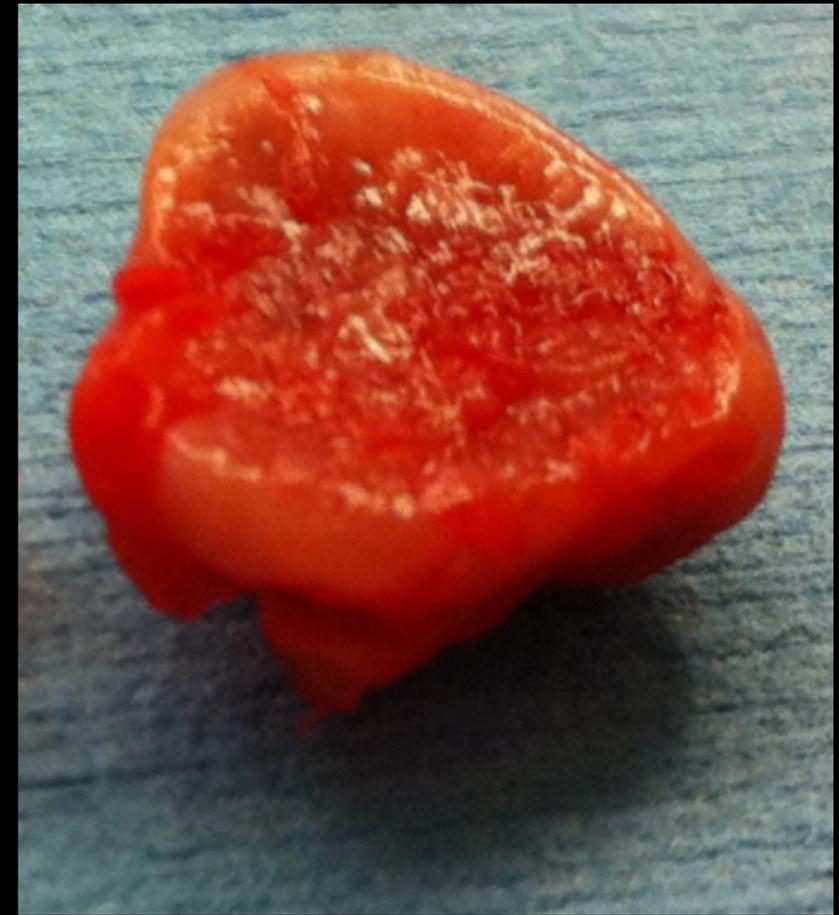


# Does Fabella pathology exist?

**Philippe Landreau, MD**  
**Consultant Orthopaedic Surgeon**  
**Orthocure & Mediclinic**  
**Dubai**  
**UAE**



# 33 yo male

## Triathlete

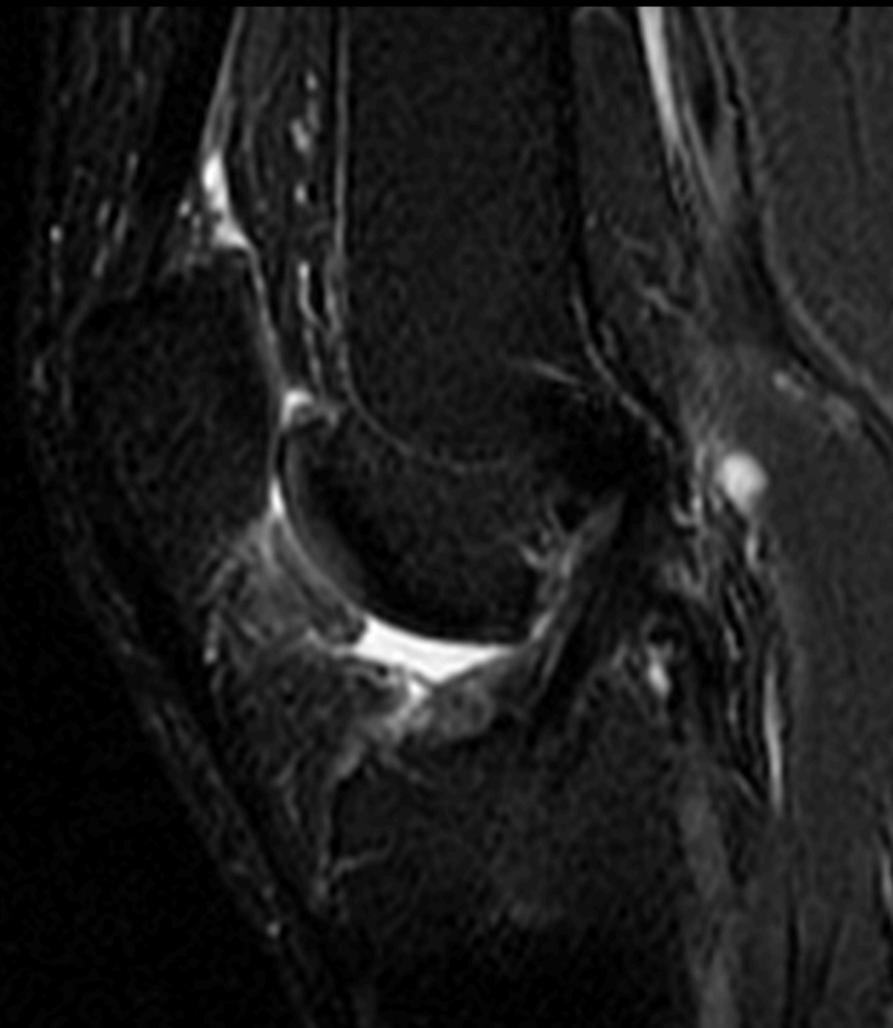
- After a triathlon 6 months ago, he started to feel right knee posterolateral pain with locking episodes particularly when he turned suddenly during swimming and he had to physically unlock it.
- ACLR 9 years previously, good evolution. No complain until the current episodes.
- Had arthroscopy elsewhere 3 months ago with the suspicion of meniscus tear: no improvement after the arthroscopy.

# 33 yo male

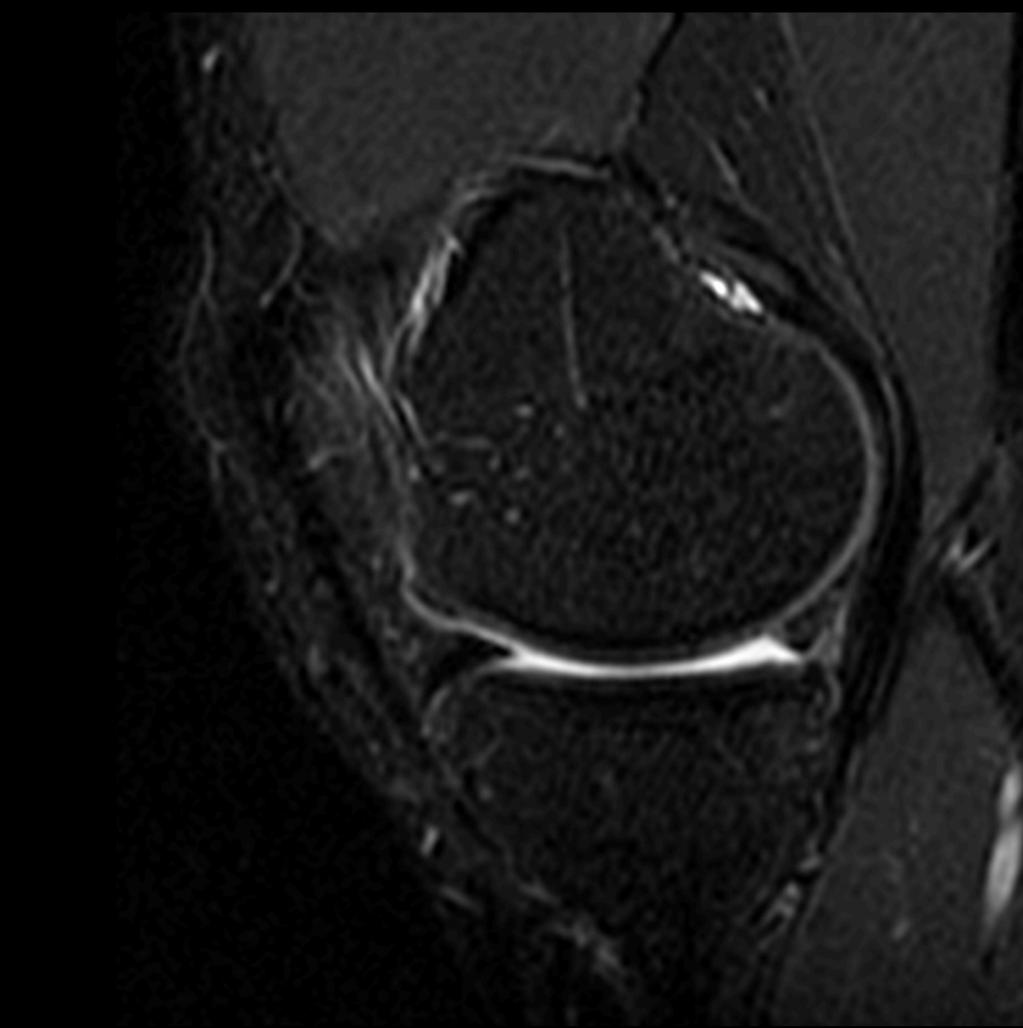
## Triathlete

- Physical examination:
- FROM.
- No effusion.
- Lachman grade 1 end point, pivot shift negative.
- Posterolateral tenderness on the lateral joint line and on posterior soft tissue.
- Grinding test negative. Not possible to reproduce the locking episode.

# Imaging



ACL graft intact



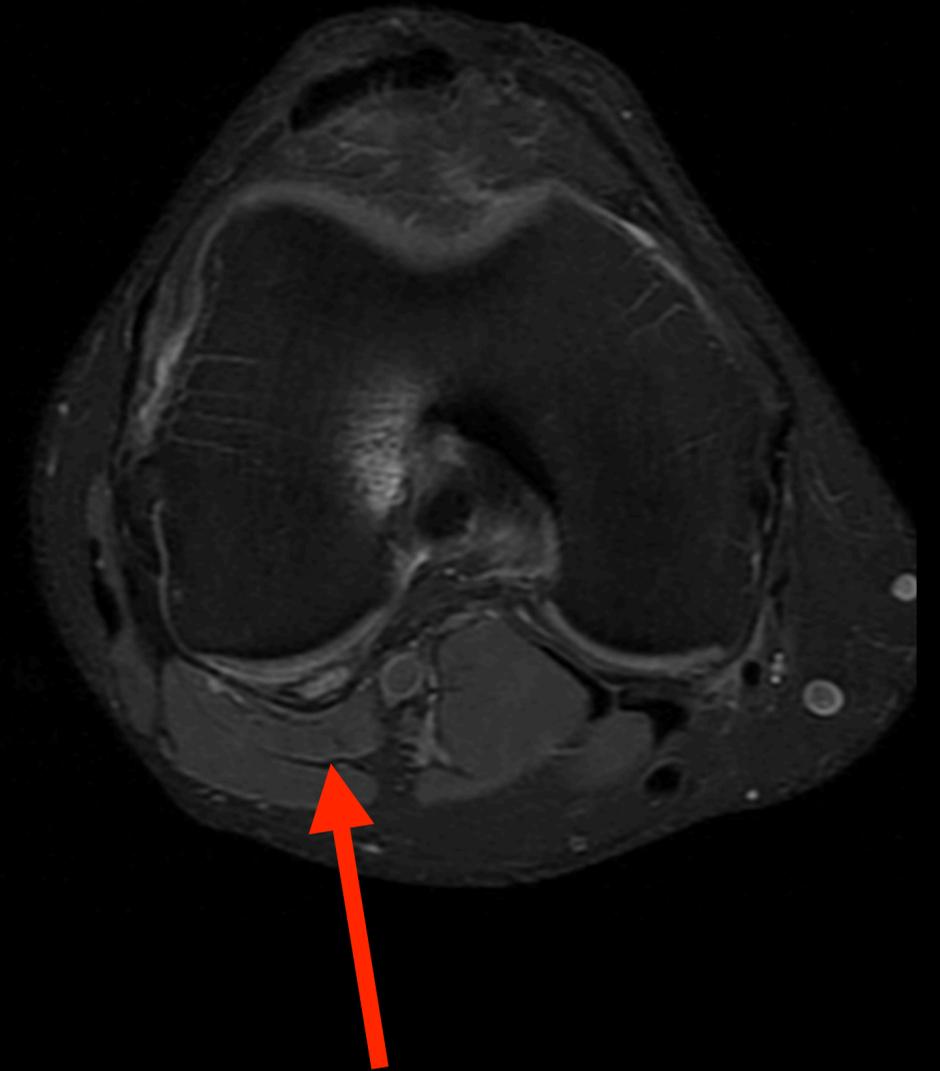
Medial meniscus



Lateral meniscus

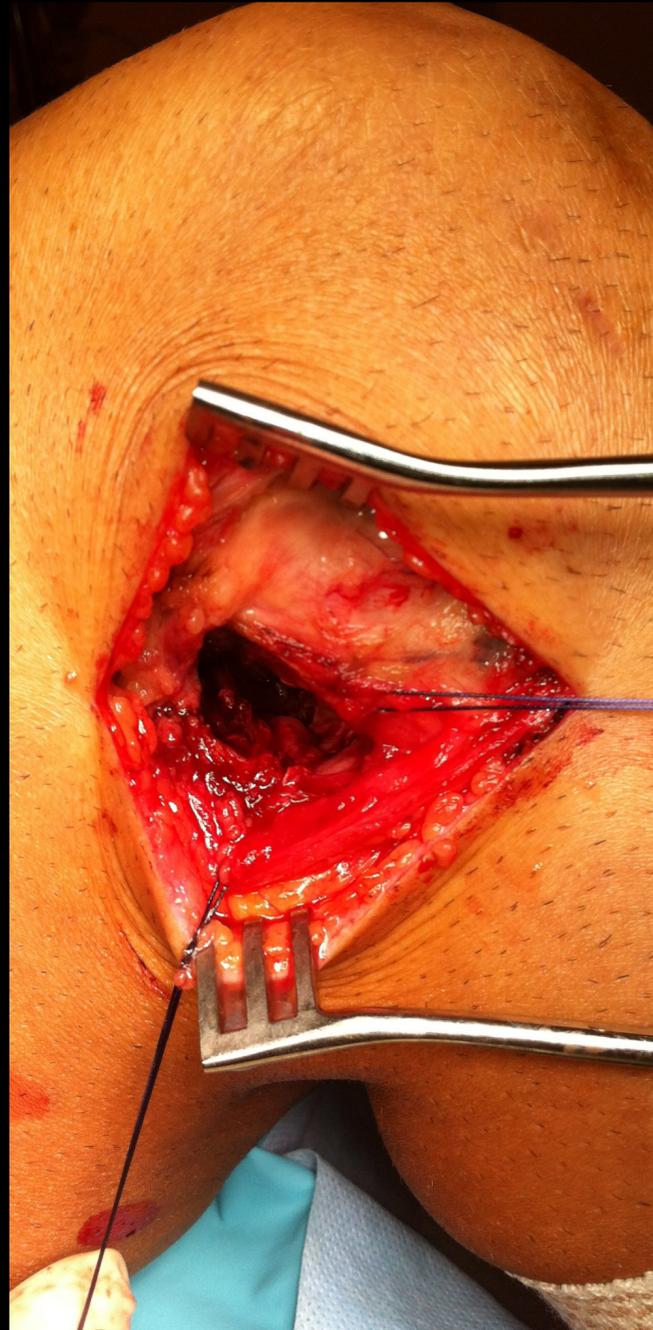
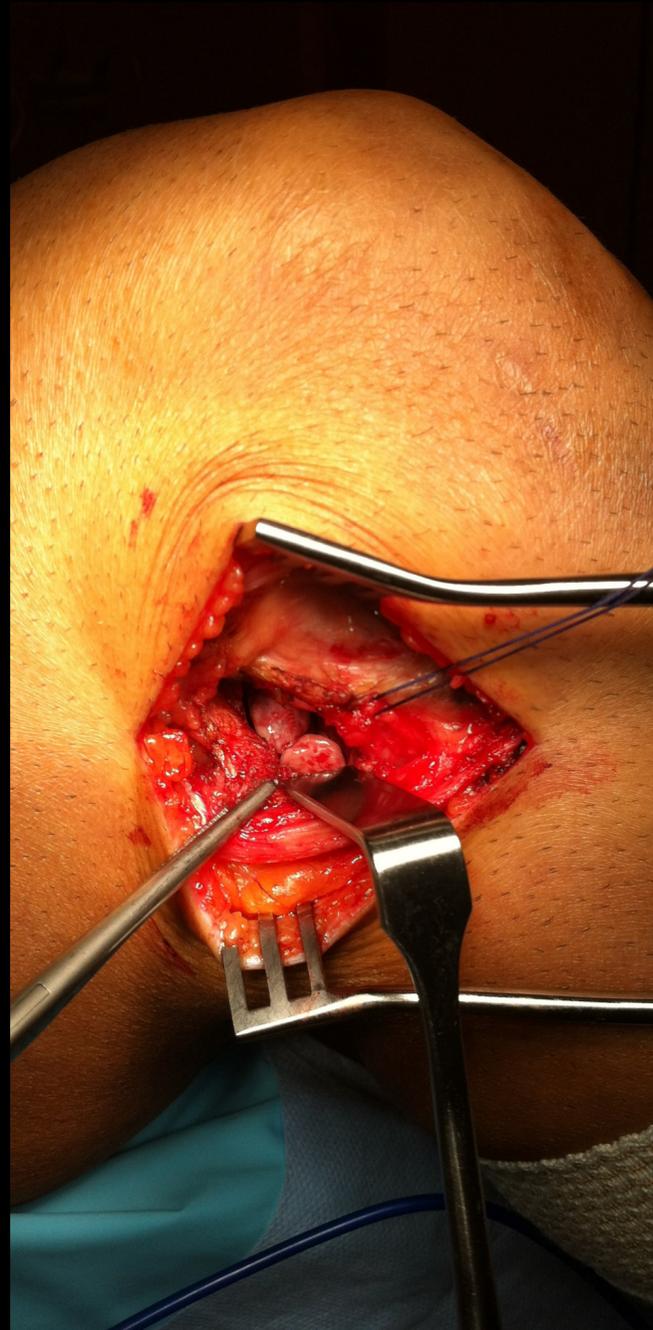
# Imaging

Fabella: no obvious pathology



# Arthroscopy: no articular cause of symptoms

## Posterolateral arthrotomy

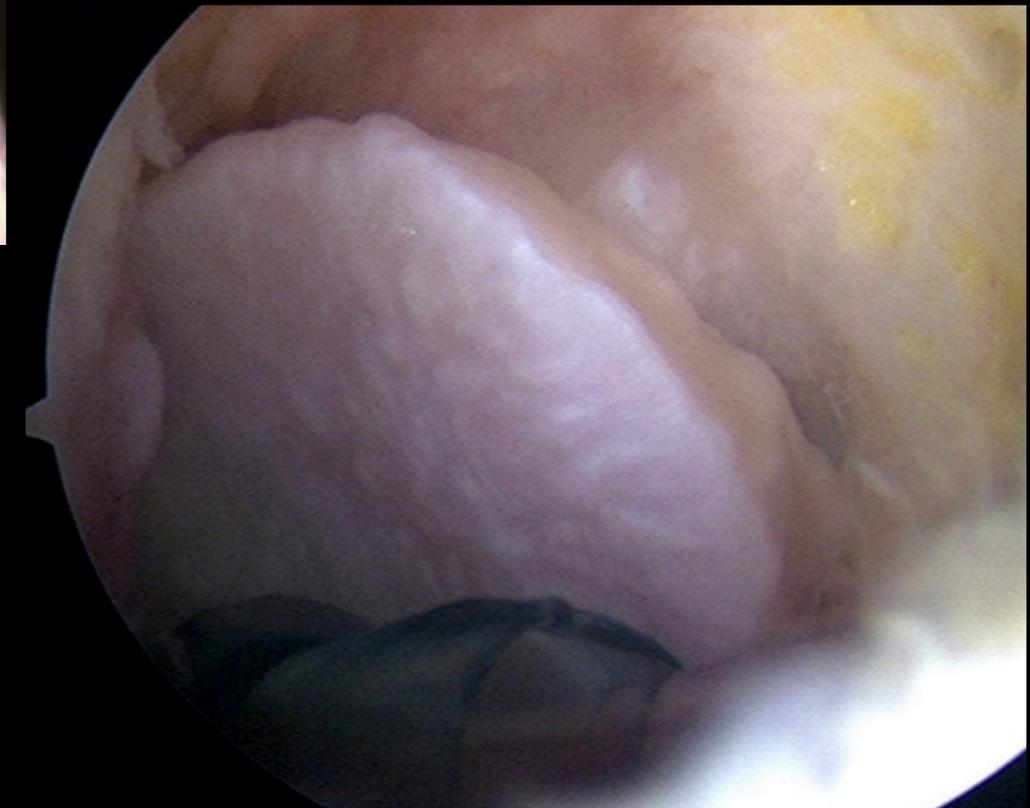


# What is the fabella?

- **Sesamoid bone** embedded in the lateral head of the gastrocnemius muscle which often articulates directly with the lateral femoral condyle



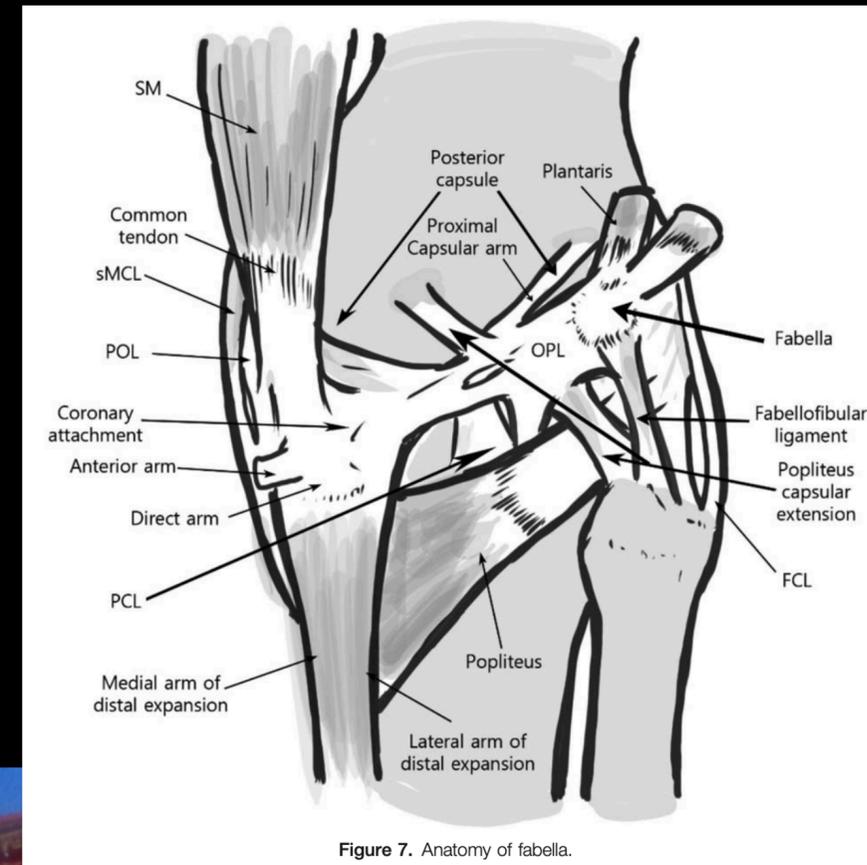
Driessen et al.



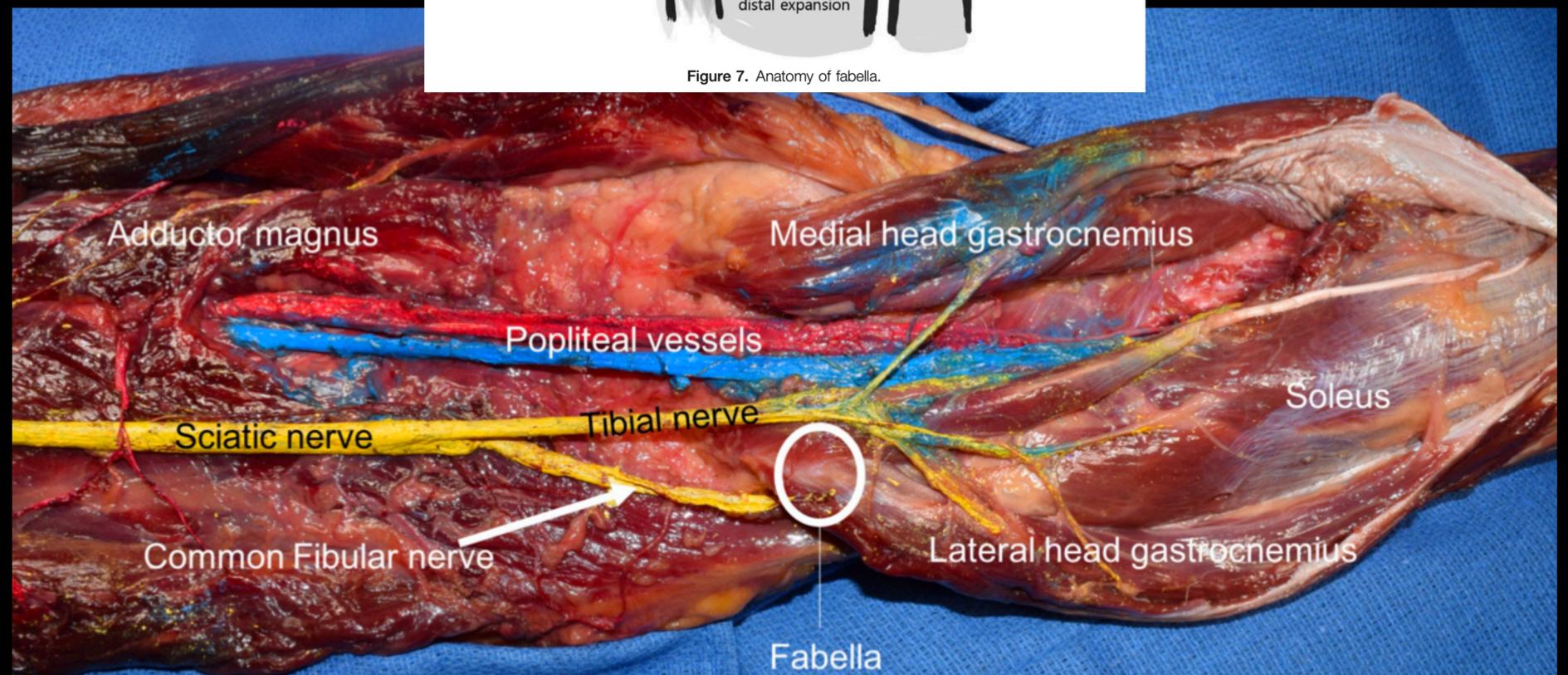
Weng et al.

# Function?

- **Stabilization** of the medial femoral condyle and the fabella complex, which is made up of the plantaris and gastrocnemius muscles and the arcuate, fabellofibular, fabellopopliteal, and oblique popliteal ligaments



Kim et al.



# Facts about fabella

- 5 mm to 20 mm in diameter
- **10% to 30%** of the population and it occurs bilaterally in approximately 80% of cases
- **Asian population**, the fabella has a reported prevalence of **25% to 87%**

# Facts about fabella

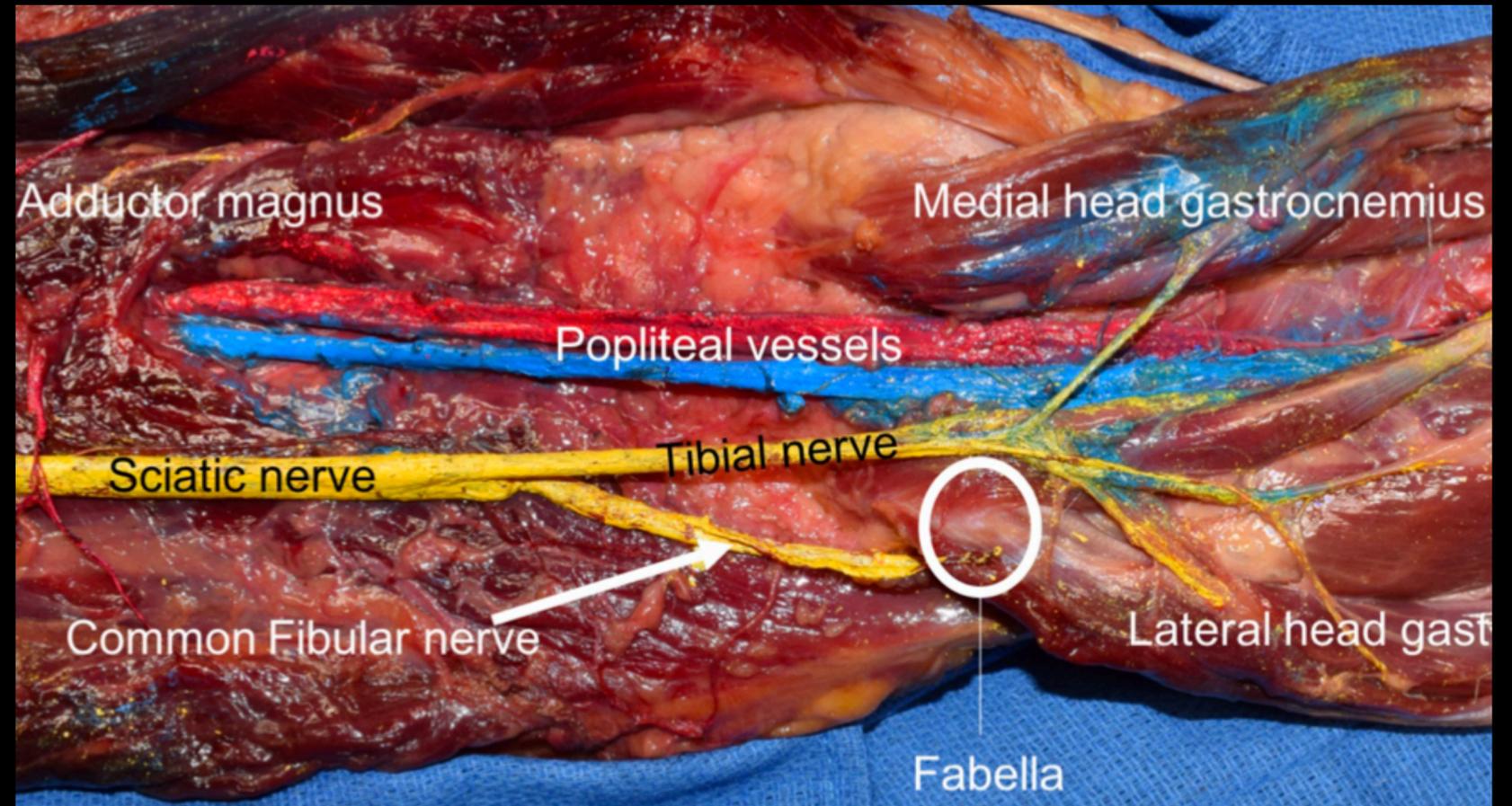
- Bony (25%) or cartilaginous (75%)
- Probably an endochondral ossification ==> probably formed from mechanical stress on a tendon ==> evolutionary standpoint where humans moved from a quadrupedal to bipedal posture

Jin ZW, Shibata S, Abe H, Jin Y, Li XW, Murakami G: A new insight into the fabella at knee: the foetal development and evolution. *Folia Morphol (Warsz)*. 2017, 76:87-93.

Kawashima T, Takeishi H, Yoshitomi S, Ito M, Sasaki H: Anatomical study of the fabella, fabellar complex and its clinical implications. *Surg Radiol Anat*. 2007, 29:611-616.

# Facts about fabella

- Proximity with **Common Fibular Nerve**
- The nerve can be located posterior to the fabella: increased risk of palsy



Tabira Y, Saga T, Takahashi N, Watanabe K, Nakamura M, Yamaki K: Influence of a fabella in the gastrocnemius muscle on the common fibular nerve in Japanese subjects. Clin Anat. 2013, 26:893-902.

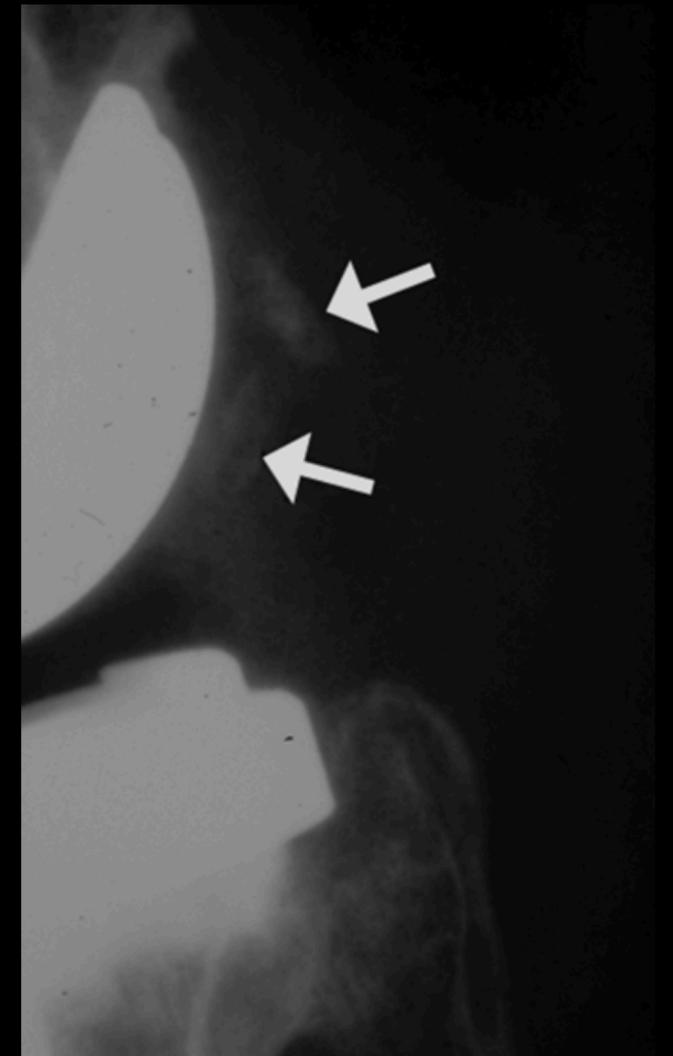
# Pathology and Diagnosis

- Rare but should be considered as Differential Diagnosis when patients complain posterolateral pain +/- mechanical symptoms.
- **Fabella Syndrom: posterolateral pain increasing in full knee extension**

Driessen A, Balke M, Offerhaus C, et al.: The fabella syndrome - a rare cause of posterolateral knee pain: a review of the literature and two case reports. BMC Musculoskelet Disord. 2014, 15:100.

# Pathology and Diagnosis

- Stress fractures (after TKA)
- Snapping
- Pseudolocking
- Common Fibula nerve palsy
- Popliteal Artery Entrapment Syndrome (PAES)



Theodorou et al.

Theodorou SJ, Theodorou DJ, Resnick D: Painful stress fractures of the fabella in patients with total knee arthroplasty. *AJRAmJRoentgenol*. 2005, 185:1141-1144.

Takebe K, Hirohata K: Peroneal nerve palsy due to fabella. *Arch Orthop Trauma Surg*. 1981, 99:91-95.

# Treatment

- Physical therapy
- Local injection
- Shock Wave therapy
- Fabellectomy



Zipple JT, Hammer RL, Loubert PV. Treatment of fabella syndrome with manual therapy: a case report. *J Orthop Sports Phys Ther.* 2003 Jan;33(1):33-9

Seol PH, Ha KW, Kim YH, Kwak HJ, Park SW, Ryu BJ. Effect of Radial Extracorporeal Shock Wave Therapy in Patients With Fabella Syndrome. *Ann Rehabil Med.* 2016 Dec;40(6):1124-1128.

Weng SP, Wu TM, Chien CS, Lin SH. Treatment of Fabella syndrome with arthroscopic fabellectomy: a case series and literature review. *BMC Musculoskelet Disord.* 2021 Aug 30;22(1):748.

# Conclusion

- Rare occurrence
- but may cause posterolateral pain or mechanical, neurological or even vascular symptoms
- Be aware of the fabella “option”

Thank you

