A new test for estimating iliotibial band contracture

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Contracture of the iliotibial band leading to flexion and abduction deformity at the hip is common in residual paralysis after polio. Ober’s test has been used to detect this, but it is unreliable and cannot determine the degree of contracture.

We describe a new test which quantifies this contracture and can be used for comparative purposes.

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The iliotibial band is a thickening of the fascia lata of the thigh. Its upper end splits to enclose tensor fascia lata and distally it is attached to a smooth triangular anterolateral facet on the lateral condyle of the tibia.

Spasm of the tensor fascia lata leading to contracture of the iliotibial band is common in patients with residual paralysis after polio. This produces a flexion, abduction and external rotation contracture at the hip. Ober’s test is used to demonstrate the contracture. We have, however, experienced difficulty in using this test satisfactorily. It cannot be used for comparisons or to quantify the degree of contracture.

We have therefore devised a new method of estimating the degree of contracture of the iliotibial band.

Method

Before performing the described test, it is essential to confirm that the abduction contracture is due to the iliotibial band and not to other causes. The cardinal sign is that in the supine patient an abduction contracture is present when the hip and knee are extended, but is eliminated by flexion of the hip and knee.

For the new test, the patient is placed in a prone position on a flat surface. The examiner stands on the side opposite to the limb being assessed and holds the leg near the ankle with one hand, placing it in maximum abduction at the hip. With the other hand, pressure is applied to the affected buttock to flatten the pelvis and correct any flexion deformity at the hip. The latter is maintained in neutral rotation with the knee in 90° of flexion.

The hip is then gradually adducted until a firm endpoint is reached (Fig. 1), with pressure maintained on the buttock to prevent the pelvis from lifting. The angle of abduction of the thigh in relation to the vertical axis of the body is then a quantitative assessment of the contracture of the iliotibial band.

Discussion

The iliotibial tract lies anterolateral to the axis of the hip. Any shortening will flex and abduct the hip, but flexion will relax the iliotibial band and allow the hip to be brought into the neutral position; this differs from abduction contracture due to other causes. Similarly, increasing abduction allows the limb to be extended.

In the classical Ober’s test the patient is in a lateral position with the normal thigh next to the table and flexed sufficiently to obliterate any lumbar lordosis. The upper leg is...
is then flexed to a right angle at the knee and the examiner holds the ankle lightly with one hand and steadies the patient’s hip with the other. The upper leg is abducted widely and extended so that the thigh is in line with the body. If the limb is now released, it will stay suspended in abduction before showing a delayed drop depending on the degree of contracture. It is very difficult to determine the delayed drop of the limb because flexion at the hip relaxes the iliotibial band and renders the test ineffective. Others have also expressed doubts as to the reliability of Ober’s test.4

Our test converts the two-plane deformity of flexion and abduction into one plane of abduction. In the prone position the hip can be pushed into extension, and the tension in the iliotibial band can be released only by abduction. The degree of this abduction required is then a measure of the deformity.

The effect of the iliotibial band on hip rotation and knee flexion is eliminated by keeping the knee flexed to 90° and in neutral rotation throughout the test. We advise a prone position, since in the supine position lumbar lordosis may mask some of the hip flexion deformity. In addition, a flexion contracture at the knee may prevent full extension of the hip. In the prone position, with the pelvis and the thigh held flat, the flexion component of the contracture is eliminated and the true abduction deformity can be measured.

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References