

Sands (H. B.)

A CASE OF
BONY ANCHYLOSIS OF
THE HIP-JOINT,

SUCCESSFULLY TREATED BY

SUBCUTANEOUS DIVISION OF THE NECK OF THE FEMUR.

BY

H. B. SANDS, M. D.,

SURGEON TO THE BELLEVUE AND THE ROOSEVELT HOSPITALS, ETC.

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Presented by
A. E. M. Purdy

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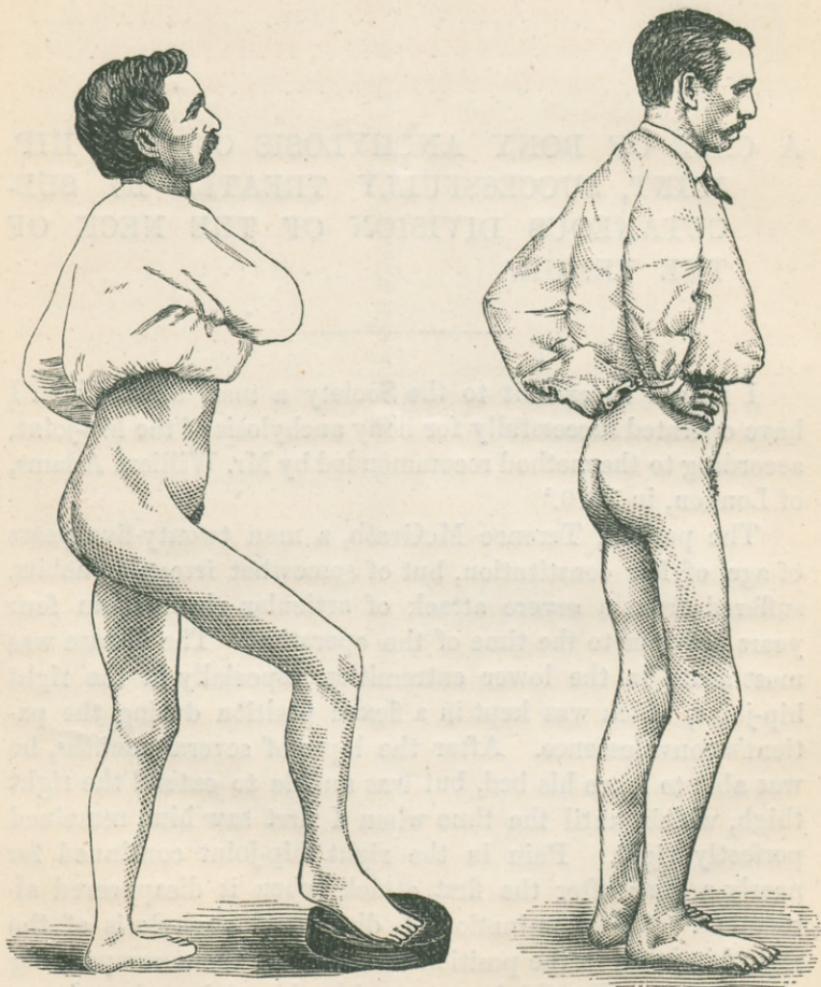
I DESIRE to exhibit to the Society a man upon whom I have operated successfully for bony ankylosis of the hip-joint, according to the method recommended by Mr. William Adams, of London, in 1870.²

The patient, Terence McGrath, a man twenty-five years of age, of fair constitution, but of somewhat irregular habits, suffered from a severe attack of articular rheumatism four years previous to the time of the operation. The disease was most acute in the lower extremities, especially in the right hip-joint, which was kept in a flexed position during the patient's convalescence. After the lapse of several months, he was able to leave his bed, but was unable to extend the right thigh, which, until the time when I first saw him, remained perfectly rigid. Pain in the right hip-joint continued for nearly a year after the first attack, when it disappeared altogether. On examination, I discovered ankylosis of the right hip-joint, in the position indicated in the accompanying photograph. The thigh was considerably abducted, and was

¹ Read before the New York County Medical Society, October 27, 1873.

² "A New Operation for Bony Ankylosis of the Hip-Joint," etc., by William Adams, F. R. C. S. London, 1871.

flexed, so as to form an angle of 110° with the vertebral column. The patient could not rest the right foot on the ground without assuming a crouching attitude, and was dependent on the use of crutches in locomotion. My friend Prof. Detmold, who sent the case to me for treatment, suspected that the ankylosis was fibrous; and such was my own impression,



until I made an examination while the patient was under the influence of ether, when it became evident that the rigidity was due to true ankylosis, as no amount of force that I dared to exert caused the slightest movement of the thigh upon the pelvis.

On February 12, 1872, I performed subcutaneous division of the neck of the femur, at the Strangers' Hospital, in the presence of Drs. Parker, Buck, Markoe, Thomas, Peters, and others. The operation was performed in the following manner: A long, straight, narrow bistoury was thrust through the soft parts just above the great trochanter, and carried directly in front of the cervix femoris, so as to separate the soft parts from this aspect of the bone. The knife was then withdrawn, and a narrow saw (such as the one devised by Mr. Adams), an inch and a half in length, and having a long, slender shank, was introduced along the track made by the knife, and the neck of the femur divided. The bone was exceedingly firm, and nearly twenty-five minutes were required to complete the section. Very little blood was lost during the operation; and the external wound, which was hardly three-eighths of an inch in extent, was dressed simply with a piece of lint, a strip of adhesive plaster, and a spica-bandage.

After the bone had been severed, it was found necessary to divide the tendons of the adductor longus and the tensor vaginæ femoris. When this had been done, the thigh was immediately and readily extended to a right line with the body. The patient was put to bed, and the limb kept extended by a weight attached to the foot. No inflammation followed the operation; and, on the tenth day, when the dressings were removed, the wound was found to have healed completely, and without suppuration.

The patient was confined to bed for six weeks, in the hope of obtaining bony ankylosis in the straight position; but, as it was found, at the end of that time, that the parts remained freely movable, he was permitted to get up, and to move about the ward on crutches. Meanwhile, the right limb, which, immediately after the operation, was of equal length with the left one, was found to have shortened a quarter of an inch.

The patient was discharged from the hospital on April 29th, and returned to the city for a day only on August 15th, when the above photograph was taken. At that time he was still obliged to get about on crutches, and showed little power over the false joint, which yet remained quite movable. During the winter of 1872-'73 he was again attacked with

rheumatism, and confined to bed for several months. The disease was especially severe in the right knee, which, on his return to the city in February, 1873, was found to be in a state of false ankylosis. He was admitted into the Roosevelt Hospital, where an attempt to flex the knee brought on a sharp attack of synovitis, which lasted until May 1, 1873. Since then, he has been steadily improving in general health, and has acquired the power of locomotion to a useful degree. He can walk without the assistance of a cane, but his gait is then awkward and unsteady, owing, he says, rather to a weakness of the knee than of the hip. With the aid of a cane, however, he walks quite well, and, for distances not exceeding a mile, without fatigue. The affected limb is three-quarters of an inch shorter than its fellow, and the existence of a false joint is plainly demonstrable, as the members of the Society can convince themselves on examining the patient. He sits with ease in the upright position, and, while standing erect, can cause the right foot to move as follows: forward, twenty-two inches; backward, nineteen inches; inward, thirteen inches; and outward, fifteen inches. In making the movement of adduction, he is able to bring the limb across the opposite knee. Rotation, to about its normal extent, can be easily effected by passive motion, but the patient has very little voluntary power in producing this movement. In walking, the foot is naturally everted. To what extent further improvement is possible cannot, of course, at present be determined, yet the patient is steadily gaining, and expresses himself highly pleased with the result already obtained.

Cases of bony ankylosis at the hip-joint have rarely been treated by surgical operation; and, until the ingenious plan of subcutaneous osteotomy was recently devised and executed by Mr. Adams, the operations hitherto performed were of a formidable character, and involved very extensive incisions into the soft parts. The first operation ever undertaken for the relief of bony ankylosis at the hip-joint was performed by Dr. Rhea Barton, of Philadelphia, in 1826. It was begun by a crucial incision, seven inches in length, and five inches in width, laying bare the great trochanter. The soft parts then having been separated from the bone, the latter was

divided horizontally through the great trochanter and neck of the femur, above the lesser trochanter. The patient recovered with a useful limb, and the false joint thus established remained movable during six years, after the lapse of which period it became ankylosed in the straight position.

It has been alleged¹ that Dr. Barton's operation was undertaken merely for the purpose of rectifying the malposition of the limb, and not with the view of establishing a false joint; that the section was made through the shaft of the femur, below the lesser trochanter, and that a wedge-shaped piece of bone was removed. All of these statements are erroneous, as may be seen by consulting the original paper of Dr. Barton, already referred to.² The operation was performed, as I have described it, and for the expressed purpose of creating an artificial joint. Moreover, the joint thus obtained retained its mobility during a period of not less than six years. Barton's operation has since been performed by Rogers, Textor, Maison-neuve, Ross, and others, always with the result of correcting the deformity, but seldom with that of establishing a false joint for any great length of time.

In 1862, Dr. Sayre operated upon two patients with ankylosis of the hip, by a method which resembled Barton's, but which differed from it in the fact that it involved the excision of a semicircular piece of bone. One patient, after the excision of two pieces of dead bone, recovered with a serviceable false joint, which exhibited free motion six months after the operation, when he left the city and returned to his home. In the case of the second patient, the wound closed at the end of four months, but afterward reopened, and discharged several small fragments of dead bone. The patient died of disease of the lung about six months after the operation, and, at the autopsy, the existence of a false joint was verified.

Mr. Adams, in the paper referred to, reports seven cases of the operation devised and first performed by him. Of these, six were successful, the other terminating fatally from pyæmia. This latter case was one of fibrous, while the former

¹ "A New Operation for Artificial Hip-Joint," etc. By Lewis A. Sayre, M. D., *NEW YORK MEDICAL JOURNAL*, January, 1869.

² *North American Medical and Surgical Journal*, vol. iii., p. 279.

were all examples of bony ankylosis. Of the successful cases, two ended in ankylosis at the expiration of two months and five months respectively; in the remaining four, the final result, as regards motion, cannot be definitely stated, as two of them were reported five weeks, one four months, and one eleven months, after the operation.

I think it will be found that, in cases of bony ankylosis of the hip-joint requiring a surgical operation, the simple method recommended by Mr. Adams will supersede all others, on account of its safety, and of the facility with which it can be carried out. The question, whether operations of this character may be expected to result in the formation of an artificial joint, is not, in my judgment, a very important one. If the affected limb can be restored to its normal position, and to nearly its normal length, ankylosis will be found, I think, to afford greater security than the best false joint, and to offer no serious obstacle to locomotion, as the movements at the hip-joint are readily compensated for by rotation of the pelvis. In my own case, I suspect that the patient would walk even better than he does at present, if ankylosis had taken place after the deformity had been removed by operation.

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