

ATRAUMATIC SPONTANEOUS ILIOPSOAS TENDON RUPTURE IN ELDERLY FEMALE. A RARE CASE REPORT FROM AN ISLAND COUNTRY

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ABSTRACT

Acute hip pain is a commonly encountered condition in elderly patients and can be debilitating depending upon the etiology. Most disabling acute hip pains in elderly are post traumatic and related to fracture. Atraumatic hip pain can be secondary to infection, malignancy, acute exacerbation of osteoarthritis or rarely due to iliopsoas tendon injury. Prompt diagnosis and management is extremely important especially in this vulnerable age group to maintain quality of life. Magnetic Resonance Imaging (MRI) is the gold standard for its diagnosis, but it has its own limitations. We present a rare case of isolated spontaneous left iliopsoas tendon rupture without associated avulsion fracture in an elderly patient which was initially picked up on plain Computed Tomography (CT) and further confirmed on MRI. She was successfully managed conservatively and could resume her normal routine activities.

Keywords: Spontaneous, Elderly, tendon rupture, pain, conservative management, Magnetic Resonance Imaging (MRI)

Introduction

Acute hip pain is one of the common reasons for frequent visits to emergency department in geriatric patients. Trauma is the commonest cause of disabling acute hip pains in elderly and often related to fracture. On the other hand, spontaneous, and atraumatic disabling hip pains are often secondary to infection, malignancy, acute exacerbation of osteoarthritis or rarely iliopsoas tendon (IPT) injury. Although CT scan is not the investigations of choice, but it can aid in diagnoses with high index of suspicion. We present a rare case of isolated spontaneous (IPT) rupture without associated avulsion fracture in an elderly patient.

Case Report

An 82-year-old elderly woman, presented to emergency department with two day's history of sudden onset of

severe and disabling left hip pain with no history of fall or trauma. Prior to this, she was ambulatory and was self-sufficient in her daily routine activities. She is a known case of well controlled essential hypertension. In addition to antihypertensive medications, she was on preprimary aspirin prophylaxis. On examination, she was found to have significant tenderness in the left groin region with limited range of movement at the left hip joint. She was unable to weight bear on left leg and experienced extreme pain on straight leg elevation. Her laboratory workup showed normal WBC count, C-reactive protein, and D-dimer. Her X-ray pelvis and Doppler ultrasound of left leg were negative for any obvious fracture and deep venous thrombosis, respectively. As initial imaging was noncontributory, CT pelvis was performed which showed edema of the peri-articular soft tissue structures anterior to left hip with

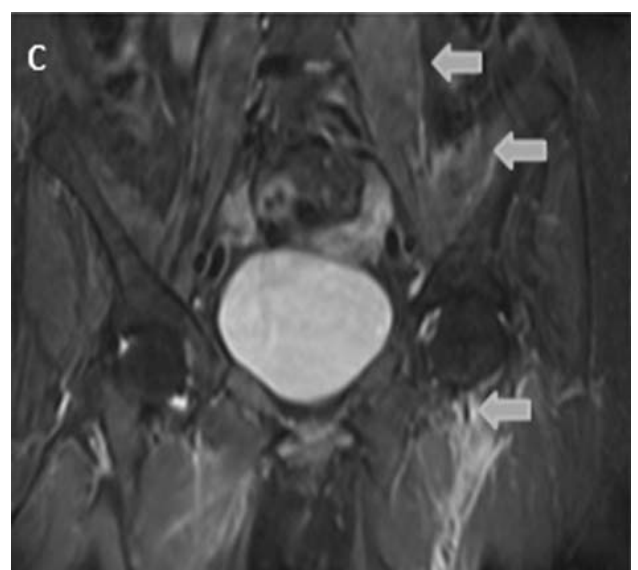
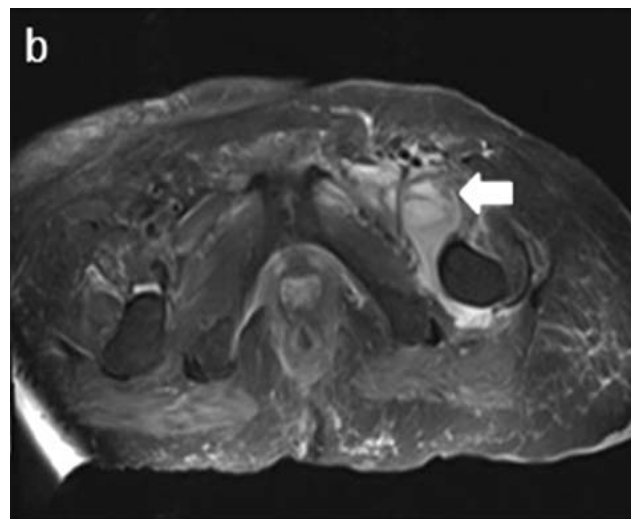
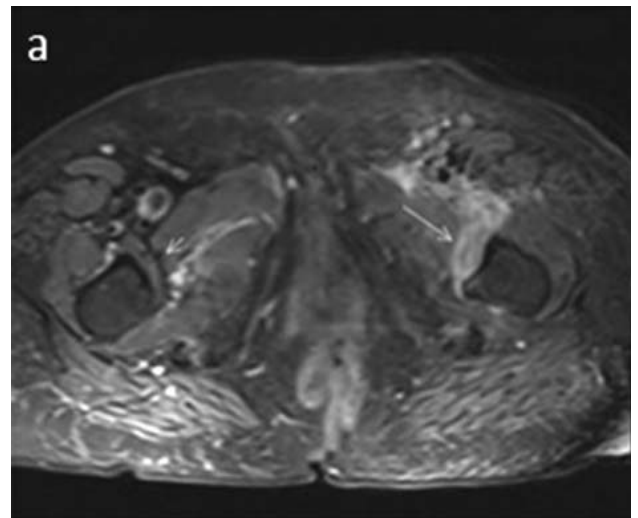
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stranding along iliopsoas muscle without any fracture or hematoma (Fig.1). Considering her history and CT findings, IPT injury was suspected which was confirmed on MRI. MRI showed a complete rupture of left IPT without significant psoas or iliac muscle abnormality (Fig.2a). On the third day of hospital admission, her left hip pain and swelling increased. Repeat MRI showed development of hematoma at the site of complete tendon rupture along with edema and hypertrophy of iliopsoas muscle (Fig.2b). She was managed conservatively with cold compression, rest, and pain medication and discontinuation of aspirin. She was discharged home after 4 days of hospitalization on oral analgesics and physiotherapy. Four weeks later, she improved significantly and could partially resume her daily activities with assistance. Her routine medications were resumed including aspirin and on her subsequent visits, further improvement was noticed.



Figure 1: **a.** CT Pelvis axial section. Note the thickened and edematous left distal iliopsoas tendon near its attachment site to lesser trochanter. Surrounding fat stranding can also be seen. (long arrow). Normal iliopsoas tendon can be seen on right side (short arrow). **b.** CT Pelvis coronal section. Presence of fat between the swollen tendon and lesser trochanter (arrow) in keeping with torn and retracted left iliopsoas tendon.



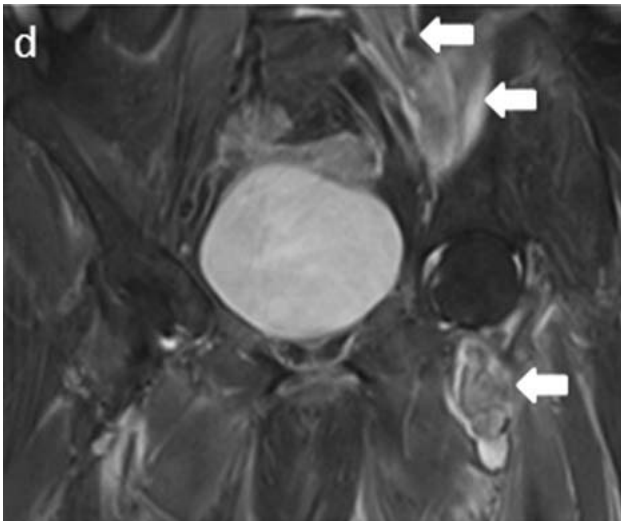


Figure 2: a. MRI pelvis axial STIR sequence. Normal IPT on right side (small arrow). Note soft tissue thickening and fluid at the attachment site of IPT on left side with non visualization of the tendon (long arrow) in keeping with complete tear of left IPT. No abnormal marrow signals are seen in the left lesser trochanter to suggest bone injury. b. Followup MRI pelvis, axial STIR sequence. Interval development of hematoma at the site of injury of left IPT rupture. c. MRI pelvis coronal STIR sequence. Left psoas and iliacus muscle with torn and retracted distal tendon. d. Followup MRI pelvis STIR sequence. Interval development of abnormal signals and edema of left psoas and iliacus muscle suggestive of hematoma.

Discussion

Iliopectineal tendon (IPT) rupture is a rare cause of acute disabling hip pain.^{1,2} It is seen mostly in young adults due to sports related injuries and commonly associated with avulsion fracture of lesser trochanter.³ On the contrary, in elderly population, avulsion fracture of lesser trochanter is almost always pathological and warrants workup for malignancy.⁴

In geriatric population, acute hip pain is a common reason to visit emergency department which is often related to fracture, osteoarthritis, malignancy or infection and rarely due to IPT injury.¹ According to one study, the prevalence of IPT injury is 0.66 %. Moreover, complete spontaneous IPT rupture is extremely rare with prevalence of 0.16%.⁵ Proposed risk factors for spontaneous IPT rupture include age more than 65 years, female gender, osteopenia, metastatic cancer, chronic inflammatory condition, and use of certain medications like steroids and fluoroquinolones.¹ Our patient had two of the risk factors; age and female gender, similar to the case reported by Gillan et al.⁸

Risk factors for hematoma formation associated with IPT injury include use of anticoagulants, uncontrolled hypertension, and underlying bleeding disorders.^{7,8} Our patient also developed hematoma which can be attributed to her intake of Aspirin.

MRI is considered the gold standard for the diagnosis of IPT rupture and in our patient MRI of the hip joint showed strain type III of left iliopsoas muscle and full-thickness tear of left iliopsoas tendon near its insertion onto lesser trochanter. Axial STIR images showed edema in left iliacus muscle, edema and thickening in left iliopsoas tendon at insertion site of lesser trochanter seen with distortion of tendons fiber. Coronal T2-weighted MRI of the pelvis demonstrates diffuse oedema and high signal intensity extending along the left iliopsoas muscle involving superficial deep fascia causing enlargement of the muscle with distortion of muscle fiber and with disruption of the iliopsoas tendon distally at musculotendinous junction with minimal fluid intensity surrounding the tendon noted. These findings are typical of complete and atraumatic tear of Iliopsoas muscle without which was similarly documented by literature. Although, MRI is considered the gold standard, but it has its own limitations including certain metallic implants like cardiac pacemaker. Besides, it is more time consuming, produce unpleasant noise during the scanning process, sense of claustrophobia, and financial constraints.^{10,11} Delay in diagnosis has been reported in literature, however, we believe with adequate clinical history and high index of suspicion, IPT injury can be diagnosed on plain CT scan, as in our case.^{1,8} Similar to previous literature, our patient responded very well to conservative management with pain medication, rest, and short-term discontinuation of aspirin.⁸

Conclusion

Atraumatic IPT rupture is a rare cause of acute disabling hip pain in elderly population. It is expected to see an increase in incidence of such cases due to overall better life expectancy, improved lifestyle, and access to healthcare facilities. IPT injury should be considered in differential diagnosis of atraumatic acute hip pain in elderly age group. With high index of suspicion and awareness of this condition among radiologists, findings of IPT injury can be seen on plain CT scan helping

timely diagnosis of this condition and reserving MRI for selective cases. This will decrease the financial burden and will save the patient from long waiting and scanning time.

CONFLICT OF INTEREST: None.

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