Teaching Video NeuroImage: Rectus Femoris Muscle Fibrosis Presenting as Abnormal Gait in Childhood with a Positive Ely Maneuver

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A 7-year old boy presented with abnormal gait since 3 years of age. Exam showed left sided limping with external rotation. On passive flexion of the knees while the patient lied prone, the left heel could not reach the buttock and the left hip rose up (Video1). This indicated a positive Ely test indicating limited flexibility of the rectus femoris muscle (1). Neurological exam was otherwise unremarkable. He had normal skeletal X-rays of both legs. MRI showed fibrosis of the rectus femoris muscle (Image 1) which may be idiopathic or related to trauma. The patient had no history of muscle injury thus distant intramuscular injection was suspected to be the cause. Early diagnosis helps improve mobility through early surgical intervention (2). Ely test, which is not routinely performed during neurological examination, might be helpful in evaluating children with abnormal gait.

Video 1. Physical Exam
Exam showing the patient’s abnormal gait with left sided limping and positive Ely maneuver. There is reduced passive flexion of the left knee with uprising of the left hip while the patient lies prone.
Figure 1. MRI showing fibrosis of the left rectus femoris muscle. T1 weighted MRI of bilateral thighs showing moderate and diffuse reduced muscle bulk of the left rectus femoris with some distal fat replacement but no obvious acute change, oedema or strain. The rest of the quadriceps appear unremarkable.
References:


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