possible circle, by which means the head of the bone cannot possibly escape being brought in contact with every part of the acetabulum.

Pain may or may not be experienced during the *first* stage, independent of motion or pressure upon the joint surfaces.

In those cases where the disease manifests itself immediately after the injury—which cases are probably either synovitis or periostitis of the great trochanter—the pain is also immediate and constant, and frequently excruciating.

In other cases, when probably the seat of the disease is in the articular lamella—either beneath the articular cartilage of the head of the bone or the acetabulum—pain is developed late in the first, or even not until the second stage.

This pain may be referred more or less definitely to the hip-joint and its surrounding tissues, or it may be so entirely located in the knee as sometimes to completely mislead the surgeon in his diagnosis. I have many times seen the knee blistered and treated for months, when there was no disease whatever at that joint, it being merely affected by the disease in the hip.

Mr. Barwell explains the knee-pain as follows: It is produced (1) by direct irritation of the nerves passing in close contiguity to the joint. These are the obturator nerves, the sciatic, the gluteal, and perhaps the anterior crural. It is produced (2) in consequence of an obscure sympathy between the two ends of the bone, or even direct propagation of the inflammation from one to the other; and (3) by spasm of certain muscles.

Such, gentlemen, are the symptoms by which you are to recognize hip-joint disease in the *first* stage.

No one of them is entirely diagnostic. The certainty of the diagnosis depends upon a careful consideration of *all* the symptoms described.

We have thus dwelt upon them at some length, because many of them differ from those of more advanced stages only in degree, consequently require only one description; but more especially because it is in this stage that the diagnosis is most difficult and important. In the later stages, it is almost impossible not to recognize the disease, but the patient has then endured great suffering, and perhaps irreparable mischief may have resulted, which might have been easily *prevented* had the true nature of the disease been early recognized and properly treated.

LECTURE XX.

DISEASES OF THE JOINTS.—MORBUS COXARIUS (CONTINUED).

Symptoms (continued).—Symptoms of the Second Stage and their Explanation.—Case.—Symptoms of the Third Stage.—Discussion of the Question of Dislocation in this Stage.

GENTLEMEN: To-day we will continue the history of hip-disease by first studying the symptoms of the *second* stage.

The symptoms described at our last lecture as belonging to the first stage—namely, pain, tenderness, swelling, atrophy, and limited motion—continue into the second stage of the disease, but are generally increased in severity.

The peculiar position of the limb gives to the second stage of the disease the name “apparent lengthening,” but I prefer to designate it as the stage of effusion.

If you examine the patient while in the standing position, as in our previous examination (*see* Fig. 148), it will be noticed that the foot is now *everted*, and the leg is a little more flexed upon the thigh, the thigh is a little more flexed upon the trunk, the obliteration of the gluteo-femoral crease a little more marked, and the entire limb more markedly abducted.

The foot upon the affected side is somewhat in advance of the

one upon the sound side, and the weight of the body of course is thrown upon the latter, as seen in Fig. 152. It is this tilting of the pelvis that produces the apparent lengthening of the limb. By careful measurement, however, it has been shown that no lengthening whatever is present; but on the contrary, by reason



FIG. 152.

of the change of the relation of the anterior superior spine of the ilium to the femur, the distance from the former joint to the malleolus is slightly diminished.

Why, then, does the limb assume this peculiar position? It does so for the purpose of accommodating the effusion which has taken place within the capsule of the joint, and the deformity produced is explained in the following manner:

If you will refer to the anatomy of the hip-joint (Fig. 141), it will be noticed that the ilio-femoral ligament, extending from the anterior inferior spinous process of the ilium to the trochanter minor, lies in front of and is firmly united to the capsule, from above downward, forward, and inward, in such a manner as to cause it to remain in close contact with the bone. There is nor-

mally a very small quantity of fluid within the capsule, and you cannot increase that amount without also increasing the capacity of the capsule, which is done by *unfolding* it, and that can only be accomplished by abducting and flexing the thigh, and rotating it outward. That is exactly what occurs when the joint is inflamed and effusion takes place; the capsule is unfolded and its capacity is thus increased, simply to accommodate the fluid effused within it, and that necessarily gives rise to distortion of the limb. This is the reason why the limb is always slightly flexed, abducted, and rotated outward. If the effusion becomes very great, the limb is more flexed, more abducted, and more rotated outward, and at the same time more fixed. The limb may be so rigid as to be apparently ankylosed, but it is only an apparent ankylosis, and simply depends upon a distention of the capsule and rigid muscular contraction.

That the mere presence of liquid in the perfectly closed joint is capable of producing such immobility and distortion is clearly demonstrated—1. By the experiments of Prof. E. W. Weber, who injected the hip-joint through an opening in the pubic bone. By this procedure he invariably produced *eversion*, *flexion*, and *abduction* of the thigh, and *immobility* of the joint. The latter was so complete and unalterable that an attempt to overcome it either burst the capsular ligament or drove the stopper out from the artificial opening like a pellet from a popgun; 2. By puncture of joints greatly distended with fluid, in which immobility and this peculiar distortion are both present, mobility and the proper position of the limb are at once restored. It should, however, be borne in mind that these symptoms, eversion, abduction, and immobility, may sometimes be continued after the capsule has been ruptured. Then they depend upon the altered condition of the capsule and surrounding parts, for these have become thickened and adherent to each other, consequently more or less unyielding, and necessarily retain the parts in their malposition.

The characteristic symptoms, then, being due directly to the presence of liquid, synovia, pus, or lymph, within the capsule of the joint, the second stage is properly called the *stage of effusion*. The pain in this stage is much greater than in the first, and is aggravated by the inability of the capsule to perfectly accommodate itself to the increased amount of effusion.

If you will seize the knee of one of these patients in the sec-

ond stage of hip-disease, who is suffering indescribable pain, and make slight extension *in the line of the deformity*, and, at the same time, slightly *evert* the limb, you will give almost instant relief, simply because you assist in accommodating the capacity of the capsule to the amount of the effusion. If the limb is abducted or extended in the line of the deformity *without* the eversion, the slightest degree of adduction will cause pain at once; but, when *everted*, it may be abducted to a trifling extent without causing pain.

But why does not the joint fully accommodate itself to the increased effusion within it, and how do we account for the great pain in this stage? It is because there is a constant struggle going on between the adductor muscles of the limb and the over-distended capsule. The adductors are excited to constant contractions by the irritation communicated to them by the articular branch of the obturator nerve, which immediately supplies the joint. The action of these muscles, however, is resisted by the abduction and eversion of the limb, caused by over-distention of the capsule. The limb cannot yield to the traction of the adductors; neither can the joint perfectly accommodate itself to the increased effusion, and this constant struggle causes the intense pain which is referred to the point of distribution of the nerves involved. It occurs nearly always at night. The child becomes completely tired out, drops off to sleep for a minute or two, the muscles lose their hold upon the limb, the limb falls, causing movements at the diseased joint, and *instantly* there is a spasmodic contraction of the muscles which brings the diseased surfaces together with a snap, and the child immediately awakes with a shriek. The mother or nurse hastens to the bedside; but, perhaps, before it can be reached, the child has dropped off to sleep again, and this is repeated over and over.

You can hardly appreciate this fact, unless you live in the hospital, or stay for several nights in a house where there is a child suffering from disease of the hip-joint in this stage.

This pain, moreover, is self-perpetuating, for the irritation of the diseased joint causes the muscular contractions, and these, in turn, aggravate the inflammation and destructive changes within the joint, by constant pressure.

The continued contraction of the adductors very frequently renders them hard, thin, wiry, under the finger, and able to

resist any attempt to move the limb from its position. Sometimes positive *contracture* takes place, and then subcutaneous section must precede any attempt at extension, as the following case illustrates:

CASE.—Sabina D., aged six, was brought to Bellevue Hospital in January, 1863. She was a well-formed child, and had always been perfectly healthy until August, 1861. Her mother states that she fell from the table, striking upon her right hip, which caused her considerable pain at the time; in a few days she resumed her play as if nothing had occurred. This continued until early in October, over two months from the receipt of the injury, when she was attacked with a severe pain in her knee, with a noticeable limp in her walk. The mother thinks she limped for some days before she complained of the pain. The pain was much more violent at night, the child frequently awakening her parents by her sharp screams. She was taken to St. Luke's Hospital, where she remained more than two months, extension being kept up during the whole time by weight and pulley without any benefit; on the contrary, all her symptoms were aggravated.

She was admitted to Bellevue Hospital, January, 1863, as before mentioned, when the following notes, as recorded by the house-surgeon, Dr. W. F. Peck, were taken: "Right foot, when she stands erect, is four and a half inches from the floor, and very much adducted; the leg is flexed upon the thigh slightly, and the thigh upon the pelvis. (See Fig. 153.) When the slightest motion of the femur is attempted, the pelvis moves with it, as though bony ankylosis existed; constant pain at the hip-joint, which is increased by pressure; leg atrophied. Extension was applied for a few days, but the pain was so great, and no improvement in position following it, that Dr. Sayre subcutaneously divided the *gracilis* and *adductor longus* muscles. The wounds were immediately covered, and moderate extension applied to the limb. When comparing the length of the two legs, the diseased one was found nearly an inch shorter than its fellow.

"January 30th.—The extension now gives her perfect relief from pain. Before the operation, it was torture when the extension was continuously applied. She eats and sleeps well.

"February 2d.—Wound made by the tenotomy perfectly

healed. As long as extension is kept up, she feels no pain. Appetite and digestion perfect.

"16th.—Sayre's short hip-splint was applied this afternoon, when she walked without difficulty.

"April 4th.—Patient was brought to hospital to-day, to have her dressings reapplied, as they had not been moved since she



FIG. 153.



FIG. 154.

left the hospital. Improvement most marked; instead of the peevish, irritable disposition she manifested when first admitted, she is now cheerful and happy, and the glow of health is upon her cheeks. Her mother states that she has not complained of pain since she left the hospital. Her present condition can be seen in Fig. 154, taken from a photograph."

The immobility which is present in the second stage, resulting from over-distention of the capsule and muscular rigidity, is usually well marked. The muscular contraction, however, is reflex in character, and is *for the purpose of keeping the joint perfectly still*. There is *apparent* ankylosis, but it is only apparent.

Motion is much more painful than rest, even when rest is accompanied by pressure produced by muscular contraction. Hence the patient, naturally choosing the least of two evils, obtains

rest of the part by means of this muscular rigidity, although it is done at the expense of absorbing the tissues by pressure, and at the same time gives rise to hectic and exhaustion.

The flexor muscles of the thigh, the pectineus, the tensor vaginae femoris, and the rectus femoris, are so firmly contracted that the whole pelvis moves upon the opposite acetabulum; in short, the ilium of the opposite side may be distinctly seen to move when any attempt is made to rotate, adduct, or abduct the diseased limb. Even under chloroform, this motion takes place unless *firm extension* is made before the trial is begun, as I have seen in several instances, and even then the motion is only very limited.

Let us next study the symptoms of the *third* stage.

If the disease is not arrested, the acetabulum becomes perforated, or ulceration and *rupture* of the capsule take place, and the imprisoned fluid escapes into the surrounding tissues. When this has occurred, the disease is in the third stage, and the patient is comparatively free from pain. In the majority of instances the effusion soon burrows in various directions, and finally produces one or more openings upon some portion of the thigh, and in some instances at some distance from the affected joint.

It is often thought that a great deal has been gained because the patient is so much more comfortable, after rupture or perforation has taken place, whereas the disease has only gone on to the third stage, in which effusion takes place into the surrounding tissues instead of being retained in a closed sac around the joint.

Almost immediately, however, there is a marked change in the character of the deformity. The limb is now adducted, inverted, and flexed, very often at the hip only. The pelvis is raised upon the affected side, which brings the corresponding natis above that of the sound side, causing it to project backward, and now the gluteo-femoral fold is higher than upon the sound side or obliterated altogether. The position of the limb, as you see, is in most respects the reverse of that seen in the second stage (*see* Fig. 155).

The change in position is due to the fact that the fluid contained in the cavity of the joint has been evacuated. The distention of the capsule, which was the mechanical cause of the

eversion and abduction of the limb, having been relieved, nothing now obstructs the full action of the adductors, and the limb is therefore adducted and *inverted*. The equilibrium of the body is preserved by raising the pelvis so as to bring the centre of gravity over the sound foot. The loss of substance in the head of the femur and the acetabulum accounts for the actual shortening that occurs, and the tilting of the pelvis makes it appear even



Fig. 155.

greater than it is. Since the foot of the affected side no longer touches the ground, the flexion of the knee is unnecessary, and therefore often disappears.

This change from the second to the third stage is *sudden* when there are no adhesions in the surrounding tissues (as already indicated), and when the opening in the capsule is large and allows of the rapid and total escape of its contents into the surrounding tissues. But if the rupture is very small, perhaps fissure-like, the fluid oozes out by slow degrees, consequently the change in the deformity will take place slowly.

I have seen the change take place in a single night, while in

other cases it may require weeks for its completion. There are extreme cases in which this change does not take place at all, although the effusion has escaped from the joint. Those are the cases in which the head of the bone has broken through the acetabulum, and is held firmly in the opening, or those in which inflammatory adhesions, osteophytes, etc., have taken place between the bones comprising the joint, holding it in its false position even after the capsule is ruptured.

For convenience of reference the symptoms of the *second* and *third* stages of hip-disease are placed side by side below (Bauer).

<i>Second Stage.</i>	<i>Third Stage.</i>
Limb (apparently) longer.	Limb shorter.
“ abducted.	“ adducted.
“ everted.	“ inverted.
“ flexed in both joints.	“ flexed in hip-joint only; may be flexed at knee-joint also, but not necessarily.
Foot touches the ground with sole.	Foot touches with ball only.
Toes everted as in fracture of neck.	Toes inverted as in posterior superior luxation.
Pelvis lowered on diseased side.	Pelvis raised.
“ projected forward.	“ projected backward.
“ angle of inclination acute.	“ angle of inclination almost right.
Natis low and flat.	Natis high and round.
Linea inter nates inclined toward affected side.	Linea inter nates deviates from affected side.
Pain most intense.	Pain greatly diminished.

It was long believed that this change of symptoms was due to a real dislocation of the head of the femur upon the dorsum of the ilium, brought about by the gradual destruction of the upper rim of the acetabulum by caries, thus allowing the head of the bone to escape from the socket.

The first to challenge this theory was the late Dr. Alden March, of Albany, New York.

In his paper upon this subject read before the American Medical Association, and published in their “Transactions” for the year 1853, he established the fact that dislocation does not really take place.

Dr. March said: “It has been my privilege to examine the specimens of this disease in the London University Hospital Mu-

seum, where Mr. Bell's morbid specimens are deposited, and yet I could discover no preparation of "hip-disease" where it appeared in the least degree as though the head of the femur was luxated during the life of the patient."

In fact, the profession in this country are indebted to Dr. March for the first clear, comprehensive, and correct statement of the pathology of this disease; and the basis was laid down by him for the proper plan of treatment, from which all improvements in the treatment have since been developed.

We need only refer to the following well-known text-books upon surgery to show that our best authorities have always considered the peculiar deformity, which occurs in what has been described as the third stage of the disease, to be dependent upon a *true luxation* of the head of the femur upon the dorsum of the ilium, and not upon muscular contraction, twisting of the pelvis, enlarged acetabulum, and diminished head of the femur from progressive absorption of bone, which I believe to be the true explanation.

R. Druitt, in his "Principles and Practice of Modern Surgery," says in his chapter upon hip-disease: "But, if the disease proceed, it is succeeded by another kind of shortening, caused either by the destruction of the neck of the femur by caries, or (as is more commonly the case) by the destruction of the acetabulum and capsular ligament and *dislocation* of the bone upward by the muscles."

James Miller, in his "Practice of Surgery," under the head of morbus coxarius, says: "As disorganization advances within, the joint becomes more and more loose, and *dislocation* may occur by *muscular action alone*, without the intervention of a fall or other injury. The dislocation is usually upward on the dorsum of the ilium."

Sir Charles Bell, in his "Institutes of Surgery," remarks: "Another peculiarity, in the position of the patient with diseased hip, is that of throwing the thigh of the affected side over the other, that the head of the thigh-bone becomes as a lever loaded at the lower end, by which the upper end is raised and the *pressure taken off the inflamed glenoid cavity*. It is a position of *great relief*; but the consequence is *actual dislocation* in extreme cases."

Baron Dupuytren, in the "Injuries and Diseases of the

Bones," subject, "Congenital Dislocation," says: "Whatever importance may be attached to this dislocation in the abstract, it is deserving of still more attention on account of its presenting all the signs of *luxation consequent on disease of the hip-joint*, with which it has *always been confounded*." In another place he remarks: "It" (congenital dislocation) "does not include that painful and cruel disease of the hip-joint which usually results in *spontaneous dislocation of the femur*."

Chelius, Peirié, Liston, Samuel Cooper, and Gibson, all agree with the authors above quoted in regard to the spontaneous luxation of the femur in the latter stages of hip-disease.

And even Sir Astley Cooper, in his treatise on "Dislocations and Fractures of the Joints," says: "Dislocations may arise from ulceration, as we frequently find this state of the parts in the hip-joint: the ligaments ulcerated, the edge of the acetabulum absorbed, the head of the thigh-bone changed both in its magnitude and figure, *escaping from the acetabulum* upon the ilium, and thus forming for itself a new socket."

Yet, none of the above authors, although so positively stating that luxation occurs in the disease, have sustained their assertions by the evidence of a *single post-mortem examination*.

These references could be increased, but quotation has been made from a sufficient number to establish the fact that the idea of luxation in hip-disease has been one of almost universal adoption. Yet, whenever any one of them has made a *post mortem*, or has cut into the joint for exsection, he has invariably found that *no luxation* had taken place, but that the "head of the femur was still within the capsular ligament," much absorbed, probably, and *frequently separated* from the shaft of the femur entirely, thus permitting the *trochanter major* to slip upon the dorsum of the ilium; and this no doubt has been mistaken for true luxation. I have seen this condition of the parts very many times, and seen the mistake made by most excellent surgeons. At other times the acetabulum has been found "much *enlarged* by *absorption*, and *extending upward and backward*, as if Nature had made an attempt to form a *new joint in this direction*."

As the upper portion of the acetabulum is *absorbed by the constant* pressure, the periosteal inflammation, which is present at the same time outside of the joint, is constantly throwing out new material, and we even find firm osteophytes of considerable

magnitude. Thus, as the *progressive absorption* goes on within the joint, there is a constant *deposition* taking place outside of the joint, by which means the *acetabulum with the capsular ligament* and contents is, as it were, slipped upward upon the dorsum of the ilium; so that, *instead of a luxation of the hip*, we have in fact a *displacement of the acetabulum itself*. (See Fig. 156.)



FIG. 156.

As long as the acetabulum retains the remnants of the head of the femur within its cavity, it should not be called luxation of the femur. Now, if the disease is of long standing, the acetabulum is frequently perforated, the synovial membrane and cartilages more or less destroyed by ulceration, the bones become carious or necrosed, the ligamentum teres is invariably destroyed, and the joint is filled with pus; or the capsular ligament may be perforated by ulceration at one or more places through which the pus has escaped, and this generally occurs at the inner and lower border of the acetabulum. This, according to my observation, has been the real pathological condition of this stage of all the cases that I have examined, and it accounts very satisfactorily for the shortening and other appearances of luxation. If, for example, the head of the femur is diminished by absorption three-fourths of an inch in length, as is often the case, and the acetabulum is extended upward and backward to the same amount, the gluteal

and other muscles holding the bones in close contact, there will be produced an inch and a half of shortening of the limb; and then twisting of the pelvis upon the trunk will increase this shortening, and produce the other symptoms which have been mistaken for evidences of luxation.

To illustrate my position, I will quote a *post-mortem* examination from Sir Benjamin Brodie's work on "Diseased Joints," published in 1834:

"A middle-aged man was admitted to St. George's Hospital, in the autumn of 1805, on account of a disease of his left hip. He also labored under other complaints, and died in the February following. On inspecting the body, the soft parts in the neighborhood of the joint were found slightly inflamed, and coagulated lymph had been effused into the cellular membrane round the capsular ligament. There were no remains of the round ligament. The cartilages had been destroyed by ulceration, except in a few spots. The bones, on their exposed surfaces, were carious; but they retained their natural form and size. The acetabulum was almost completely filled with pus and coagulated lymph; the latter adhering to the carious bone, and having become highly vascular. *The head of the femur was lodged on the dorsum of the ilium.*

The capsular ligament and synovial membrane were much dilated, and at the superior part their attachment to the bone was thrust upward, so that, *although the head of the femur was no longer in the acetabulum, it was still within the cavity of the joint.*"

Here we have the testimony of Sir Benjamin Brodie that "*the head of the femur was lodged on the dorsum of the ilium,*" and in almost the next sentence he says "*It was still within the cavity of the joint.*" Comment seems to me unnecessary, for this cannot be called luxation according to the ordinary definition of that term.

In Braithwaite's "Retrospect," No. 22, January 7, 1855, p. 196, is the report of a case of exsection of the head of the femur for "hip-disease," by Mr. S. Key. After giving the age, sex, and previous condition of the patient, he describes her condition on admission to the hospital, and says: "*The left femur was dislocated on the dorsum ilii, the limb shortened and the leg and thigh flexed.*" After consultation, "it was considered that removing the

head of the bone would give the patient the best chance of recovery." He then describes the operation and the morbid appearances he observed about the joint. He states that "the *acetabulum* was found to have *enlarged* by *absorption* and was *extended* in a direction *upward* and *backward*, as if an attempt had been made by Nature to form a new joint in this direction. *The head of the femur had been entirely absorbed*; a portion of the neck remained, which with the great trochanter was the part removed." I would simply ask how it could be possible that there was a "*dislocation* on the dorsum ilii," if "the head of the femur was entirely absorbed?" Can a bone be luxated when it has no existence? The answer it seems to me is perfectly plain, and it is that the luxation never took place, the apparent luxation being due to the absorption of the bone.

I do not deny that luxation can take place in morbus coxarius as well as in a healthy joint; but, on the contrary, a much less amount of force ought to be able to produce it. If, however, the nurse, while lifting the patient out of bed, or by twisting the leg across the opposite limb, ruptures the capsule and produces a luxation (as I have seen done), it is as much a *traumatic* luxation as if it had been produced by a fall from a house or by any other accident. And if a careful inquiry is made in all cases of so-called "*spontaneous luxation*," we shall find that they have occurred after the application of violence more or less severe, and not as the result of unaided "muscular contraction" according to Miller and the other authors whom I have quoted.

I have now performed exsection of the hip-joint fifty-nine times, and have found luxation in only one case, that of M. D. Field, and it was caused a few days previous to the operation by the nurse twisting his leg while getting out of bed.

PROGNOSIS.—This will be varied very much by the constitution of the patient previous to the occurrence of the disease, or more particularly by the treatment adopted, and the stage of the disease at which it is commenced.

In the earlier stages, before organic changes have taken place, in consequence of inflammatory processes or disintegration by caries, if a proper course of treatment is adopted a most favorable result may be predicted; for recovery usually takes place with a useful joint. If the second stage has continued for some time before treatment is begun, the effusion into the joint may have become

organized, or adhesion taken place, which will remain after the disease has entirely subsided. Under these circumstances recovery will take place with some deformity, and ankylosis more or less complete. This will demand subsequent treatment according to the condition of the patient, and to decide what is the best treatment that can be adopted requires the greatest skill and judgment on the part of the surgeon.

If the disease has progressed until it has reached the *third* stage, before treatment is commenced, you should not promise recovery without deformity and impaired motion. These cases sometimes recover, after applying the proper mechanical apparatus, but almost always with more or less complete ankylosis and deformity. But, if, after proper treatment, the disease still progresses, there is nothing left for the surgeon to do but exsect the joint, thereby removing the carious bone both of the femur and acetabulum. If this operation is properly performed, it can be done without danger; and, with judicious after-treatment, will, in a large majority of cases, result in a useful joint.

When, however, the case is seen during the *first*, or *early part* of the *second* stage of the disease, and put under proper treatment, as a rule, far different results may be expected, as we will have abundant occasion to show you that they frequently recover without deformity, and with perfect motion.

If the disease is allowed to progress without proper treatment, it *ordinarily* runs through the three stages.

* Occasionally a patient is seen who has been cured by ankylosis in the second stage, and he is thus compelled to carry this deformity through life.

These instances, however, are very rare. If, as is generally the case, when proper measures have been neglected, abscesses have formed after rupture of the capsule, one of two terminations is to be expected—cure by ankylosis with deformity, or death. The former sometimes occurs, but only a minority will be found with a sufficiently strong constitution to sustain the excessive drain of the long-continued suppuration.

If, however, the patient has the benefit arising from recent improvements in the appliances used in the treatment of this disease, a far different result may be hoped for and expected, if the treatment *be not delayed until too late*. If the patient has already advanced to the third stage, and is much reduced, death may

ensue, or the best result may be ankylosis; but, even here, by proper treatment, a majority may be saved, and we may expect to secure a case with partial, often complete, motion in the joint, as the following case illustrates:

CASE.—Katie K., nine years old, was brought to Bellevue Hospital Medical College, January, 1875, in robust health, but with her right hip ankylosed in the position seen in Fig. 157, from a photograph taken by Mr. Mason at the time. She had



FIG. 157.

fallen down-stairs when she was five years of age, bruising her right hip, which was almost immediately followed by all the usual symptoms of hip-disease. She was treated by repeated blisters and internal remedies, but no extension or counter-extension was employed to prevent deformity. After three years of excessive suppuration, she eventually recovered with the limb ankylosed, in which condition she has been for the past twelve months.

As she was in perfect health, no suppuration existing at the time, I put her under chloroform, divided the adductor longus and tensor vaginae femoris muscles, with some bands of contracted fascia, broke up the adhesions, and placed her in the wire



FIG. 158.

curass before the class, January 13, 1875. No untoward symptoms followed, and, February 2d, she was removed from the wire curass, and a long hip-splint applied (*see* Fig. 158), by the aid of which she could walk perfectly well without a cane. The motions at the joint were quite free, but the psoas magnus and iliacus internus muscles are not fully extended, which produces the slight curve which is noticeable at the sacro-lumbar junction; she can abduct the limb to nearly the normal extent, and is able to flex the thigh to an acute angle.

LECTURE XXI.

DISEASES OF THE JOINTS.—MORBUS COXARIUS (CONTINUED).

Treatment.—Mechanical Apparatus, and how applied.

GENTLEMEN: We have arrived at the subject of TREATMENT in our study of hip-disease, and that will engage our attention this morning.

The treatment of morbus coxarius may be divided into—

1. Local;
2. General.

Many of the general remedies employed have been given to counteract the scrofulous diathesis which was supposed to underlie these joint-diseases. Of course, if the disease occurs in a patient who happens to be scrofulous, it will be necessary to bear in mind the diathesis which complicates the trouble, and employ the proper remedies. But, as has already been shown, these "white swellings" of joints have no necessary connection with scrofula, and occur indifferently in the weak and the robust, according as the exciting causes, generally traumatic, are brought into action. It would, then, be highly illogical to subject every case of joint-disease to a course of anti-scrofulous medication. You will, however, generally find that these patients are benefited by those remedies, such as tonics, cod-liver oil, and stimulants, which are of value in the treatment of any disease of long duration and debilitating tendency.