Diagnosis & Treatment

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Review

Update on trochanteric bursitis of the hip

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Abstract

Introduction

Proximal lateral thigh pain is a common musculoskeletal complaint. Tenderness at the femoral greater trochanteric area is often diagnosed as trochanteric bursitis. This term is probably a misnomer because of evident non-inflammatory pathologies, particularly of the abductor tendons of the hip and is currently referred as the greater trochanteric pain syndrome. Although the clinical presentation seems straightforward it is important to differentiate this extra-articular source from an intra-articular or a lower back source of pain. Non-traumatic acute pain does not require the use of imaging modalities. Imaging of the lower spine and pelvis should be ordered in cases of prolonged pain or uncertain diagnosis. Non-operative treatment that involves modifying activities, physiotherapy, analgesics, steroid injections and shock wave therapy is usually helpful. Nevertheless, despite the above treatments about one-third of the patients suffer from chronic pain and disability. These patients may be candidates for operative intervention such as local decompression, bursectomy and suture of torn tendons. The aim of this review was to discuss trochanteric bursitis of the hip.

Conclusion

The differential diagnosis for greater trochanteric pain syndrome includes pathologies around the hip and lower back. Usually non-operative treatment that includes modified activity, physiotherapy, local injections and shock wave therapy is helpful.

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Introduction

Greater trochanteric pain syndrome (GTPS) is a common clinical diagnosis. Typically, the pain is at the lateral side of the hip around the greater trochanter (GT) region, mostly in middle-aged women and disturbs the activities of daily living. The pathophysiology is not completely understood. One of the earliest descriptions was published by Partridge[1] in 1948 and was often termed the 'great mimicker' because of its similarities to other pathologies. The more familiar term 'trochanteric bursitis' that implies an inflammatory process is probably inaccurate. Recent histological[2], radiological[3] and surgical[4] investigations showed tendinopathy and tears of the gluteal tendons around the GT with no significant inflammation of the bursae. Currently, the more acceptable term is GTPS[5,6]. This article reviews the anatomy, aetiology, diagnosis and updated treatment modalities of GTPS.

Discussion

Anatomy

The gluteus medius, gluteus minimus and tensor fascia lata muscles are the main abductors of the hip joint and stabilise the femoral head inside the acetabulum during motion and weight bearing[7]. The pain in GTPS is related to various pathologies in these tendons with secondary involvement of the surrounding bursae. There are some similarities in function and malfunction between the hip abductors and the rotator cuff tendons of the shoulder[8]. The abductor muscles originate from the posterior aspect of the iliac bone and insert into the femoral GT. Specifically, the gluteus medius inserts into the superolateral aspect and the gluteus minimus into the anterior aspect of the GT.

Bursa is a small fluid-filled sac that reduces friction between bone and soft tissue. Four bursae were described around the GT and deep to the gluteal muscles (Figure 1) while two are consistently found in most people[9]: the subgluteus medius bursa (between the gluteus medius and the GT) and the subgluteus maximus bursa (between the gluteus medius and gluteus maximus, lateral to the GT). The latter is the largest and often accused in causing the pain of 'trochanteric bursitis'. There are other minor bursae that decrease the friction between gluteal muscles, tensor fascia lata and iliotibial band (ITB). The subgluteus minimus bursa is small and located superior and anterior to the GT while, the gluteofemoral bursa is inferior to the GT, adherent to the ITB at the insertion site of the gluteus maximus.

Aetiology

The aetiology of GTPS is variable. Direct injury to the proximal thigh or repeated irritation of the gluteal muscles and ITB against the GT can trigger symptoms. Limb length differences whether static or temporary (i.e. running on uneven surfaces) create mechanical imbalance that may influence the abductor muscles. Although sometimes there is no obvious cause, many related factors were found to be correlated with GTPS such as age, female sex, overweight, gait disturbances and lower back pain[10]. Schapira et al.[11] found that GTPS was correlated with arthritis of the lower back or lower limbs in 91.6% of the cases.

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Review

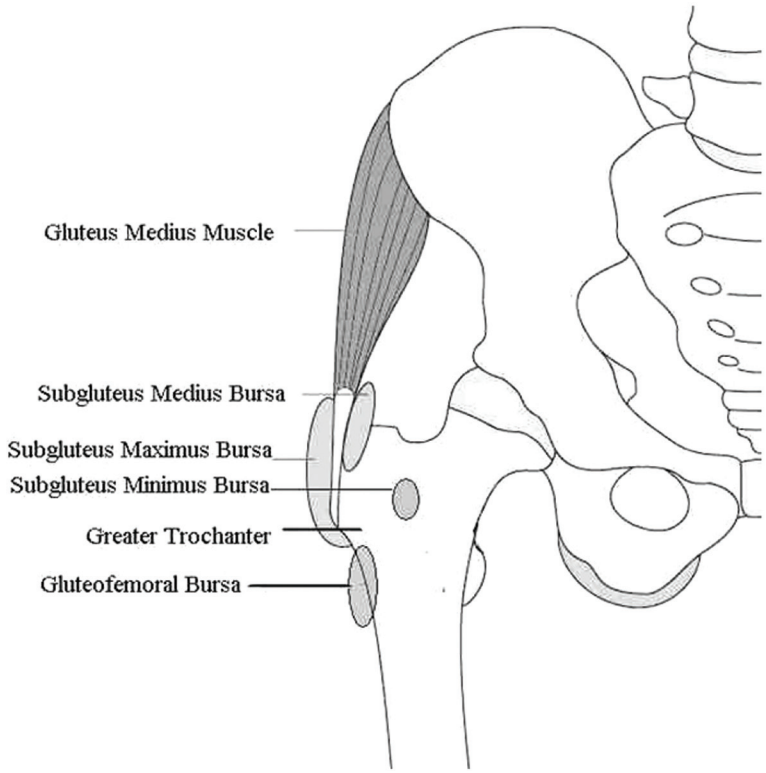

Figure 1: The main bursae around the greater tuberosity of the hip.

Gluteal tendinopathies are common in GTPS, however, not completely understood. Some authors describe the abductors as the rotator cuff of the hip[8]. Tendons may rupture by trauma or degenerative process as sometimes observed in hip fractures or hip replacements, respectively[12]. Abnormal mechanical forces because of pelvic or lower limb deformities create friction and impingement of tendons against the GT.

Examples for systemic factors that may impair tendon tissue are inflammatory arthritis, gout, Paget disease, chondrocalcinosis, diabetes and lengthy steroid treatment[13].

Epidemiology

GTPS is commonly found in 40–60-year-old sedentary patients[14]. Running athletes can develop GTPS as well[15]. The prevalence in the general population is 10%–25% with a female to male ratio of 4:1 mainly because of the anatomical pelvic ring differences. The annual incidence of GTPS is 1.8 out of 1000[16]. GTPS is common in patients with lower back pain (up to one-third) and in lower limb length discrepancy[5,14]. In a multicentre observational study with 3026 patients, aged 50–79 years, the prevalence of unilateral GTPS was 15% in women and 8.5% in men. Bilateral GTPS was found in 6.6% of the women and 1.9% in men[14].

Clinical diagnosis

The typical complaint is lateral pain at the proximal thigh that may radiate to the groin and distally to the knee. It may last for months alternately. The pain aggravates with local pressure (i.e. lying on the side), standing for long periods, pivoting, running and climbing. If an injury is reported it is important to rule out a fracture.

The pain can originate from pathologies of the hip abductor tendons, hip joint, lower back and pelvis.

Patients may have antalgic or Trendelenburg limp due to pain or abductors' weakness, respectively. Commonly there is tenderness at the posterolateral aspect of the GT. The pain aggravates with flexion, abduction and external rotation or with abduction against resistance. It is important to evaluate the strength of the hip abductor muscles and to perform examination of the lower back and hip joint.

The acceptable criteria for clinical diagnosis are lateral hip pain, tenderness at the GT and one of the following: pain at the end of hip rotation, abduction or adduction or pain with abductors contraction or radiating lateral thigh pain[17].

Imaging

For acute GTPS no imaging is required. Plain radiographs of the hip and lower back are recommended for unresolved pain or whenever there is a clinical suspicion of fracture, arthritis or a tumour. Other modalities such as magnetic resonance imaging (MRI) or bone scan are also helpful in the diagnosis of other pathologies.

Pathologies of the abductor musculature are demonstrated well with MRI. Typical findings are thickening of the gluteal tendons, local oedema, high signal or discontinuity of the tendon at the insertion site[18]. Ultrasound can also be used for identifying tendon ruptures although MRI is preferable because of higher specificity and sensitivity[3].

Non-operative treatment

Treatment goals are to correct underlying gait disturbances (i.e. shoe lift for leg length discrepancy, custom-made foot orthotics for foot malalignment, etc.), physiotherapy and exercises, pain relief and anti-inflammatory medications, steroid injections and shock wave therapy. The lower extremities should be evaluated for limb length discrepancies, deformations and limp. The patient should be instructed to restrict weight-bearing activities and repetitious bending in the acute

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setting and avoid direct pressure on the GT area until symptoms resolve. Physical therapy includes stretching of the ITB and tensor fascia lata muscles and strengthening of the quadriceps and hip musculature, especially the abductors. Steroid injections and shock wave therapy were found to be effective in the treatment of GTPS[19,20]. In many cases the relief after local steroid injection is temporary[21]; however, no relief at all implies on other pathologies, mainly of the spine[13].

According to a recent systematic review the optimal treatment for GTPS is unknown[22]. In a randomised controlled study steroid injections had a good immediate effect with symptoms recurrence after a few months while shock wave therapy and exercises had a good but delayed effect of few months in most patients[20].

Although most patients with GTPS respond well to non-operative treatment many continue to suffer from chronic pain and disability. A retrospective study of 164 patients with GTPS found that one-third of them were still symptomatic at one and five years[16]. In this study, steroid injections reduced the probability for chronic pain by three-fold while patients with osteoarthritis had a greater probability to develop chronic pain.

Operative treatment

Operative treatment is considered whenever non-operative treatment fails and other diagnoses were ruled out. The surgery should address problems of and around the abductor tendons of the hip. Although many studies report on good short-term outcome of operative treatment, the techniques were not uniform with small cohorts of patients, retrospective design and vague clinical criteria. After surgery the patient should limit weight bearing for the first 6–8 weeks. Several techniques were described such as release or lengthening of the ITB together with bursectomy, osteotomy of the GT and gluteal tendons repair[23–26]. The approach to the GT area can be performed open or with endoscopic equipment[4,27,28].

Endoscopic surgery for GTPS

Keyhole surgery for hip pathologies has developed significantly in the last decade. As in shoulder arthroscopy[29] it is currently practical to repair and reconstruct labral, cartilage or tendon defects with hip endoscopic minimally-invasive techniques[30]. With an average of two to three small incisions for portal placements the scope is first introduced inside the hip joint to treat intra-articular pathologies and then outside the hip into the space between the ITB and the GT[4]. Usually, release of the ITB and bursectomy are performed together with tendon repair if a significant full thickness gluteal tendon tear is identified. After surgery the patient is required to use crutches with partial weight bearing and limited active abduction for a few weeks.

Conclusion

The differential diagnoses for GTPS include pathologies around the hip and lower back. Usually non-operative treatment that includes modified activity, physiotherapy, local injections and shock wave therapy is helpful. Up to one-third of the patients have recurrent or chronic pain that requires re-evaluation and imaging of the gluteal tendons. Open or endoscopic surgery is indicated in cases of failed non-operative treatment; however, high long-term quality studies are still needed to prove its effectiveness.

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