

Technical note: The deep infrapatellar bursa release in Total Knee Arthroplasty for improved access

A Kumar, M Alkinj, A Aster, T Smith

Citation

A Kumar, M Alkinj, A Aster, T Smith. *Technical note: The deep infrapatellar bursa release in Total Knee Arthroplasty for improved access*. The Internet Journal of Orthopedic Surgery. 2007 Volume 8 Number 1.

Abstract

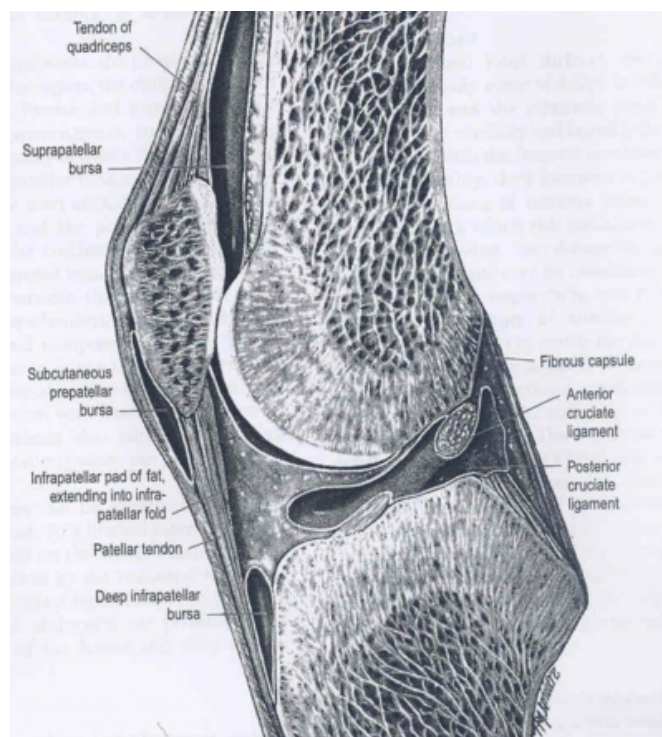
A good exposure to access the knee joint is vital in the successful completion of a Total Knee Arthroplasty(TKA). Various approaches has been described in attempts to increase the exposure during a TKA. Everting the patella is usually a routine step in tricompartmental knee replacement surgery (1). Cadaveric studies has shown that eversion of the patella during TKR gives better valgus alignment compared to subluxation of the patella laterally(2). Eversion of the patella can sometimes be difficult and it can cause avulsion of the patellar tendon if undue tension is exerted on the tendon (3). We describe the deep infrapatellar bursal release to make the eversion of the patella much easier and to minimise the stress on the patellar tendon insertion.

ANATOMY

The deep infrapatellar bursa occupies the space between the patella tendon and the anterior aspect of the proximal tibia, proximal to the insertion of the patella tendon onto the tibial tuberosity (Fig.1).

Figure 1

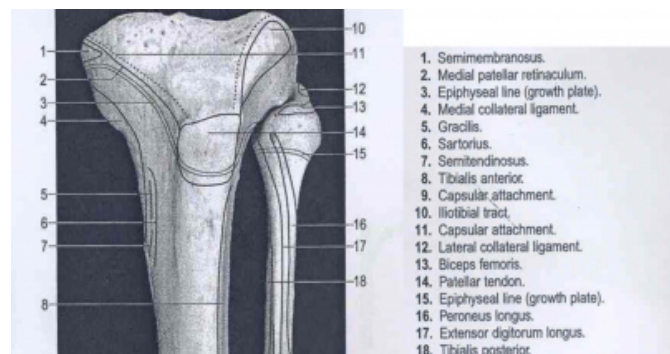
Figure 1: Sagittal section through the knee joint showing the deep infrapatellar bursa and its relationship to the patellar tendon and anterior tibial cortex.



In an average sized adult knee there is roughly 2 finger-breadth of space between the tibial plateau and the insertion of the patellar tendon on the tibial tuberosity (Fig. 2).

Figure 2

Figure 2: Anterior aspect of the upper tibia showing attachment of the patella tendon .

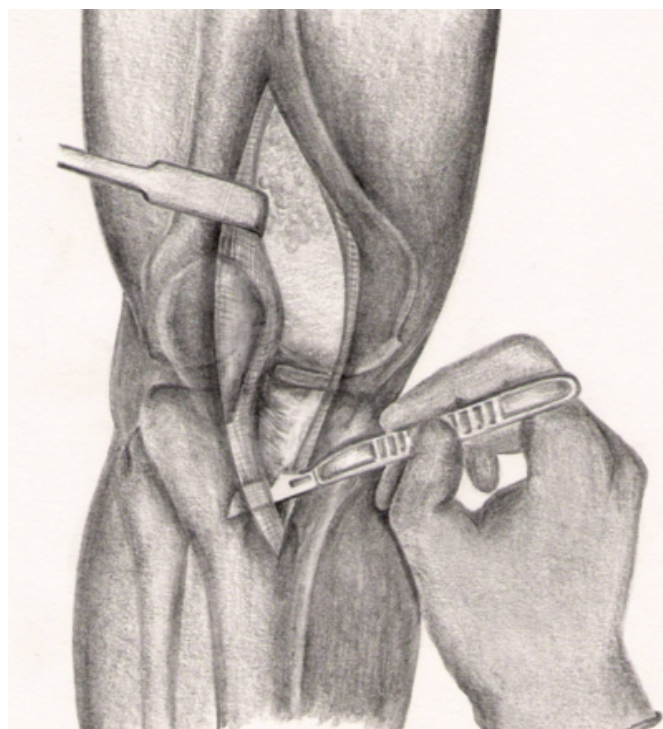


TECHNIQUE

Once a medial parapatellar approach is made, the medial aspect of the patellar tendon is identified. In most arthritic knees warranting a knee replacement, the deep infrapatellar bursa would be seen fibrosed and it would be stuck to the anterior aspect of the tibia. This would limit the excursion of the tendon while trying to evert the patella. A knife is inserted into the space between the patellar tendon and the anterior aspect of the tibia with the sharp edge directed towards the joint line. The infrapatellar tissue is released by the knife from inferior to superior (figure3).

Figure 3

Figure 3: Diagram showing release of the infrapatellar bursa during total knee arthroplasty (the skin and subcutaneous tissue has been drawn transparent to appreciate the procedure better).



This additional step makes the patellar tendon more relaxed and eversion of the patella can be easily facilitated. The senior author (TS) has done more than 1500 total knee arthroplasties using this technique. We recommend this procedure as a routine step in all total tricompartmental knee arthroplasties.

CORRESPONDENCE TO

AJ Shyam Kumar, Flat-23, Rhos Gwyn, 493 Abergele road, Colwyn bay, United Kingdom LL29 9AE Tel: 0044 1492518842 Fax: 0044 1492518842 E mail: ajshyamkumar@hotmail.co.uk

References

1. Insall JN, Scott WN. Surgery of the knee 3rd Edition. Vol. 2, Page 267. Churchill Livingstone.
2. Luring C, Hufner T, Kendoff D et al. Eversion or subluxation of patella in soft tissue balancing of total knee arthroplasty? Results of a cadaver experiment. The Knee 13(2006):15-18.
3. Boot RE Jr. Total knee arthroplasty in the obese patient. Tips and Quips. The journal of Arthroplasty. Vol.17(4), 2002 Suppl. 1:69-70.

Author Information

AJ Shyam Kumar, FRCS(Edin)

Specialist registrar in Orthopaedics, All Wales higher specialist training scheme, Department of Trauma & Orthopaedics, Wrexham Maelor Hospital

Muhannad Alkinj, MBBS

Senior House officer, Department of Trauma & Orthopaedics, Wrexham Maelor Hospital

AS Aster, MRCS

Specialist registrar- North west Orthopaedic training scheme, Department of Trauma & Orthopaedics, Wrexham Maelor Hospital

T Smith, FRCS (Trauma &Ortho)

Consultant, Department of Trauma & Orthopaedics, Wrexham Maelor Hospital