Greater Trochanteric Pain Syndrome

Diagnosis/Condition:	Enthesopathy of hip region, bursitis of hip, trochanteric tendonitis
Discipline:	DC, ND
ICD-10 Codes:	M70.60, M70.70, M76.10, M76.20
Origination Date:	2000
Review/Revised Date:	01/2025
Next Review Date:	01/2027

Greater Trochanteric Pain Syndrome (GTPS) is one of the most common pain syndromes involving the hip. It is a debilitating condition, characterized by pain situated at or around the greater trochanter of the hip, and tenderness on palpation. This condition was formerly known as trochanteric bursitis and was thought to result from inflammation of one or more bursae of the hip joint. More recent evaluation using surgical, MRI and ultrasound imaging, along with histopathologic studies, suggests there is little or no inflammatory bursal component, so the names may be misleading and in the future these conditions may be separated.[1,2,3,4,5] When inflammation is present it exists as a secondary or associated finding. In addition to the various bursae, hip pain can be generated by tendinopathy, osteoarthritis, acute or chronic injury, referred back pain, and femoacetabular impingement (FAI).

Gluteal tendinopathy may be a more correctly descriptive term for tendon-related hip pain. It is proposed that abnormal hip biomechanics may predispose to gluteal tendinopathy, and although commonly diagnosed in sedentary, overweight people, it is also often seen in runners, possibly due to both poor training habits and technique.[6] GTPS is a repetitive overload tendinopathy and derangement of the hip abductors (gluteus medius and minimus muscles) and rotator muscle-tendon complex.[7] This is similar to the intrinsic changes seen with rotator cuff pathology in the shoulder.[8] The condition appears to some as a muscular dysfunction and there is some association with acetabular anteversion and may be caused by compressive forces of abnormal hip biomechanics.[9,10]

The prevalence of unilateral and bilateral GTPS was 15.0% and 8.5% in women and 6.6% and 1.9% men.[11] The usual age at presentation is over 50 years, and the female-to-male ratio is approximately 4:1.

Frank bursitis may involve one of two major bursae of the hip, trochanteric and ischial, which can both be associated with stiffness and pain around the hip joint. The trochanteric bursa is located between the iliotibial band and the greater trochanter of the femur. GTPS frequently causes tenderness of the outer hip, making it difficult for patients to lie on the involved side,

frequently making sleep difficult. It also causes a dull, burning pain on the outer hip that is often made worse with excessive walking or stair climbing. The ischial bursa is located in the lower buttock area. It can cause dull pain in this area that is most noticeable climbing up hill. The pain sometimes occurs after prolonged sitting on hard surfaces, hence the names "weaver's bottom" and "tailor's bottom."

A definition of GTPS has been proposed based on the history and clinical findings:[12] "A history of lateral hip pain and difficulty with putting on shoes and socks, together with clinical findings of pain reproduction on palpation of the greater trochanter and lateral pain reproduction with the FABER test."

GTPS has been shown to negatively impact quality of life usually due to interference of sleep.[13]

RISK FACTORS[14]

- Female sex
- Knee pain
- Low back pain
- Arthritis (of any etiology) of the hip, knee, and foot
- Spinal disorders: scoliosis, lumbar spinal stenosis, leg length discrepancy
- Painful foot disorders: plantar fasciitis, achilles tendinopathy, bunion, Morton neuroma, or callus
- Compared to healthy controls, participants with GTPS are more overweight, have poorer hip abductor muscle function and altered gait parameters[15]

Subjective Findings and History

- Etiology: may or may not have history of trauma such as a direct blow or a fall; friction trauma from muscle hypertonicity; overuse (e.g., running on uneven surface); genu varum; extreme underpronation; arthritic conditions.
- Well-localized lateral hip pain; may cause radiating pain in the lateral thigh and knee, rarely into the gluteal or low back.
- Pain increases with ambulation, prolonged standing, rising from a chair, and ascending inclines.
- Patient unable to sleep on the involved side. Patients often note that they awaken at night when rolling onto the affected side.
- Often aggravated by climbing stairs.
- Degree of discomfort often proportional to degree of activity.

Objective Findings

- The most useful part of the clinical assessment when evaluating patients with hip pain is to ask patients to "point to where the pain is". Patients with GTPS and its rare mimickers point to the lateral hip, whereas patients with subgluteal or retrotrochanteric pathology

point to the posterior hip, and those with articular hip disease point to the groin and the anteromedial thigh.

- Postural and Gait evaluation, e.g., walk with limp, leg length inequality.
- Palpation: Edema and tenderness over the greater trochanter with tenderness being the key physical exam finding. Palpation at the lower portion of the trochanter with the hip and knee flexed may elicit a "jump sign" (localized tenderness). Tight gluteal muscles.
- There is no one specific clinical test that confirms GTPS. Combinations of tests may improve accuracy.[16]
- In people reporting lateral hip pain, a negative gluteal tendon (GT) palpation test followed by a negative resisted hip abduction test significantly reduced the posttest probability of GTPS from 59% to 14%. In those with a positive GT palpation test followed by a positive resisted hip abduction test, the posttest probability of GTPS significantly shifted from 59% to 96%.[17]
- Single leg stance; pain within 30 seconds of standing on one leg.
- Orthopedic/neurologic examination: Patrick or Flexion, ABduction, External Rotation, and Extension (FABERE test), or Flexion, ADduction, and External Rotation (FADER test) log roll and local tenderness show fair inter-examiner concordance. Ober test is less specific (Ober's test evaluates a tight, contracted tensor fasciae latae and iliotibial band).[18]
- Range of motion: decreased hip rotation.
- Joint play: examine lumbar, SI and hip joint motion.
- Can progress to calcific infiltration seen on x-ray.

Imaging

In a patient with nontraumatic lateral hip pain, imaging studies are rarely informative and often not necessary as part of the initial evaluation, especially if the history and physical examination suggest the presence of an isolated GTPS. An exception is acute calcific tendinitis, which should be suspected when the lateral hip pain is extreme and relentless.

- Conventional radiography; An anteroposterior view of the pelvis may be informative
- Ultrasonography[19]
- Magnetic resonance imaging[20]

Assessment

- The clinical impression should indicate the specific anatomical structures involved and clinically correlate them with the mechanism of injury, history, subjective complaints, and objective findings.
- Differentiate this condition from iliopectineal and iliopsoas bursitis, which may present with anterior hip pain, and ischial bursitis, which may present with sciatica and pain referred from lumbar spine or SI joint. Also differentiate degenerative joint disease (DJD) of the hip by physical exam or x-ray.
- Regional anesthetic block may be helpful in differentiating the pain of GTPS from that of referred pain from the lumbosacral spine or other conditions.
- GTPS is usually considered a clinical diagnosis.

Differential Diagnosis

A variety of other conditions that can result in lateral hip pain are described below:

- Hip joint disease
- Fibromyalgia
- Calcific tendinitis of the gluteus medius and/or gluteus minimus tendons[21,22]
- Femoroacetabular and Ischiofemoral impingement[23,24,25]
- Septic and tuberculous trochanteric bursitis[26,27]
- Snapping hip syndrome
- A mass lesion in the peritrochanteric region
- Piriformis syndrome and other subgluteal or retrotrochanteric conditions[28,29,30]
- Iliolumbar ligament strain
- Lumbar deep somatic pain radiation[31,32,33]
- Sacroiliac disease[34]
- Pseudo sciatica
- Herpes zoster
- Neuropathies that cause trochanteric or inguinal pain
- Stress fracture of the femoral neck
- Osteonecrosis of the femoral head

Plan

The main goals of treatment, regardless of the specific intervention, should be to manage load and reduce compressive forces across the greater trochanter, strengthen gluteal muscles, and treat comorbidities.[35] Conservative treatments are effective most of the time.[36]

Diet and Lifestyle Changes:

- Weight reduction[37]
- Avoid running on uneven surfaces
- Minimize stair climbing, walking up hills
- Avoid hip adduction across the midline
- Sit with hips positioned higher than knees
- Avoid crossing legs while sitting
- Stand with equal weightbearing through lower limbs
- Avoid side-lying to reduce compressive tendon load

Herbal Medicine (Western):

- Herbs for inflammation: ginger, bromelain, evening primrose oil, turmeric/curcumin, devil's claw (Harpargophytum procumbens), capsaicin cream, Phytodolor, and avocado/soya.

Supplements and Nutrients:

- Essential fatty acids[38]
- Glucosamine/chondroitin[39]

Pharmaceuticals (OTC):

- Medications: NSAIDS, simple nonopioid analgesics like paracetamol (acetaminophen)[40]

Immobilization, Bracing, Taping:

- Kinesiotape

Physical Modalities (Western):

- Physical Therapy Modalities to control inflammation and pain
- Three weekly Extracorporeal shockwave therapy (ESWT) sessions offer short-term pain relief at 2 to 4 months for patients with GTPS[41]
- Low dose external beam radiotherapy[42]
- Low-level laser therapy

Ancillary TEAM Modalities:

- Dry needling[43,44]

Movement and Exercise:

- The current evidence supports a strong recommendation for exercise as first line treatment in patients clinically diagnosed with GTPS. Compared to corticosteroid injection, exercise is superior in increasing the likelihood that a patient experiences a meaningful global improvement.[45]
- Structured exercise leads to short-term (1-3 months) improvements in functional outcomes.[46]
- Load modification, exercise, and optimization of biomechanics.[47]
- Home exercises: eccentric contractions and stretching hip abductors and gluteal muscles. Systematic reviews have concluded that eccentric exercise is more effective than rest in ameliorating tendon pain at various anatomical sites.[48]

Manual Adjustments/Manipulation:

- Manual therapy as provided by DCs, NDs, LAcs, and LMTs include manual and instrument assisted soft tissue massage, foam rolling, PNF (Proprioceptive neuromuscular facilitation)/stretching of gluteal and hip abductor muscles.
- Joint manipulation of hip, pelvis, and any other lower extremity joint dysfunction (Caution: side posture adjusting on involved hip may aggravate condition).
- Correct leg length inequality.

Injection Therapies:

- Injectables such as hyaluronic acid and gluco-corticosteroids may provide short term analgesia, but long-term outcomes are mixed.[49,50]
- Patients who received platelet rich therapy (PRP)51,52 experienced reduced pain as the VAS decreased significantly.[53]
- Current evidence suggests that PRP and extracorporeal shockwave therapy (ESWT) may provide short-term (1-3 months) pain relief.[54]

Surgical Intervention:

- Surgery is usually reserved for when the condition has become refractory and conservative measures have failed.[55]

Outcome Assessment Tools

- VISA-G - GTPS-specific outcome measure
- HOOS - Hip Disability and Osteoarthritis Outcome Score
- HHS - Harris Hip Score
- iHOT - International Hip Outcome Tool

Length of Treatment

- Conservative therapy: 1-3 months**.**

Referral Criteria

Referral to an appropriate specialist, e.g., physiatrist, orthopedic surgeon, for further evaluation and treatment.

- Appropriate after 1-3 months of care without symptomatic or functional improvement.
- Surgical consult.[56]

Resources for Clinicians

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Resources for Patients

American Academy of Family Physicians. Bursitis of the Hip: Overview https://familydoctor.org/condition/bursitis-of-the-hip/

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