

Content

- [1 Search Strategy](#)
- [2 Definition/Description](#)
- [3 Epidemiology/Etiology](#)
- [4 Characteristics/Clinical Presentation](#)
- [5 Differential Diagnosis](#)
- [6 Outcome Measures](#)
- [7 Examination](#)
- [8 Medical Management](#)
- [9 Physical Therapy Management](#)
- [10 Key Research](#)
- [11 Clinical Bottom Line](#)
- [12 References](#)

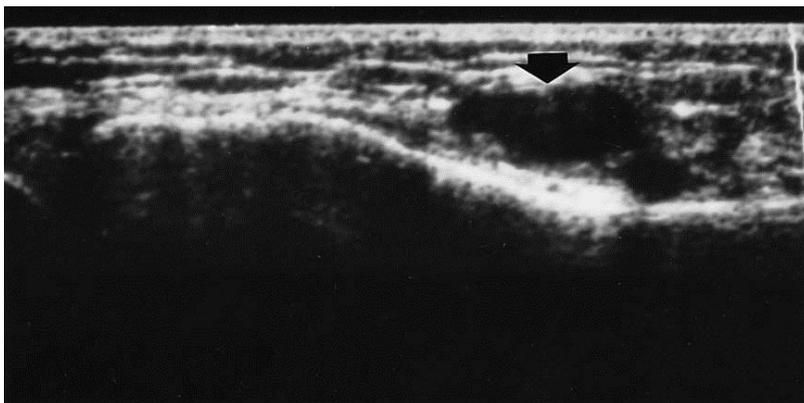
Search Strategy

Databases Searched: Pubmed, Web of Knowledge, PEDro

Keywords: pes anserine bursitis, knee bursitis, medial knee pain, physical therapy, treatment, bursitis

Definition/Description

Pes anserinus [bursitis \(www.physio-pedia.com/Bursitis\)](http://www.physio-pedia.com/Bursitis), also known as intertendinous bursa, is an inflammation of the bursa of the conjoined insertion of the M. Sartorius, M. Gracilis and M. Semitendinosus muscles along the proximal medial aspect of the tibia [4]. The bursa is located approximately two inches below the medial knee joint line between the pes anserinus tendons. The bursa doesn't communicate with the knee joint [3,5].



Longitudinal echogram of a patient with pes anserinus bursitis.

J. Uson et al., 2000, Pes anserinus tendinobursitis: what are we talking about?, Scand J Rheumatol

Epidemiology/Etiology

The exact incidence is unknown. Bursitis is believed to result from overuse and friction to the bursa due to excessive valgus, flatfoot position, rotatory stresses to the knee or by direct contusion[4,7].

Reports suggest that anserine bursitis is more common in overweight middle-aged females. We can explain this by the fact that women have a wider pelvis, resulting in angulation of the knee in the frontal plane, which leads to more pressure in the area of insertion of the pes anserinus by genu valgum [2].

Diabetes mellitus also seems to be a predisposing factor[1,2].

Anyone with osteoarthritis of the knee is also at increased risk for this condition. The etiology of the pain most likely results from a complex interaction between structural changes secondary to osteoarthritis and peripheral and central pain processing mechanisms[2].

The etiologies of pes anserinus bursitis also include trauma such as a direct blow to this part of the knee. A contusion to this area results in an increased release of synovial fluid in the lining of the bursa. The bursa then becomes inflamed and tendered or painful[3].

Overuse of the hamstrings, especially in athletes with tight hamstrings is a common cause. Improper training, sudden increases in distance run, and running up hills can contribute to this condition[7].

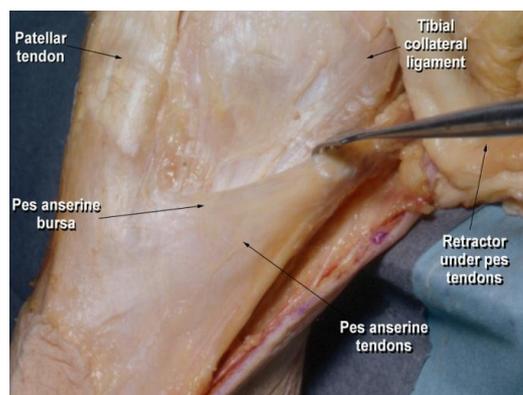
We can say that an inflamed bursa is not a primary pathology. It's a consequence of an earlier complication.

Characteristics/Clinical Presentation

It is characterized by spontaneous anteromedial knee pain on climbing or descending stairs, tenderness at the PA and, occasional local swelling [3,4,7].

Other clinical presentations are:

- Decreased muscle strength
- Gait deviations
- Decreased function
- Decreased ROM
- Postural dysfunction/impaired lower extremity biomechanics



Source: <http://emedicine.medscape.com/article/308694-clinical>

Differential Diagnosis

- **Medial meniscus lesion** (http://www.physio-pedia.com/Meniscal_Lesions) and **osteoarthritis**: Pain and sensitivity in the medial compartment while in the pes anserinus bursitis they are located inferomedial to the medial joint interline[1,2].
- Knee pain secondary to **L3-L4 radiculopathy** is associated with lumbar pain without pain on digital pressure of the anserine region[2].
- Stress maneuvers of the medial collateral ligament, with or without instability, contribute for the diagnosis of **lesions of the medial collateral ligament**[1,2].

- **Stress fractures** of the proximal medial tibia may produce pain in the area of the pes anserine bursa[2].
- **Panniculitis** of the underlying medial knee fat[1].
- **Extra-articular cystic lesions:** synovial cyst, ganglionic cyst, parameniscal cyst, pigmented villonodular synovitis, synovial sarcoma[3].
- In addition to the conditions listed above, other problems to be considered include the following: atypical medial meniscal cysts, juxta-articular bone cysts, semimembranosus bursitis, tibial collateral ligament bursitis[4].

Outcome Measures

Sinography* is the best method for establishing the diagnosis when other imaging modalities, including MRI and CT, are not feasible[3].

* radiography of a sinus following the injection of a radiopaque medium

Examination

History is typical and is characterized by pain in the proximal medial region of the knee, approximately 5 cm below the medial joint interline of the knee[2].

The pes anserine bursa can be palpated at a point slightly distal to the tibial tubercle and about 3-4 cm medial to it (about 2 fingerbreadths)[7].

The examiner will also assess hamstring tightness. This is done in the *supine* position (lying on your back), head back and arms across the chest. The hip is passively flexed until the thigh is vertical (use the spirit level if available). Maintain this thigh position throughout the test, with the opposite leg in a fully extended position. The foot of the leg being tested is kept relaxed, while the leg is actively straightened until the point when the thigh begins to move from the vertical position. The thigh angle at this point is recorded.

Measure the minimum angle of knee flexion with the thigh in the vertical position. If the leg is able to be fully straightened, the angle would be recorded as 0.

With the sports-related variant of pes anserine bursitis, symptoms may be reproduced by means of resisted internal rotation and resisted flexion of the knee. With the chronic variant in older adults, flexion or extension of the knee usually does not elicit pain[7].

Tests to examine if there is a sign of pes anserinus bursitis.

- [Thomas test](http://www.physio-pedia.com/Thomas_Test) (http://www.physio-pedia.com/Thomas_Test)
- Hamstring flexibility
- Leg length measurement
- McMurray's
- Ligamentous stability tests
- Faber and Scour tests

Medical Management

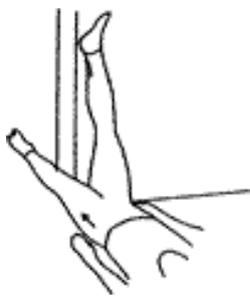
The initial treatment of pes anserinus bursitis should include relative rest of the affected knee and non-steroidal anti-inflammatory drugs[4]. Additional modalities, including local injection of a corticoid such as methylprednisolone, are indicated in some cases.

Intrabursal injection of local anesthetics, corticosteroids, or both constitutes a second line of treatment[4].

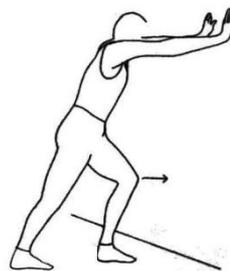
Surgical treatment is indicated in cases with failure to conservative treatments. Simple incision and drainage of the distended bursa can improve symptoms in some reported cases[3,4]. The bursa may be removed if chronic infection cannot be cleared up with antibiotics. After Surgery, if the bursa is removed, you follow the same steps of rehabilitation and recovery outlined under physical therapy management[2].

Physical Therapy Management

- Relative rest: avoid stairs, climbing, or other irritating activities to quiet down the bursa and the related pain[4].
- Ice application in the early inflammatory phase[4].
- Wrapping an elastic bandage around the knee to reduce any swelling or to prevent swelling from occurring[4]. Be careful not to increase friction.
- Leg stretching exercises: hamstring stretch, standing calf stretch, standing quadriceps stretch, hip adductor stretch, heel slide, quadriceps isometrics, hamstrings isometrics[4].
- Afterwards: the CKC may include single-knee dips, squats and leg presses. Resisted leg-pulls using elastic tubing are also included.
- Ultrasound has been documented as effective in the reduction of the inflammatory process in pes anserine bursitis [2].



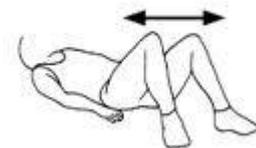
Hamstrings stretch



Standing calf stretch



Standing quadriceps stretch



Hip adductor stretch



Heel slide



Quadriceps isometrics



Hamstrings isometrics

Key Research

Milton Helfenstein et al., 2010, Anserine syndrome, Escola Paulista de Medicina

Clinical Bottom Line

Pes anserine bursitis is commonly associated with osteoarthritis or/and overweight females. A typical characteristic is spontaneous anteromedial knee pain on climbing or descending stairs. The differential diagnosis is very encompassing. It doesn't disappear without treatment such as rest, ice application, stretching and ultrasound. Another often used treatment is intrabursal injection of corticosteroids.

References

- [1] J. Uson et al., 2000, Pes anserinus tendino-bursitis: What are we talking about?, Scan J Rheumatol (level of evidence = 3A)
- [2] Milton Helfenstein et al., 2010, Anserine syndrome, Escola Paulista de Medicina (level of evidence = 2A)
- [3] Ting-Wen Huang et al., 2003, Polyethylene-Induced Pes Anserinus Bursitis Mimicking an Infected Total Knee Arthroplasty (level of evidence = 3B)
- [4] W.J. Rennie et al., 2005, Pes anserine bursitis: incidence in symptomatic knees and clinical presentation. (level of evidence = 2A)
- [5] Mohamed K. Osman et al., 2011, Swelling Around a Child's Knee (level of evidence = 3B)
- [6] Tammy White et al., 2009, Central States Orthopedic Specialists
- [7] <http://emedicine.medscape.com/article/308694-clinical>

Oxford Centre for Evidence-based Medicine Levels of Evidence (March 2009)

Level	Therapy/Prevention, Aetiology/Harm	Prognosis	Diagnosis	Differential Diagnosis	Economic and Decision Analysis
1A	SR (with homogeneity) of RCTs	SR (with homogeneity) of inception cohort studies; CDR validated in different populations	SR (with homogeneity) of Level 1 diagnostic studies; CDR with 1b studies from different clinical centres	SR (with homogeneity) of prospective cohort studies	SR (with homogeneity) of Level 1 economic studies
1B	Individual RCT (with narrow Confidence Interval)	Individual inception cohort study with > 80% follow-up; CDR validated in a single population	Validating cohort study with good reference standards; or CDR tested within one clinical centre	Prospective cohort study with good follow-up	Analysis based on clinically sensible costs or alternatives; systematic review(s) of the evidence; and including multi-way sensitivity analyses
1C	All or none series	All or none case series	Absolute SpPins and SnNouts	All or none case series	Absolute better-value or worse-value analyses
2A	SR (with homogeneity) of cohort studies	SR (with homogeneity) of either retrospective cohort studies or untreated control groups in RCTs	SR (with homogeneity) of Level >2 diagnostic studies	SR (with homogeneity) of 2b and better studies	SR (with homogeneity) of Level >2 economic studies
2B	Individual cohort study (including low quality RCT; e.g., <80% follow-up)	Retrospective cohort study or follow-up of untreated control patients in an RCT; Derivation of CDR or validated on split-sample only	Exploratory cohort study with good reference standards; CDR after derivation, or validated only on split-sample or databases	Retrospective cohort study, or poor follow-up	Analysis based on clinically sensible costs or alternatives; limited review(s) of the evidence, or single studies; and including multi-way sensitivity analyses
2C	"Outcomes" Research; Ecological studies	"Outcomes" Research		Etiological Studies	Audit or outcomes research

3A	SR (with homogeneity) of case-control studies		SR (with homogeneity) of 3b and better studies	SR (with homogeneity) of 3b and better studies	SR (with homogeneity) of 3b and better studies
3B	Individual Case-Control Study		Non-consecutive study; or without consistently applied reference standards	Non-consecutive cohort study, or very limited population	Analysis based on limited alternatives or costs, poor quality estimates of data, but including sensitivity analyses incorporating clinically sensible variations.
4	Case-series (and poor quality cohort and case-control studies)	Case-series (and poor quality prognostic cohort studies)	Case-control study, poor or non-independent reference standard	Case-series or superseded reference standards	Analysis with no sensitivity analysis
5	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"