A BRIEF NOTICE
OF
SOME CASES OF INJURY
TO
THE HIP-JOINT.

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Read June 5, 1827.

Fracture of the Trochanter Major, which may be mistaken for Dislocation of the Head of the Femur.

AMONG the more complicated injuries to which the hip-joint is exposed, that of fracture of the trochanter major, combined with fracture of the neck of the femur, has, under certain circumstances, a strong resemblance to a dislocation of the head of the bone. Whenever the fractured portions of the trochanter can be brought into contact, a crepitus will be produced which may enable the surgeon to ascertain the precise nature of the injury. But when, from the direction of the fracture, one por-

tion of the trochanter has been drawn by the action of the muscles towards the great ischiatic notch, no crepitus may then be discoverable, a direct source of mistake will then arise from the positive resemblance of the fractured portion of the trochanter to the head of the femur, the former occupying the same place which the latter would do in dislocation; and if, with these circumstances, there should happen to be an inversion of the injured limb, the difficulty of the diagnosis must be considerably increased. This obscurity, while it affords a strong motive for extreme caution in such cases in our own practice, should at the same time teach us to be slow in citing a mistake in the practice of others, as proving either ignorance or inattention. In this view the following cases may have some claim to the attention of the Society.

A woman, in her sixtieth year, fell in the street and injured her right hip. On examination, the limb was found slightly everted and shortened to the extent of three quarters of an inch, but moveable in every direction. The extremity of the shaft of the femur was in its natural situation, but behind the femur and at a little distance from it a bony prominence was discovered resting upon the ilium, towards the great ischiatic notch, strongly resembling the head of the femur. Various opinions were entertained as to the nature of

the injury, some believing it to be dislocation, and others, fracture. After a confinement of several months to her bed, the woman was sufficiently recovered to walk with the assistance of a crutch, and in this state she continued till her death, which took place about three years from the date of the accident, during the whole of which period I had watched the progress of the case. Having obtained permission to examine the seat of the injury, I ascertained that there had been a fracture extending obliquely through the trochanter major, and through the basis of the neck into the shaft of the femur, and that the prominence which had been mistaken for the head of the bone, was occasioned by the posterior and larger portion of the trochanter drawn backwards towards the ischiatic notch.

The next case is of a man aged sixty-five, who had been knocked down in the street. His skull was severely injured, and he had likewise sustained an injury in the right hip. His death took place on the tenth day from the time of the accident. The particulars of the injury sustained by the hip were as follow :—The limb was shortened and everted. Behind and at a considerable distance from the extremity of the shaft of the femur, a distinct prominence was discovered, so nearly resembling the head of the bone that it was presumed, a dislocation had occurred. On this pre-

sumption forcible extension of the limb was made, which shifted the prominence that had been mistaken for the head of the bone. On examination of the hip after death, a fracture was found extending through the trochanter major and through the basis of the neck of the femur. One portion of the trochanter had been drawn backwards into the situation which the head of the bone would occupy in dislocation; but it still retained sufficient connexion, by periosteum, with the shaft of the femur, to explain the change in its situation during the extension of the limb.

In Sir Astley Cooper's work on Dislocations, &c., the fracture of the trochanter major is noticed, but without intimation of any difficulty in the diagnosis.

Mr. Swan has related a case of injury to the hip followed by inversion of the limb, in which a tumour was felt behind the trochanter major, resembling the head of the bone. On dissection, a fracture was discovered extending through the basis of the neck and into the shaft of the femur. A portion of the shaft had been separated, and was found behind the trochanter major; but here, the crepitus produced on examining the limb precluded any mistake respecting the nature of the injury. Other cases have been stated to me in which even experienced surgeons have found it difficult to decide whether they were cases of fracture or dislo-

cation. These were probably fractures in which a portion of the trochanter major had been separated and forced into the situation which would have been occupied by the head of the bone in dislocation.

*Fracture of the Neck of the Femur with Inversion
of the Limb.*

A middle aged man fell in the street, and his hip struck the curb-stone. The immediate consequences were that the limb was inverted and shortened to the extent of an inch: and no crepitus could be discovered. It was presumed that a dislocation had occurred: and accordingly an extension of the limb was made, and so great was the constitutional irritation occasioned by repeated trials to reduce the supposed dislocation, that the man died about five months from the time of the accident. In the dissection of the hip, a fracture was found extending obliquely through the middle of the neck of the femur, but entirely within the capsule. A portion of the fibrous and synovial membrane on the anterior side of the neck of the bone had escaped laceration.

In a male subject that had been brought for dissection, it was observed that the left lower extremity was turned inwards, and considerably shortened. On examining the hip, a fracture was

found extending through the neck and shaft of the femur. The neck had been broken at its junction with the shaft, and a fracture had extended from the upper part of the trochanter major, downwards, to the posterior side of the femur, a little below the trochanter minor. The upper part of the shaft was thus split into two portions, one of which was of sufficient magnitude to include the trochanter minor and nearly the whole of the trochanter major. The firm union of the several portions of the bone indicated that the fracture must have taken place a considerable time before death.

In the two last cases, it may be asked, to what cause the inversion of the limb should be attributed? whether to the direction of the fracture? if not, whether there be any other circumstance adequate to its explanation? In the instance of the fracture within the capsule, the portion of the synovial and fibrous membrane, which had escaped laceration on the anterior side of the neck of the bone, might probably prevent the limb from being turned outwards; but why it should have been turned inwards, I confess myself unable to explain. In the instance of fracture without the capsule, by considering the direction of the fracture in reference to the attachments of the muscles we obtain an explanation of both points. For as nearly the whole of the muscles, that rotate the thigh outwards, were connected with the separated portion

of bone, they must have ceased to influence the limb in one direction, and of course have left their antagonists at liberty to turn it in the other; and the fractured surfaces being permitted to unite without any change in the position of the limb, the inversion would become permanent.

In a valuable paper published by Mr. Guthrie in a former part of this volume, a case of fracture of the neck of the femur is related, in which the inversion of the limb seems, as in one of the cases just related, to have arisen from the direction of the fracture in reference to the attachments of the muscles rotating the thigh outwards. Another parallel case, and admitting the same explanation, is related by Mr. Syme in the *Edinburgh Medical Journal*, April 1826. This however furnishes no solution of the case where fracture within the capsule was followed by inversion of the limb, and as little will it explain the facts related by Mr. Guthrie in a second case, where the limb, at first everted, became a week after the accident so much inverted as to excite an apprehension that the nature of the injury had been mistaken. On this subject further information is still wanting.

Fracture of the Neck of the Femur without Injury to the Synovial and Fibrous Covering.

In several instances of recent fracture of the neck of the femur within the capsule, I have found

a considerable portion of the synovial and fibrous covering of the bone entire, and the extent of its laceration has obviously influenced the degree of displacement in the limb. This covering remaining entire on either side of the neck of the bone, must counteract the shortening of the limb. Should it be preserved entire on the anterior side, the eversion may be wholly prevented; and when, as in the following instance, the membrane is uninjured, the fractured surfaces in such case may be kept firmly together, and the limb secured from any change in its length or position.

A man, aged sixty, was knocked down in the street, and on his admission into St. Bartholomew's Hospital shortly after the injury, he complained of pain in the hip; but there was neither shortening nor eversion of the limb, and its several motions could be executed with perfect freedom and power. In this absence of all the usual indications, a fracture was not suspected: the patient therefore was merely confined to his bed. At the end of a fortnight he had an attack of inflammation in the intestines, from which he recovered, but suffered a relapse, and died in the fifth week from the date of the accident. On examining the body, no trace of injury was found in the parts around the hip-joint; but on opening the capsule, small effusions of blood, apparently not recent, were discovered beneath the synovial and fibrous membrane, covering the neck of the femur, also

beneath the synovial membrane covering the ligamentum teres. The head and neck of the bone were sawed through their middle, and in each portion a dark line, evidently occasioned by the effusion of blood, was seen extending through the bone at the basis of the neck. A fracture was discovered extending along this line; but the broken surfaces were in contact, and the synovial and fibrous membrane covering the neck of the bone was uninjured.

In this case, if an attempt had been made to walk at the end of two or even three weeks from the accident, a separation of the fractured surfaces and consequent shortening of the limb would have been the result. Hence, in cases where the nature of the injury is doubtful, we may infer the obvious propriety of imposing on the patient a strict confinement to his bed for as great a length of time as if the fracture had been ascertained. Another obvious inference is, the necessity of a minute attention to the circumstances under which the accident occurred; these, in the absence of all clear and decisive indications of the nature of the injury, being often our only guides.

J. G. Shepherd del. J. H. Perry lithog.

Printed by G. Hullmandel

Pub^d by Longman, Rees, Orme, Brown, & Green Sep^r 1827.

J. H. Perry lithog.

Printed by C. Hullman

Pub^d by Longman Rees, Orme, Brown & Green 1827