

Ischiofemoral impingement syndrome, incidence and clinical importance

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Abstract

Objective: To evaluate the incidence of ischiofemoral impingement (IFI) syndrome among patients who presented for pelvic MRI as a case of pelvic pain at KHMC.

Methods: 125 pelvic MRI were done between August 2015 and August 2016 , for patients who presented as cases of LBP or pelvic pain at KHMC and were reviewed.

All studies were done on a Skyra 3 Tesla MRI machine with standard protocol of coronal STIR images , axial T1 and T2WI and PD fat sat sequences.

The studies were reviewed for quadratus femoris muscle edema or atrophy and measurements of both quadratus femoris and ischiofemoral spaces were done. Results were analyzed using simple statistical methods.

Results:

7 patients of the 125 had the full blown picture of IFI syndrome accounting for around 5 % of patients.

2 of them had long standing unexplained pelvic pain.

5 of them had the changes after history of pelvic surgery or trauma.

Conclusion: Ischiofemoral impingement syndrome should be considered in the differential diagnosis of patients with LBP, hip pain or unexplained pelvic pain especially in patients with history of pelvic surgery or trauma.

Key words: Ischiofemoral, impingement, pelvic

Introduction

Ischiofemoral impingement syndrome is a clinical entity, meaning that there is narrowing of the space between the ischial bone and the lesser trochanter of the femur impinging upon the quadratus femoris muscle.

MRI is a widely accepted and used method for evaluation of patients with low back pain and pelvic pain and it is usually ordered looking for common causes of these pains including disc diseases, joint problems, inflammatory arthritis or many conditions with the same clinical presentation.

Of these conditions radiologists noticed a clinical entity in which there is edema in quadratus femoris muscle. This muscle has a course between the lesser trochanter of the femur and the ischial spine.

They began to do measurements for this space and found it to be around 20 mm on average.

Another important space to measure is called the quadratus femoris space measured between the insertion of the iliopsoas muscle and the insertion of hamstring muscle.

When these spaces are narrow, impingement of the quadratus femoris muscle with edema and later on atrophy, is noticed.

This was described as ischiofemoral impingement syndrome.

This entity has more prevalence in patients who had previous pelvic surgery or trauma.

The purpose of this study was to evaluate the incidence of ischiofemoral impingement (IFI) syndrome among patients who presented for pelvic MRI as a case of pelvic pain at KHMC.

Methods and Materials

125 pelvic MRI were done between August 2015 and August 2016, for patients who presented as cases of LBP or pelvic pain at KHMC and were reviewed.

All studies were done on Skyra 3 Tesla MRI machine with standard protocol of coronal STIR images, axial T1 and T2WI and PD fat sat sequences.

The studies were reviewed for quadratus femoris muscle edema or atrophy and measurements of both quadratus femoris and ischiofemoral spaces were done. Results were analyzed using simple statistical methods.

The measurements were done to evaluate both the ischiofemoral space which is the narrowest space between the cortex of ischial spine to the cortex of the lesser femoral

trochanter, and the quadratus femoris space which is the narrowest space between the superolateral surface of hamstring muscle and the posteromedial surface of iliopsoas muscle.

The spaces were measured by three radiologists in three separate settings and the results were averaged.

Also, the changes in signal intensity of the quadratus muscle were evaluated for edema, muscle injury or atrophy.

Results

7 patients of the 125 had the full blown picture of IFI syndrome accounting for around 5% of patients. 2 of them had long standing unexplained pelvic pain.

5 of them had the changes after history of pelvic surgery or trauma; three of these had previous MRI studies with nearly normal IFS and QFS and the narrowing occurring after the pelvic surgery.

The average measurement for the IFS was around 19 mm. The average measurement of the QFS was around 16 mm.

The changes involving the quadratus femoris muscle include edema, muscle tear and atrophic changes.

Discussion

The complex anatomy of the pelvis provides a potential space for impingement between the lesser trochanter of the femur and the ischium.

This space is subject affected by the anatomy of the pelvis and the natural support mechanisms so any disruption to the normal anatomy may affect this space such as in cases of bony pelvic surgeries or trauma.

The clinical presentation most of the time is hip pain with radiation to the lower limbs; the pain is more upon standing. The pain can be elicited by variable hip motions mostly if you combine extension, adduction and external rotation at the level of hip joint the patient will feel snapping pain with radiation to the lower limbs.

In this study the average in IFS was around 19 mm with no significant gender differences.

The average measurement of the QFS was around 16 mm.

Other similar studies show nearly similar findings indicating no definite racial differences.

In patients with no IFI the results were nearly the same in both sides.

Conclusion

Ischiofemoral impingement syndrome should be considered in the differential diagnosis of patients with LBP, hip pain or unexplained pelvic pain, especially in patients with a history of pelvic surgery or trauma.

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