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Idiopathic Fibrosis of The Quadriceps Muscle (Rectus Femoris): A Case Report with Magnetic Resonance Imaging

KEYWORDS: Rectus femoris, quadriceps, fibrosis, magnetic resonance imaging.

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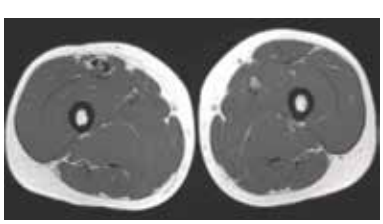
ABSTRACT *Idiopathic fibrosis of the quadriceps muscle is due to chronic fibrosis within the muscle starting from early childhood presenting as progressive loss of knee flexion. Very few cases have been reported in literature with MRI findings. 13 Y Male patient with complaint of abnormal gait during walking since 2yrs of age was clinically and radiological evaluated. Magnetic resonance imaging of right thigh showed marked rectus femoris muscle atrophy with fat infiltration and fibrous band within.*

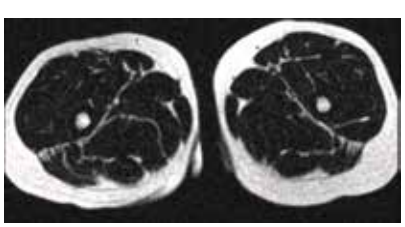
INTRODUCTION

Idiopathic fibrosis of the quadriceps muscle is very rare entity with only a few cases being described. Magnetic resonance imaging findings can be used to confirm clinical findings.

CASE STUDY

13 Y Male patient presented with complaint of abnormal gait during walking with a limp towards the right limb since 2yrs of age with slow progression of complaints. Child had attained all development milestones appropriate for age and was fully immunized. Child had no pain in the limbs and there was no difficulty in sitting or squatting position. There was no history of trauma or injections to the lower limbs. There was also no family history of a similar abnormality. Physical Examination revealed patient having stiff hip gait. Hip and knee were extended with mild flexion of ankle on lying down position. Tightness of rectus femoris muscle was noted in right lower limb on palpation. Rest all muscle groups were normal. MRI was performed on PHILIPS 1.5 T ACHIEVA scanner. MR of the right thigh was performed and T1W, T2W images were obtained in axial sagittal and coronal planes**.** Images showed right rectus femoris atrophy with intra substance T2 and T1 hyperintense foci suggestive of fatty atrophy with fibrosis [Figures 1 and 2].





DISCUSSION

Idiopathic fibrosis or progressive contracture of the quadriceps muscle is an entity in which fibrosis of one or more components of the quadriceps muscle results in extension contracture of the knee .The disease usually starts in first decade of life and exact aetiology of fibrosis is not known. Hnevkovsky (1) was the first to describe this condition and proposed dysplastic aetiology of congenital origin. Contractures of quadriceps muscle were identified in identical twins by Fairbank and Barrett (2) and postulated a genetic origin. Karlen and Chiu (3,4) also proposed this condition to be a congenital disease. Lloyd-Robert and Gunn (5,6) reported quadriceps contractures in infants resulting from multiple injections into the thigh and put forward the theory of contracture as a complication of multiple intramuscular injections.

The reported incidence of the disease is more in mongoloid races (7). Satoshi Nozawa et al (8) reported cases in Japanese individuals and proposed traditional Japanese sitting style as a possible cause. Committee of the Japanese Orthopaedic Association for Muscular Contracture classified the disease into rectus femoris type, vastus type, and mixed type (9)

Magnetic resonance imaging findings included decreased size of quadriceps muscles, fatty atrophy and fibrosis of the muscle. Fatty atrophy will show hyperintense signal on T1W and T2W images with suppression on STIR sequence with fibrosis being hypointense on all above sequences. MR imaging can confirm suspected clinical cases and as such MR imaging should be the imaging modality of choice in these patients.

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