Spontaneous dislocation of left hip joint, occuring in the course of scarlatinal rheumatism: complicated with necrosis of right tibia, and partial dislocation of right knee backwards / by John Ewens.

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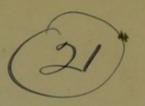
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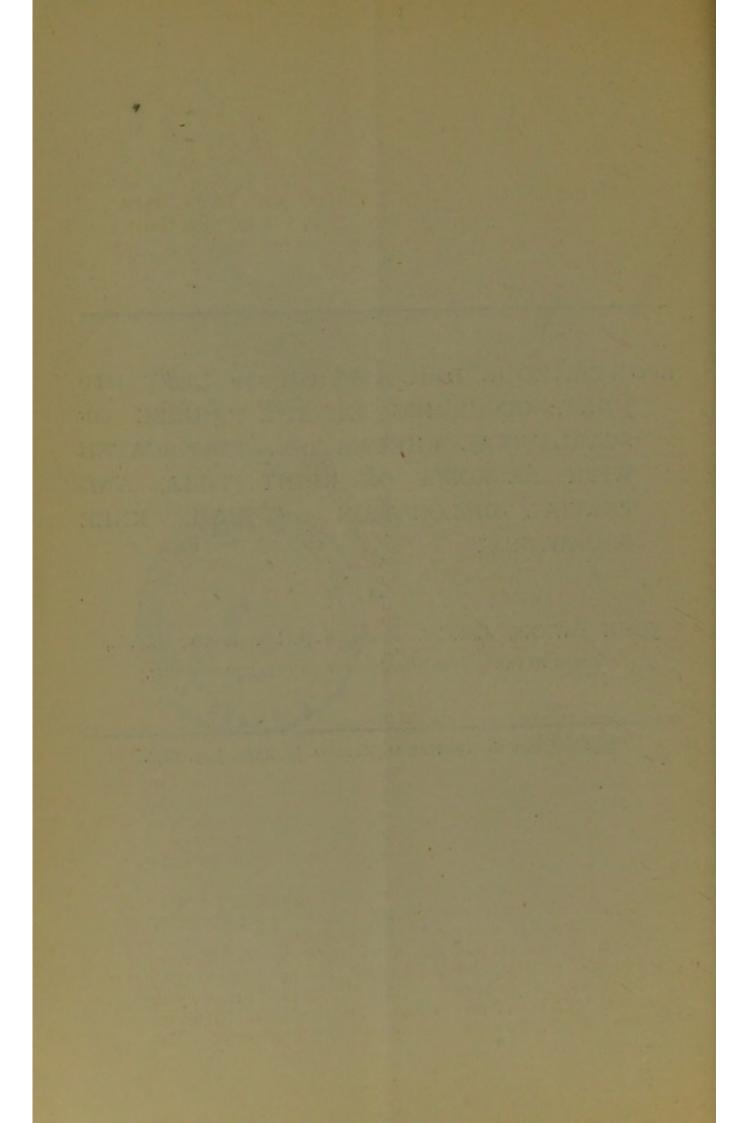


SPONTANEOUS DISLOCATION OF LEFT HIP JOINT, OCCURRING IN THE COURSE OF SCARLATINAL RHEUMATISM, COMPLICATED WITH NECROSIS OF RIGHT TIBIA, AND PARTIAL DISLOCATION OF RIGHT KNEE BACKWARDS.

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SPONTANEOUS DISLOCATION OF LEFT HIP JOINT OCCURRING IN THE COURSE OF SCARLATINAL RHEUMATISM, COMPLICATED WITH NECROSIS OF RIGHT TIBIA, AND PARTIAL DISLOCATION OF RIGHT KNEE BACKWARDS.

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E. S—, æt. eleven years, admitted into the Bristol Hospital for Children on March 10th, 1890, with dislocation on dorsum ilii of left femur, extensive necrosis of right tibia, and consequent dislocation backwards on femoral condyles, knee being ankylosed (fibrous) at an angle of forty-five degrees. He was in a very weak state, and the skin had scarcely finished peeling after scarlatina, therefore he was placed in the scarlet fever ward, and kept there until the beginning of May, when desquamation had completed. Palliative treatment of the tibia was adopted; wound kept moist with carbolic acid lotion, and gradual extension of knee was attempted. He was then quite unable to stand without support, and Fig. 1 gives a fair representation of his appearance at that time.

History given as follows: On October 23rd, 1889, the boy complained of pain in the right knee, and began to limp. The knee swelled, and was "lanced" by the local doctor. Early in November scarlet fever developed, and during this illness he complained also of pain in his left lower limb, but not localised, the limb gradually getting distorted. The right knee was said not to have been painful during the illness. No other joint affected. Two bed sores had formed, one behind the left trochanter, and one below and behind antero-superior spinous process of the ilium. Scars only remain, and there is no evidence of "morbus coxæ." The fever lasted a month, and he had a

very bad throat.

In June, 1890, the tibia was freely gouged, and large quantities of sequestra were removed, the case progressing

most favourably, new bone readily forming.

On September 2nd the notes made by Mr. Morton, surgical registrar and pathologist, are as follows: Boy seems now in fair health. Right knee flexed at 45°, with some slight lateral and backward displacement. No movement of joint possible, and no pain nor tenderness. The

muscles of the right leg generally are atrophied, as compared with the left. There is a scar extending from the spine of the tibia down three-quarters of the leg, indicating the extent of the gouging. The limb is rotated outwards at the hip and flexed, and though movement of the joint is painless and free in certain directions, yet it is impossible to rotate the limb inwards, or adduct, or fully flex it. Only abduction and rotation outward, and flexion to a certain extent are possible, and the limb lies abducted, rotated outwards, and flexed. There is no dislocation.

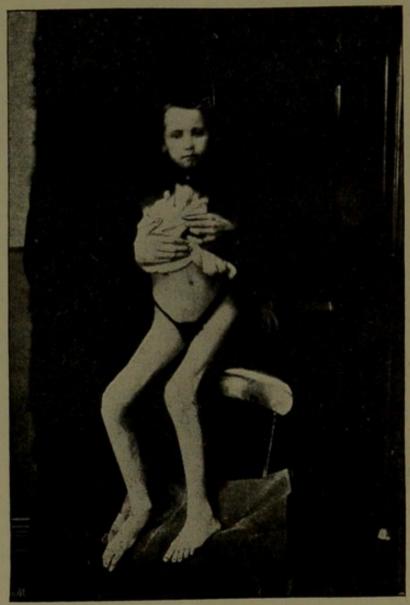


FIG. I.

The left hip is dislocated, so that the head of the bone lies low down on the dorsum ilii, where it can be felt. There is three-fourths of an inch shortening, and the trochanter is slightly raised with regard to Nelaton's line. The limb is markedly rotated inwards, adducted, and flexed, so that the knee would rest over the other limb if it were not abducted.

The foot is much inverted. Movement in other directions is impossible—i.e., abduction and rotation outwards, but a good deal of extension is possible. No pain nor tenderness

about the hip.

Sept. 4th.—Under chloroform an attempt was made by manipulation and extension to reduce the left hip: some adhesions were broken down, and the limb was put up in a long splint in very fair position, with a tendency to rotation inwards. The right hip was very freely manipulated, and adhesions about it were broken down, but complete freedom of internal rotation and adduction was not obtained. The adhesions in the knee-joint were to a considerable extent broken down, and the limb was extended, but complete extension was not obtained, not even the patella detached from the condyles. This limb was also put up on a long splint.

Sept. 5th.—The boy does not seem to have suffered much from the manipulation, but yesterday had a good deal of pain in the left limb near the knee. Temperature

normal.

Sept. 29th.—Examination under chloroform: Left limb in very good position now; not possible to compare measurement with the right limb, but the trochanter is not raised with regard to Nelaton's line. There is only very slight movement possible at the false joint, the pelvis moving mainly as a whole. The right knee was fairly straightened with considerable difficulty, adhesions being freely broken down, and a back splint was applied. Both limbs were again put up in long splints. Abduction and rotation inwards of the right hip are still very limited. Considerable pain in knee followed this last extension.

Sept. 30th.—No pain now, but knee much swollen.

Oct. 2nd.—Knee swollen, but not very tender; temp. 102° last night; ice applied.

Oct. 3rd.—Knee less swollen, no pain, but temperature 104° last night, now (11 a.m.) 101°.

Oct. 7th .- Swelling subsiding.

Oct. 13th.—Some fluctuation at sides of patella, but no pain.

Oct. 17th.—Increased swelling and rise of temperature; free incision into joint outside patella; considerable quantity of pus evacuated; drainage tube inserted.

Oct. 18th.—No pain, but the boy looks very ill and pulled down. Splints removed, and limbs gradually

assume old distorted position.

Oct. 20th.—Cicatrix of old necrosis on shin has broken down discharging freely feetid pus. From this time up to 30th Oct., the boy's condition was one causing great anxiety, counter openings having to be freely made around the knee joint. Temperature rose every night, but less pain was experienced than might have been expected. He got very anæmic. On 30th Oct. note made as follows: Hardly any discharge from any of the openings now; quieting down; dressed with wet carbolized lint and iodoform; knee getting back into old position again.

Nov. 12.—Sinuses healed; limbs about same position as on Sept. 2nd. Temperature rises to 100° every night;

no cough; anæmic.

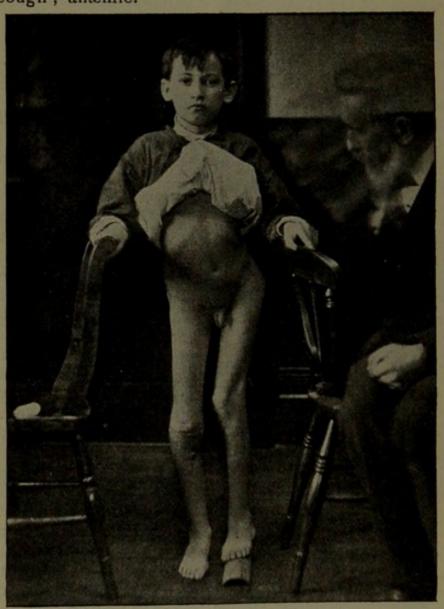


FIG. 2.

It was now obvious that any further attempt at forcible extension of the knee would be attended with serious danger, therefore it was decided to send him home after Christmas, and readmit him in the spring for excision of the knee and Adams' operation on the left hip-joint, apparatus quite failing to maintain permanent good position.

April 15th, 1891.—Readmitted.—Health much improved, but condition of limbs exactly as before. Small sinus leading down to necrosed bone at upper part of old tibial scar. This was scraped on April 28th, and parts gradually healed with exception of one small spot.

July 17th.—Knee excised under carbolic spray, and dressed antiseptically; put up on metal back splint, with footpiece and bracketed opening around knee and swung.

Aug. 5th.—Wound healed. Temperature never rose above 100° for first few days after operation; since then normal. No pain or inflammatory condition since operation. Firm union effected in about a month after operation.



Sept. 24.—Note.—Union of excised bones is good. The boy can use it and walk with crutches. When the pelvis is straightened and true, the boy lying on his back, the left limb crosses over the right knee. (Fig. 3 well represents this position either lying or standing. Fig. 2

represents him standing with the pelvis oblique, crest of left ilium being much raised above the right crest). The right limb is now two inches shorter than the left and yet the left is apparently shorter than the right from tilting of the pelvis. The sinus connected with the necrosis of the tibia and the old sinus near the knee has broken down

again, but the knee itself is sound.

Sept. 25th.—I performed subcutaneous section of the neck of the femur by means of a puncture with a narrow bistoury carried down from behind on to the inner surface of the great trochanter, followed by Adams' saw, dividing the neck close to the trochanter, thus preserving free blood supply to the head of the bone. The operation lasted about twenty minutes, and the limb was put up in a Bryant's splint; collodion on lint applied to wound.

Oct. 2.—The wound has quite healed, free crepitus on

movement of the limb, which is in good position.

Nov. 18th.—Examination with splints off. Limb is in very good position; patient can raise the heel eight inches from the bed without moving the pelvis, but all attempts at abduction or adduction move the pelvis. The head appears to be joined to the shaft. The trochanter is only a little above Nelaton's line, but is still very prominent laterally. There is two inches shortening of the right limb (Fig. 4).

The boy was exhibited at the January meeting of the Bristol Medico-Chirurgical Society, walking well with crutches, but able to get about fairly without them; and on April 9th he presented himself at the hospital very much improved in every respect. There is apparently perfect motion of the femur at the hip-joint, but careful examination elicits that there is some movement of the pelvis of a compensatory nature, but there is no real ankylosis, the femur admitting of considerable upward

and forward movement independent of the pelvis.

We are all familiar with cases of partial dislocation of the tibia backwards, accompanied with flexion of the knee and partial ankylosis, as a result of either extensive necrosis of the tibia, acute or chronic disease of the joint or strumous ostitis of the femoral condyles. This is, no doubt, induced by the patient finding relief to the tension on the parts by flexion, which is the normal position of the limb when in a state of rest, and it is not now necessary to enter on a further consideration of the pathological changes associated with this very common affection. I would briefly call attention to the complex nature of the abnormal conditions exhibited in this case, and, considering the boy's undoubtedly strumous diathesis, to the remarkable power of repair after so many serious opera-

tions; especially the second attempt to straighten the knee which was followed by extensive suppuration, for a time threatening even his life; also to the early and firm union of the bones following the excision of the knee joint.



FIG. 4.

My chief reason for reporting this case is that spontaneous dislocation of the hip-joint is sufficiently rare as to justify its being placed on record in the pages of a medical journal. In the valuable "Medical Digest" of Dr. Neale (ed. 1891) I find only two references to dislocation of the hip-joint, otherwise than as the result of an accident, voluntary dislocation, or ulcerative joint disease, and these are recorded in the Medical Times and Gazette, vol. 1, 1862, page 40; and in the British Medical Journal, vol. 1, 1883, page 1126. The Pathological Society Reports contain no references to such cases.

As further proof of rarity I have failed to find any reference to it in the classical works of Agnew, Maunsell Moulin, Ashurst, Hamilton, Smith, and Holmes. Erichsen and Bowlby ("Surgical Pathology"), however, refer to it. Erichsen says: "Spontaneous dislocation from distension of the joint is almost exclusively met with in the hip. In most cases it has occurred in children during an attack of acute rheumatism or typhoid fever. The patient having usually been very ill, the accident has been overlooked until two or three weeks, or perhaps longer, after the dislocation occurred. In all cases the head of the bone has been displaced upwards and backwards. The treatment of these cases is to attempt to reduce the dislocation by ordinary means. . . . If these means fail, and the limb remains much adducted and useless after a year or two, the position of the limb may be greatly improved by excising the head of the bone, an operation which has been performed with excellent results by Rawdon, of Liverpool, and Adams, of London. There seems no reason, however, to adopt this somewhat severe proceeding till it is quite evident a useful limb cannot be obtained without it."

Bowlby, after describing several conditions of inflammation, and results following scarlatina and typhoid fever, says: "The hip-joint is liable to be affected in a somewhat peculiar manner, for in many of these cases there is rapid effusion into the synovial cavity, accompanied with softening and stretching of the ligaments, and followed by spontaneous dislocation of the femur upon the dorsum ilii. All this may occur without the formation of any pus."

Holmes Coote ("Diseases of Joints," 1867) writes thus: "Increased secretion of synovial membrane (hydrarthrosis) is a disease, the existence of which has been confirmed by modern surgeons. . . . When fluid has accumulated to a certain extent it makes its way between the acetabulum and head of the femur, forces the latter out of its socket, when the muscles draw it upwards and outwards on to the dorsum ilii. I have seen many cases in one or both limbs. It has been observed in Bartholomew's Hospital after rheumatic fever, the dislocation having taken place without the cognisance of the patient. . . . Cases are also related by Brodie, Parisè, and MacDowd."

Mr. William Adams, in a letter on this subject, refers me to a case exhibited in 1882 or 1883 at the Medico-Chirurgical Society of London and recorded in the "proceedings" of the Society, in which he excised the head of the femur with excellent results. The history and circumstances of the case

closely resemble my own. He says: "The capsule had evidently been split at the upper part; in many cases it may only be dilated by the serous effusion occurring during the fever. The round ligament is still attached to the head of the bone and adherent to the articular cartilage, but it may have given way in the acetabulum."

In the above-cited reference to the Medical Times and Gazette Dr. Ditti brought before the Vienna Medical Society some cases of this affection, directing attention to the difference between traumatic and spontaneous dislocation of the hip; in the former, always the result of violence, the ligamentum teres and capsule are always torn, and the head of the bone lies external to the capsule. In the latter, the result of disease, inflammatory effusion takes place into the capsule, causes swelling and general loosening of tissues; the hip being flexed, the muscles gradually draw the head of the bone upwards and backwards and dislocate it, being generally retained within the capsule, and the ligamentum teres not necessarily torn.

In the reference cited from the British Medical Journal Mr. Kendal Franks read a paper at the Surgical Section of the Academy of Medicine in Ireland on March 20th, 1883, on "Spontaneous Dislocation of the Hip," illustrated by two cases observed by himself, quoting Malgaigne as dividing pathological dislocations into two classes: first, simple luxations in which the articular surfaces had not been attacked by the disease, and secondly, complicated luxations in which the articular surfaces were essentially altered. the former class Volkmann had applied the term "distentionsluxationen," and to this form alone Mr. Franks alluded under the head of "spontaneous dislocation." In reviewing the causes of these dislocations a relaxed and distended state of the ligaments has to be recognised as a condition invariably present. The causes primarily engaged in bringing about such a condition are: (1) traction; (2) pressure; (3) paralysis; (4) muscular contraction; (5) essential causes —e.g., hydrarthrosis and pyarthrosis. But the first case related by Mr. Franks in no way illustrates my subject, inasmuch as there was previous ulcerative disease of the joint. His second case, however, is almost parallel with my own, as there was necrosis of the tibia of the opposite limb; and here seems to me to be a satisfactory solution of the way in which the dislocation may be produced. The patient lying on the side of the necrosed tibia, the knee being flexed to relieve pain, the other limb naturally inclines over that way and is very much adducted. If in this position effusion

of fluid takes place into the hip-joint accompanied with softening of the ligamentum teres, the action of the glutei and other muscles tends to draw upwards and backwards the

head of the femur and thus gradually dislocate it.

With reference to treatment of these cases Dr. Ditti considered attempts at reduction as contra-indicated in the early stage when there is any inflammation present or when the muscles are contracted. But Dr. Salzer advocated early attempts at reduction irrespective of inflammation, as delay renders reduction more difficult, and inflammation subsides after reduction. Dr. Ditti records two cases in which reduction was effected respectively five and six months after the dislocation occurred. In my case two attempts at reduction failed to retain the head of the bone permanently in its place. Mr. Holmes Coote observes (op. cit): "The condition is quite irremediable. The head of the bone may be drawn to the socket but cannot be kept there. The patient gradually acquires the power of locomotion, but the spine acquires the curvature known as lordosis. The operation of dividing the contracted muscles or the neck of the femur are proceedings which have not hitherto received the approval of most surgeons." But twenty-five years have elapsed since that time, and Mr. Adams and others have proved the efficacy of subcutaneous section of the neck of the femur in ankylosis of the joint in bad position, and his case referred to above, with my own, and perhaps others, of which I cannot find a record, prove the efficacy of the operation in suitable cases.

Through the courtesy of Mr. Dobson, of the Bristol General Hospital, I have permission to refer to a case under his care, which I saw a few days since. This boy, aged fourteen years, after an attack of acute rheumatism, was found to have experienced a dislocation of the head of the left femur on the dorsum ilii, but Mr. Dobson is of opinion that the head has undergone some amount of absorption. The left limb, when the pelvis is in true position, crosses the right exactly in the same way as the one recorded by myself.

There is no disease of the right linb.

This case will, I think, be interesting as illustrative of the pathological changes which occur in joints during a severe attack of scarlatinal rheumatism, or other inflammatory affections, in which due attention is not given to the importance of maintaining good position during the long confinement to bed in a state of great exhaustion and pain. I have seen several cases illustrating this condition where the joint has not been primarily affected. Two are fresh in my mind. One, that of a boy who met with an accident,

puncturing, with a pair of grass shears, the inner condyle of the femur, setting up acute inflammation and abscess. In order to avoid pain as far as possible, the child kept his knee flexed, and when the original injury had been recovered from, not only was there partial dislocation of the tibia backwards, with fibrous ankylosis at an angle of about 30°, but the inner condyle was so hypertrophied as to give rise to a very considerable amount of genu valgum. After a time the adhesions were forcibly broken down, and the limb put up in a straight splint, ankylosis in a good position resulting. The next is that of a child with acute necrosis of the tibia, in which the knee became flexed to relieve pain, and sinuses burrowing around the joint led the surgeon to believe that it was diseased, with the result that amputation was performed above the joint, which was found to be perfectly healthy.

In both these cases a movable joint might have been preserved had proper extension been kept up. Hence the importance of maintaining proper position of the joints, whether themselves primarily affected, or the bones in the immediate neighbourhood. Also of carefully ascertaining from time to time—especially in children who do not readily complain—the freedom from, or existence of inflammatory or other affections of parts not involved in the original disease, with the view of taking such measures as may be necessary to prevent misplacements and deformities

from occurring.

2.1

