Willard (De F.)

Anterior Displacement of the Hip (Congenital), by DeForest Willard, M. D., Philadelphia, Pa., Clinical Professor of Orthopaedic Surgery, University of Pennsylvania; Surgeon to the Presbyterian Hospital, etc., etc.

PEDIATRICS

ANTERIOR DISPLACEMENT OF THE HIP (CONGENITAL).*

By DEFOREST WILLARD, M.D.,

Philadelphia, Pa.,

Clinical Professor of Orthopaedic Surgery, University of Pennsylvania; Surgeon to the Presbyterian Hospital, etc., etc.

Anterior displacements of the head of the femur from congenital deformation of the acetabulum, or of the head and neck of the femur, are quite rare; only two or three American cases having been reported. Hence this record.

The patient was a boy, aged 11 years. No history of injury at birth or later. Began to walk at one year of age, but parents were not positive as to whether they noticed any peculiarity of gait until he was three years of age. Gait at present is a decided limp, from shortening of the leg, but the waddle is not characteristic as seen in cases of posterior displacement. There is only a moderate amount of lordosis, since the position of the head of the bone does not necesitate marked accommodation of the spine.

Viewed anteriorly, two inches below the right anterior superior spinous process, and in a line with it, is a hard prominence which rotates in unison with all the movements of the femur. The neck of the bone can also be easily distinguished. The trochanter is more prominent than normal and broadens the limb at this point. The head apparently lies upon the ilium directly above the normal position of the acetabulum; it does not slide during locomotion. Adduction and rotation can be performed to nearly the usual limits, but abduction is interfered with when the limit reaches ten degrees outside of the straight line. Flexion is normal; extension slightly limited. The head can be outlined without much difficulty, and the peri-articular muscles all seem in good condition. The head does not lie upon the ramus of the pubes, nor in the thyroid foramen, as ordinarily seen in anterior traumatic dislocations, but is directly above the socket.

Posteriorly, the right buttock is broadened and slightly flattened and the trochanter more prominent.

The boy can stand upon tip toe on the right side, but the leg and thigh are slightly atrophied, being half an inch less in circumference. The distance from the anterior spinous process to the knee is one and a quarter inches less than the left, when the leg is

* Read before the American Orthopaedic Association, May, 1896.

straight; but when the thigh is flexed to the right angle the knees are in line owing to the upward position of the displacement. It is probable that the deformation consists in a false acetabulum above the site of the true one, rather than that the acetabulum is oval in shape.

The motions of the femur nearly approximate the normal, and, as there is no sliding motion, shortening is the only practical deformity. It is difficult to see how any operative interference would be beneficial, since lordosis is slight, and the power of the muscles connecting the trunk with the femur would certainly be diminished by interference. Lengthening the limb artificially is all that is advisable. As this procedure corrects the limp and the interference with locomotion is so moderate, it is difficult to see how a Hoffa or Lorenz operation would improve him.

I have seen a number of cases of variations in the hip articulation which have differed markedly from the typical condition of congenital dislocation. Some of them have very probably been from fractures or dislocations or epiphyseal separations. In some cases the femoral neck has been shortened and even distorted and twisted possibly coxa vara; while in other instances there has been an appearance of an old injury. In the majority of cases the injury has been unrecognized (according to the history), thus leaving the question of pre-natal or puerperal injury uncertain. The first evidence of the condition has been the irregular gait which the child exhibited when commencing to walk; or, perhaps, the disability was not noticed until a year or two later. In the majority of cases the growth of the limb has been so altered that there has been a difference of from half an inch to two inches in length.

When the head of the femur is fairly well confined in its movements upon the ilium, diagnosis is sometimes difficult. It is probable that although the condition has existed from birth, the cause may have been traumatic even within the uterus. In this deformity, as in others, it is quite possible that violent coition during the first month of pregnancy may influence the embryonic mass, especially if the ovum has attached itself in the lower segment of the uterus.

The diagnosis of anterior position of the head of the femur from acute bending of the neck of the femur, as described by WHITMAN (*Trans. Am. Orthopædic Assoc.*), is not difficult.

About the trochanter the conditions are similar. In misplacement, however, the head of the bone can be plainly distinguished in its abnormal position. Trochanteric rotation is altered. Bending of the neck may or may not be associated with rachitic deformi-

ties; yet it must be due to some softening of the bone akin in character.

The trochanter in acute bending is above Nelaton's line, while in anterior displacement it is both above and in front of its normal position. Mutter, of Germany, in 1889, first described this condition, as it usually occurs in children about the age of puberty, probably due to causes similar to those which produce lateral curvature.

LEESER (*Presse Medicale, Oct. 5, 1895*) states that rachitic symptoms co-exist.

Acute bending is most liable to occur in those who have heavy weights to carry, or who are subjected to prolonged standing while in a debilitated condition; but there must be some local fault to cause the deformity, as it frequently occurs on one side.

DRS. RIDLON and PHELPS have both reported cases of anterior dislocations.

In DR. PHELPS' case (*Trans. Am. Orthopædic Assoc. Vol. iv., p. 132*), the child died of acute spinal meningitis one and a half years after treatment was commenced. The specimens showed that the case was one of congenital dislocation, probably in utero, with non-development of the acetabulum. Whether this occurred from traumatism, or from some reflex spasm of the muscles caused by central nerve lesion in early foetal life is uncertain.

KETCH (*Keating's Encyclopedia of Children*) does not believe that the condition is due to injuries at birth.

In Phelps' case, the head of the bone lay in front of its normal position. The leg was shortened and the toes were rotated inward. The acetabulum was angular in shape, small and undeveloped.

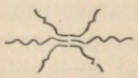
My own belief is that traumatism inflicted during delivery is productive of fractures or dislocations to which the plastic anatomy of the infant adapts itself and gives only a moderate amount of subsequent deformity. In breech presentations a hook is frequently placed over the thigh of an infant and strong traction made upon the tissues; certainly sufficient to displace a bone or break the rim of the acetabulum.

The treatment proposed is prolonged extension in bed, followed by the use of an apparatus to continue extension, as recommended by BRADFORD (*Trans. Am. Ortho. Assoc. Vol. iv, p. 308*), the individual being kept under extension in all positions of the limb. For locomotion, a long fixation splint may be used, or a jointed locking and unlocking splint with leg and thigh envelopment. The method

of forcible manipulation during the process of extension probably produces a certain amount of adhesive inflammation.

In RIDLON'S case (*Trans. Am. Orthopaedic Assoc. Vol. 2, p. 76, 1889*) the head of the femur lay almost directly below the anterior iliac spine. The leg was shorter than its fellow. Forcible traction by Taylor's extension hip splint was continued in bed for an entire year, after which the child walked upon a long traction splint, the shortening being reduced from three inches to half an inch, although at the time this case was reported continuous traction was still in force and no weight had been borne upon the limb.

In another case which I have recently seen (a girl two years of age), the left leg was three-quarters of an inch shorter than the right one, and she walked with a decided limp. The head was freely movable upon the ilium, nearly an inch, in an upward direction. The trochanter was prominent, but was not displaced backwards. The head of the bone could be distinctly outlined, apparently lying upward and slightly forward.



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