

CASE REPORT

MRI OF OBTURATOR EXTERNUS TEAR: A RARE CAUSE OF HIP PAIN

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ABSTRACT: Obturator externus tear is an extremely uncommon injury. The correct diagnosis is delayed due to nonspecific clinical features and normal x-rays. Isolated obturator externus tear is not reported in literature to the best of our knowledge. We present a case of isolated obturator externus tear diagnosed with MRI.

KEYWORDS: Obturator externus, obturator externus tear, hip pain, MRI.

INTRODUCTION: Differential diagnosis of hip pain is broad and includes abnormalities which are difficult to diagnose without advanced imaging.⁽¹⁾ MRI, with superior soft tissue resolution and multiplanar imaging capability, provides excellent visualisation of a number of abnormalities.⁽²⁾ Obturator externus injury is a rare cause of hip pain. Diagnosis is delayed until MRI, as other investigations are non-contributory.^(3, 4) Isolated obturator externus injury is extremely rare and has not been reported in literature. We report a case of isolated obturator externus injury diagnosed with MRI.

CASE HISTORY: A 12 year old girl, a classical dancer, presented with pain in left hip joint, which started while dancing. There was no relief of symptoms, even after two weeks of rest and NSAID. Because of persistence of symptoms, she was referred to tertiary care hospital.

Clinical examination was inconclusive and the initial clinical diagnosis was piriformis syndrome. Laboratory investigations and radiographs were normal.

MRI of hip was done as per standard protocol. Images were obtained on Seimens Essenza 1.5T MRI scanner (Seimens, Erlanger, Germany) with a standard body coil. MR sequences included coronal STIR (TR/TE, 4900/11), coronal T2 FSE (TR 3000, TE 96), axial T2 (TR 3000, TE 96) and axial STIR. Images were obtained with a standard thickness of 4mm and a matrix size of 256x256. There was hyperintensity in left obturator externus near its attachment with pubic rami, suggestive of partial tear (Fig). All other structures were normal.

Patient was treated conservatively with traction, NSAID and physiotherapy and became symptomatically better. Follow up MRI was done after 18 months, which showed complete resolution of the tear.

DISCUSSION: Obturator externus originates from the pubic rami and inserts on the trochanteric fossa and acts as an external rotator of thigh.⁽⁵⁾ Published case reports suggest that it difficult to make the diagnosis clinically and MRI is needed to make the diagnosis.

The differential diagnosis includes quadratus femoris tear, obturator internus bursitis, obturator externus bursa, obturator externus tendinitis and obturator externus muscle abscess.⁽⁶⁾

Obturator externus muscle is inserted in the trochanteric fossa, which is located medial to the posterior aspect of the greater trochanter. Therefore on T2 weighted images (T2WI), a tear

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of obturator externus muscle should show oedema medial to greater trochanter, whereas a tear of quadratus femoris has oedema posterior to lesser trochanter.⁽⁷⁾ Obturator externus bursa communicates with posterior inferior hip joint, and when enlarged, displaces obturator externus muscle inferiorly. Bursae appear as well marginated high intensity signal lesions on T2WI, whereas tear may be showing irregular margins.⁽⁸⁾ In obturator internus bursitis, a boomerang shaped fluid collection is observed between obturator internus tendon and posterior grooved surface of ischium.^(2,3)

The rarity of this diagnosis in literature may be due to mistaken diagnosis (as in our case, which was initially diagnosed as piriformis syndrome), subtleness of imaging findings and lack of knowledge by the interpreting radiologist.⁽⁶⁾ Radiologists should be familiar with the complex anatomy of hip joint and specific injuries around hip. In review, one case of quadratus femoris injury was misdiagnosed as obturator externus injury by an experienced radiologist.

To conclude, MRI is an important tool in evaluating the many causes of hip pain and radiologists should be aware of the entity of obturator externus muscle tear to make a proper diagnosis, which may be unsuspected clinically.

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MRI Images of pelvis with both hip joints:

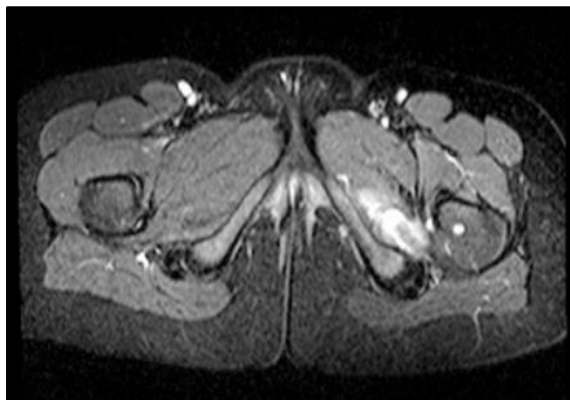


Fig. (a): Axial STIR Image

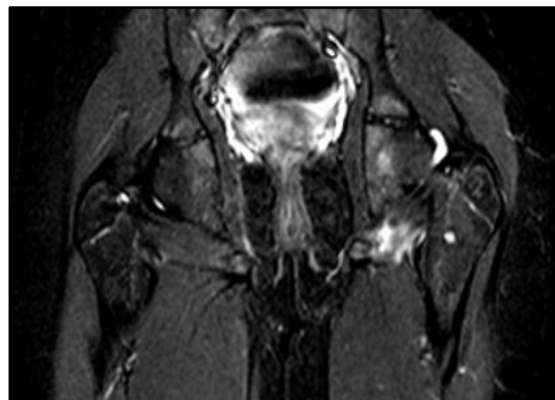


Fig. (b): Coronal STIR Image

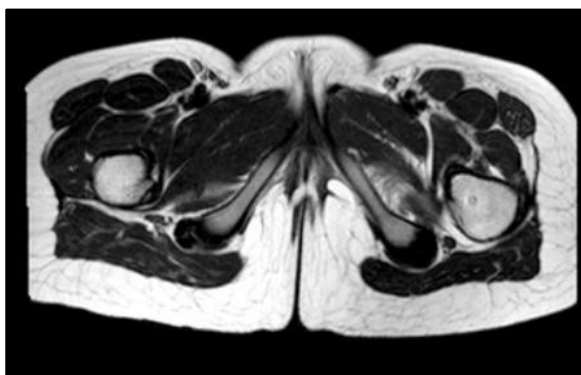


Fig. (c): Axial T2 Image



Fig. (d): Coronal T2 Image

Fig. a, b, c and d showing hyperintense signal involving left obturator externus muscle, suggestive of partial tear.

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