

## Pes anserinus tendinitis

- Popliteus and biceps tendinitis
- Fabellitis and medial gastrocnemius

Sebastien Parratte, Herve Collado,  
Boris Maurel, Jean-Noël Argenson  
Sainte Marguerite Hospital, Marseille, France  
[www.chirurgie-arthrose.com](http://www.chirurgie-arthrose.com)



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## Pathology of the crazy runner




## Back to the medical school 1

4 stades of Blazina modified by Roels et Martens

Stade 1: Pain after sport practice without sport limitation  
Stade 2: Pain at the beginning of the training and with fatigue  
Stade 3: Pain limiting the sport practice  
Stade 3 bis: permanent pain=> stop sport practice  
Stade 4: tendon rupture



## Back to the medical school 2

### Three classical signs

Pain at the palpation of the tendon

Pain during isokinetic tests

Pain during maximal passive stretching





## Pes anserinus tendinitis

- First description in the literature: 1937
- Moschowitz reported « knee pain almost exclusively in women, who complained of pain when going downstairs or upstairs, upon rising from a chair, or referred difficulty when flexing the knees »

*Moschowitz E. Bursitis of sartorius bursa: an undescribed malady simulating chronic arthritis. JAMA 1937; 109:1362-6.*

## Anatomy

*High level of constrains  
=> 3 muscles*

- 3 loges
- 3 different proximal insertions
- 1 commune distal insertion
- 3 nerves



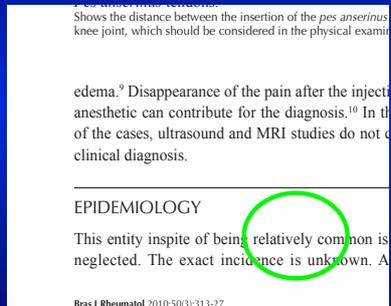


Pictures Courtesy of  
Pr B Parratte  
Lab of Anatomy, Besançon

## Anatomy

### Anserine Bursa

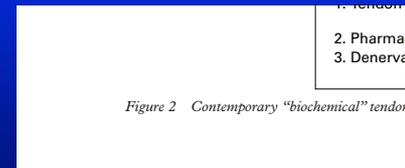
One of the 13 bursa of the knee



## Real Problem?

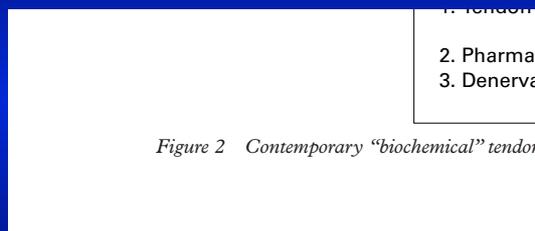
- Bursa?
- Tendon?

### Old Model



## Pes anserinus tendinitis

Current model : probably Tendon and Bursa



Khan KM et al. Where is the pain coming from in tendinopathy?  
It may be biochemical, not only structural, in origin. Br J Sports Med;34(2):81-84, 2000.

## Classical causing factors =Overuse and maluse

- Biking with automatics pedals
- Long distance runners, trail +++
- Tight hamstring and inadequate stretching
- Improper training program: everyday practice, rarely on a twice a week runner or biker

## Other causing factors

- Diabetes, osteoarthritis, rheumatoid arthritis
- Trauma, post-surgery
- Bone exostosis
- Damage to the medial meniscus
- Pes planus, Genu valgum,
- Infection, Foreign body reaction

## Diagnosis

- Clinical +++
- Pain pain in the medial aspect of the knee when going upstairs or downstairs
- Sensitivity to palpation (digital pressure) on the area of insertion
- Provocative maneuvers: not always positive

## Diagnosis

- Echo
- MRI

⇒ Can be normal  
 ⇒ Oedema

⇒ Eliminate another cause of pain:

- ⇒ Overload+++
- ⇒ Sub-chondral fracture
- ⇒ Meniscus?



## Treatment

« No Sport »



## Conservative treatment

- Not the same sport everyday
- Training adaptation
- Stretching
- Infiltration: Echo-guidance

Accuracy of ultrasound-guided versus unguided pes anserinus bursa injections. [Finnoff JT, Nutz DJ, Henning PT, Hollman JH, Smith J. Mayo Clinic](#)

## Gastrocnemius

The medial head more commonly than the lateral head

Medial head more active

CLINICALLY PAIN



## Diagnosis

US  
 Godolinium MRI



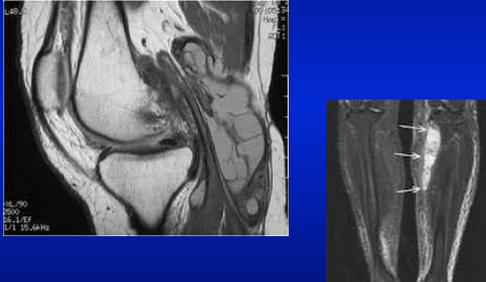
**Fig. 24.** Axial T2 sequences of patient thought to have a muscle strain compared with opposite side. White dots representing clot in the vein found to have a pulmonary embolism seen on CT angiography

## Eliminate a deep vein thrombosis



patient thought to have a muscle strain compared with opposite side. White dots representing clot in the veins. Found to have a pulmonary embolism seen on CT angiography treatment

## Rupture of a popliteus cyst?



## Conservative Treatment

- Deep tranverse massages
- No sport 6 weeks
- Ice
- No infiltration



Fabella= little bean  
11 to 13 % of the knee

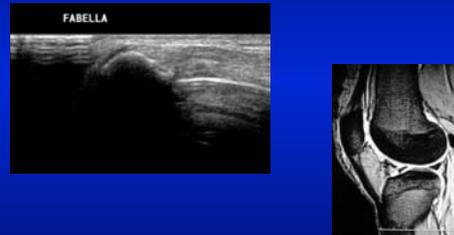
Pain from chondromalacia younger patients  
Pain from arthritis in older patients

Palpation at the posterior aspect of the knee



## Confirm the diagnosis

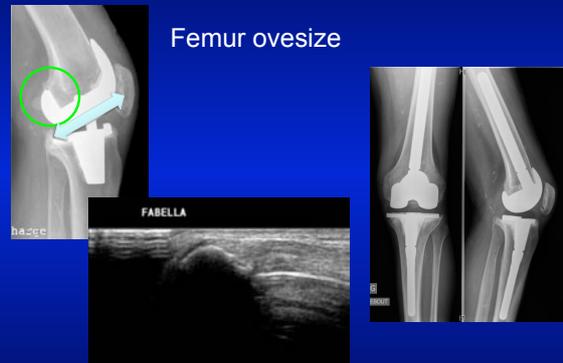
- Ultrasound + infiltration test



## Treatment

- Conservative with infiltration, anesthetic
- Resection under arthroscopy  
*J Knee Surg. 2007 Dannawi Z. Arthroscopic excision of the fabella.*
- Remove arthritic hypertrophic fabella at the time of TKA

## After TKA



## Popliteus

### • Anatomy



- Internal rotator of the tibia on the femur
- Assists in flexion of the knee
- Stabilizer of the posterolateral corner of the knee (flexion)
- More a problem of the muscle than a tendon problem

*Pictures Courtesy of Pr B Parratte  
Lab of Anatomy, Besançon*

## Diagnosis

- Pain and discomfort postero-lateral aspect of the knee on a mid-flexed knee
- Pain when running downhill or descending stairs
- Pain when resistance to knee flexion with tibia in external rotation

## MRI

- Injected MRI may be needed



## Conservative Treatment

- Rehabilitation
- Guided infiltration
- Correction of the static problem

## Instability is another problem



## Biceps tendinitis

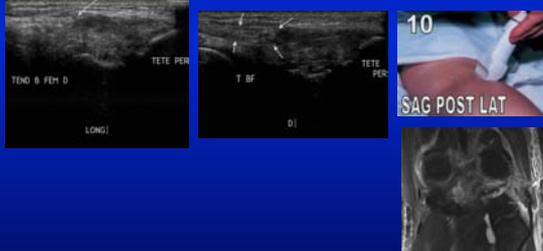
- Biceps
- Long head: bi-articular
- Short : mono-articular 2 different innervation



*Pictures Courtesy of Pr B Parratte  
Lab of Anatomy, Besançon*

## Diagnosis

- Pain
- Snapping
- Associated with postero-lateral lesion



Available online at [www.elsevier.com/locate/jknee](http://www.elsevier.com/locate/jknee)

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Short communication

### Snapping knee: An unusual biceps femoris tendon injury

Rajeev Bansal<sup>a,\*</sup>, Chris Taylor<sup>a</sup>, Ashvin L. Pimpalnerkar<sup>b</sup>

<sup>a</sup>West Centre for Distance Medicine, Radcliffe Road, Salford, Manchester M7 4RT, UK  
<sup>b</sup>South West Hospital NHS Trust, Sutton Road, Sutton Coldfield, Birmingham B75 7JG, UK

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Author	Year	Age	Sex	Location of lesion	Associated findings
Lokke et al. [6]	1974	23-M	Male	Present	Abnormal anterior insertion on proximal tibia
Hernandez et al. [1]	1981	16-M	Present	Present	Abnormal anterior insertion on iliofemoral band
Kanathorn and Wilkerson [4]	2004	20-M	None	Present	Two distal bifurcations of long head tendon
Back and Madhoo [2]	2004	28-M	None	Present	Permanent iliofemoral band with normal tendon insertion
Boyd and Gochman [3]	2004	22-M	None	Present	Bilateral abnormal anterior insertion on proximal tibia
Our case	1994	19-M	Present	Absent	Repair to reflected site of long head of biceps femoris

Recurrent anterior part of tendon posteriorly  
 Tendon torn and tunnel in iliofemoral band  
 Anterior view and arthroscopic posterolaterally  
 Bilateral partial iliofemoral excision, re-close on one side  
 Tendon repaired through tunnel in iliofemoral band

## Conclusion

- Overuse and mal-use problem
- Anatomical factors
- Comprehension
- Prevention
- Cooperation between sport doctors, radiologist and sometimes surgeons