

Short communication

Double-layered lateral meniscus. A rare anatomical aberration

D. Karataglis*, A. Dramis, D.J.A. Learmonth

Royal Orthopaedic Hospital, Bristol Road South, Birmingham B31 2AP, UK

Received 28 August 2005; received in revised form 21 April 2006; accepted 27 April 2006

Abstract

We report a case of double-layered lateral meniscus, where an accessory proximal hemimeniscus was overlying the body and posterior horn of the lateral meniscus. It lay 1–2 mm proximal and parallel to the normal lateral meniscus with its periphery attached to the capsule and was significantly thinner and more mobile than its underlying counterpart. The accessory hemimeniscus was resected arthroscopically.

This case demonstrates an interesting and extremely rare anatomical abnormality of the lateral meniscus and is the first one described outside a Japanese population.

© 2006 Elsevier B.V. All rights reserved.

Keywords: Double layered; Lateral; Meniscus; Aberration

1. Introduction

The incidence of meniscal anomalies is overall rather small. They are more frequent in East Asian populations and tend to be more prevalent in the lateral meniscus [1]. Discoid meniscus is the most common aberration, while ring-shaped menisci are even more rare [1]. However, cases of accessory lateral menisci in the shape of double-layered menisci are extremely uncommon and, when present, they are thought to potentially contribute to patients' symptoms [1,2]. To our knowledge, only two such cases have been described to date, both of them in patients of Japanese origin [2,3]. We report a further case of this extremely rare entity, the first in a non-Japanese patient.

2. Case report

A 37-year-old male of Indian origin presented with a long history of patellar subluxation, as well as a yearlong history of mainly lateral pain, clicking and giving way of his right knee. A knee arthroscopy was performed and he was

found to have grade 2/3 changes on his patellofemoral joint and a laterally tracking patella. An arthroscopic lateral release combined with an Elmslie-Trillat tibial tubercle transfer was therefore undertaken. During his arthroscopy, a double-layered lateral meniscus was found. More specifically, an accessory proximal hemimeniscus was overlying the body and posterior horn of the normal lateral meniscus. Its anterior edge was attached to the capsule just proximal to the body of the lateral meniscus, while its body and posterior segment lay 1–2 mm proximal and parallel to the lateral meniscus and was peripherally attached to the capsule, but not to the underlying normal lateral meniscus (Fig. 1). The accessory meniscus was significantly thinner and more mobile on probing than its underlying counterpart. It was felt that it could easily be trapped between the lateral femoral condyle and lateral tibial plateau on twisting movements and was therefore resected arthroscopically. Macroscopically, no signs indicating degeneration were observed on the excised accessory meniscus and its surface and margin were smooth and glossy. The patient's symptoms significantly improved post-operatively.

3. Discussion

Meniscal anomalies including discoid menisci and far more rare entities such as ring-shaped menisci occur in

* Corresponding author. 8, Thiseos str, 54250 Thessaloniki, Greece. Tel.: +30 2310 318058.

E-mail addresses: dkarataglis@yahoo.gr (D. Karataglis), djal.scope@virgin.net (D.J.A. Learmonth).

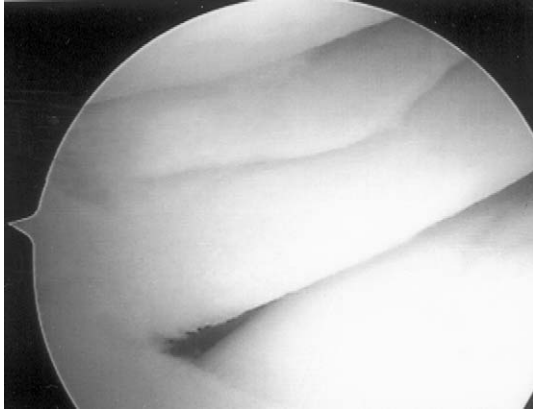


Fig. 1. Double-layered lateral meniscus: anterior aspect and body of hemimeniscus.

around 5% of Caucasians, but are considerably more common in East Asian populations [1]. Such anatomical abnormalities appear far more frequently in the lateral than in the medial meniscus.

Cases of accessory lateral menisci though are extremely rare [1]. Bailey and Blundell [4] report the case of a 5-year-old girl with bilateral partly duplicated lateral menisci, which extended from the anterior horn area to the midlateral surface of the lateral femoral condyle. Suzuki et al. [2], on the other hand, reported two cases of adolescents of Japanese origin with double-layered lateral menisci, while Okahashi et al. [3] describe a similar case in a Japanese adult. In all three cases, an upper accessory hemimeniscus

overlay the normal lateral meniscus and was considerably thinner and more mobile than the latter. It lay in close proximity to the underlying normal lateral meniscus and was attached to its periphery with its anterior and posterior edge.

Menisci differentiate directly from blastemal cells connected to the capsule [5]. It appears that aberrations such as the one reported above represent an anomaly in the differentiation process. The presence of abnormally shaped menisci may lead to significantly altered biomechanics of the lateral compartment. Their clinical significance is not always clear, but they have often been associated with pain and clicking. This case demonstrates an interesting and extremely rare anatomical abnormality of the lateral meniscus, the first ever described outside a Japanese population.

References

- [1] Clarke HD, Scott WN, Insall JN. Anatomic aberrations. In: Insall JN, Scott WN, editors. *Surgery of the knee*. 3rd ed. New York: Churchill-Livingstone; 2001. p. 77–94.
- [2] Suzuki S, Mita F, Ogishima H. Double layered meniscus: a newly found anomaly. *Arthroscopy* 1991;7(3):267–71.
- [3] Okahashi K, Sugimoto K, Iwai M, Oshima M, Fujisawa Y, Takakura Y. Double layered lateral meniscus. *J Orthop Sci* 2005;10:661–4.
- [4] Bailey WH, Blundell GE. An unusual abnormality affecting both knee joints in a child. Case report. *J Bone Joint Surg Am* 1974;56-A:814–6.
- [5] Hosea TM, Tria AJ Jr, Bechler JR. Evolution and embryology of the knee. In: Insall JN, Scott WN, editors. *Surgery of the knee*. 3rd ed. New York: Churchill-Livingstone; 2001. p. 3–12.