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Case Report Open Access

Back Mice Visualized Using Magnetic Resonance Imaging in a Patient with Lumbar Back Pain

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Abstract

Back Mice (BM) is an important differential diagnosis in lower back pain. The diagnosis is typically based on a clinical assessment with palpation of painful freely moveable fatty nodules in the lumbar region. Recently BM have been visualized with musculoskeletal ultrasound. We present a patient with BM treated with block injections. The BM were visualized both sonographically and for the first time with magnetic resonance imaging (MRI). We suggest MRI as a diagnostic supplement in uncertain BM cases.

Keywords: Back mice; Palpation; Magnetic resonance imaging; Musculoskeletal ultrasound

Introduction

Lower back pain (LBP) is a common condition and the leading cause of years lived with disability in both developed and developing countries [1,2]. Several conditions may cause LBP, but in most patients a specific pain-generator cannot be diagnosed, and the condition is defined as non-specific [1]. However, in cases with a pathoanatomical pain-generator, correct diagnosis is essential to initiate a targeted treatment. Back Mice (BM) is a cause of LBP which have been described in both clinical and surgical literature [3-5]. BM is single or multiple fatty nodules of variables size located especially in the lumbar region. It has been proposed that the incidence of BM is 16% in the general population [6]. Mainly, the description of BM comes from older studies, but recently the interest for this condition is increasing and as such, musculoskeletal sonographic demonstration of BM has now been published in two studies [7,8]. We present a case report of a patient with LBP and BM. The diagnosis was done clinically and by ultrasound. Subsequently, magnetic resonance imaging (MRI) in three different sequences demonstrated the BM.

Case Report

A 67-years-old male was referred to a surgical evaluation of two painful masses in the lumbar region. The masses had been present for approximately 5 months and the patient described increasing pain and lacking effect of analgesics. The pain was especially located on the right lumbar mass and was without radiation. The pain was not worsened by any specific position or activity, and the patient was pain free when the masses was left untouched, He experienced increasingly pain and sensitivity with even gentle touches. Clinical examination demonstrated a mobile mass on both sides of the midline on the level of the fifth lumbar vertebral (Figure 1).

Figure 1: Photo of a 67-year-old patient with lower back pain related to Back Mice (BM), red circular markings surround the patient's BM located in the sacroiliac area.

The patient had no neurological deficits nor myalgia and no vascular impairments in the lower extremities. Routine rheumatological blood samples was inconspicuous. Sonographic evaluation of the area demonstrated two 2×1.5×0.5 cm masses located between the superficial and deep fascial planes near the level of posterior superior iliac spine (Figure 2). The patient underwent MRI with fast spin echo (FSE) and short tau inversion recovery (STIR) sequences which visualized the BM (Figure 3). The STIR showed inflammation around the BM especially on the right side.

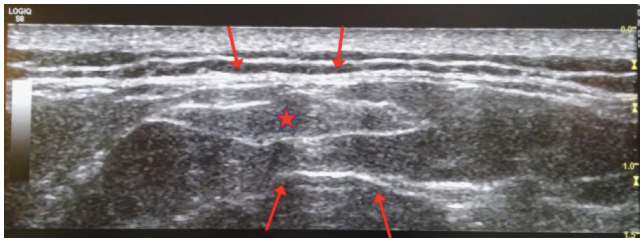

Figure 2: Longitudinel sonographic image of right-sided subfascial fat herniation (Back Mice) in a 67-year-old male, Star = herniated fat, Arrows = superficial and deep fascia.

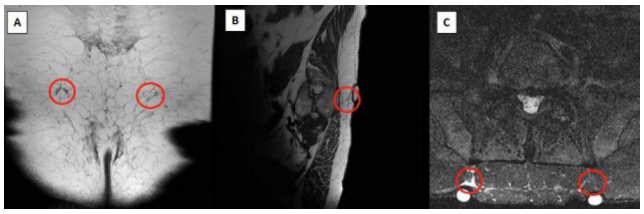

Figure 3: Magnetic resonance imaging (MRI) of the lumbar region in different sequences. A capsule containing fish oil was placed on the skin on top of both back mices (BM), A: Coronal T1-sequence with capsule surrounding the BM especially on the right side, B: Sagital T1 fast spin echo (FSE) sequence illustrating corresponding fat lobuli, C: Axiale short tau inversion recovery (STIR) sequence showing inflammation in the BM especially on the right side.

The patient was treated with local anesthetic and corticosteroids (2 ml Betamethasone and 3 ml Lidocaine) injected directly into both BM. Total pain relieve was instantly obtained and the patient was pain free for 3 weeks. The injection has been repeated 2 times with similar effect.

Discussion

BM is caused by herniation of subfascial fat through a defect in the thoracolumbar fascia. When the fatty tissue is pedunculated the tissue is freely moveable and thus the fat might be strangulated within the fascia. A local pressure on nerves and vessels in the fat will then cause pain. BM has since discovery in 1904 been considered a clinical diagnosis [9]. The examination will uncover palpable, freely moveable fatty tissue nodules commonly in the sacroiliac region [10]. Pressure placed directly on these lesions will reproduce the patient's sensation of pain in the lower back (doorbell phenomenon) [11]. Injection in the BM with local anesthetic and corticosteroids has been suggested as a primary treatment, but also as a diagnostic. Secondary treatment is surgical removal of the nodules, but this approach has not been tested thoroughly in recent times.

Conclusion

It is well known that LBP is a symptom that accompanies several diseases. Diagnoses of a specific pain generator contribute to targeted therapy which is rewarding for both the physician and the patient. Routinely use of MRI is not recommended as degenerative changes are commonly present and increases with age irrespective of the presence of LBP. A prerequisite for the correct diagnosis is knowledge of differential diagnoses that may cause LBP and which tests can be used as diagnostic tools. Therefore, this case report is important as it is the first case demonstrating visualization of BM using MRI with STIR and FSE and, as such, recognizes MRI as a potential tool in BM diagnostic. The diagnosis of BM is typically clinical, and an ultrasound investigation might help the clinician. With this case report, we suggest that MRI can be used for BM diagnostic as a supplement in uncertain BM cases.

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