



ODÜ Tıp Dergisi / *ODU Journal of Medicine*
http://otd.odu.edu.tr

Olgu Sunumu

Case Report

Odu Tıp Derg
(2015) 2: 55-57

Odu J Med
(2015) 2: 55-57

A Unique Presentation of ACL Ganglion Cyst: Concurrent Bilateral Involvement
ÖÇB Gangliyon Kistinin Nadir Prezantasyonu: Bilateral Gangliyon Kisti

Tuba Selçuk^{1,2}, Çiğdem Bilgili¹, Hafize Otcu³, Yıldıray Savaş¹, Memduh Dursun⁴

¹Department of Radiology, Haseki Education and Research Hospital, İstanbul

²Gelisim University, Vocational School of Medical Services, İstanbul

³Department of Radiology, Bakirkoy Dr. Sadi Konuk Education and Research Hospital, İstanbul

⁴Department of Radiology, İstanbul University İstanbul Medical Faculty, İstanbul

Yazının geliş tarihi / Received: 9 Şubat 2014 / Feb 9, 2014

Düzeltilme / Revised: 21 Ekim 2014 / Oct 21, 2014

Kabul tarihi / Accepted: 8 Aralık 2014 / Dec 8, 2014

Abstract

Intra-articular ganglion cyst of the anterior cruciate ligament (ACL) is rarely seen, but concurrently bilateral ganglion cyst of the ACL has not been reported in literature. In this report, we present an exceedingly rare case of a 31-year-old man with concurrently bilateral ACL ganglion cyst diagnosed with magnetic resonance imaging.

Key Words: Ganglion cyst, knee, ACL, MRI.

Özet

Ön çapraz bağın (ÖÇB) intraartiküler gangliyon kisti nadir görülmektedir, eş zamanlı bilateral ÖÇB gangliyon kisti ise literatürde bildirilmemiştir. Bu yazıda Manyetik Rezonans Görüntüleme ile tanı konulan 31 yaşındaki erkek hastada oldukça nadir rastlanan eş zamanlı bilateral ÖÇB gangliyon kisti olgusunu sunmayı amaçladık.

Anahtar Kelimeler: Gangliyon kisti, diz, ÖÇB, MRG.

Introduction

Cystic lesions around the knee are common. Popliteal cysts are the most frequently encountered lesions. Other cystic lesions, including meniscal cyst and ganglion cyst are less common (1). Meniscal cysts are usually distinguished from other cystic lesions about the knee by their close association with horizontal tears of the underlying menisci. Ganglion cysts may arise from variable locations, such as tendon sheaths and muscles, and are rarely intra-articular (2). Intra-articular ganglion cysts have been reported to occur on magnetic resonance imaging (MRI) in 1.3% of patients, with approximately 20% of these related to the anterior cruciate ligament (ACL) (3). Concurrently bilateral ganglion cyst of the ACL has not been reported in literature. In this report, we present a case with concurrently bilateral ACL ganglion cyst diagnosed with MRI.

Case Report

A 31-year-old man presented with a history of bilateral painful range of motion in both knees and recurrent bilateral popliteal discomfort of 2-year duration. He did not report any past trauma. On physical examination there was restriction in flexion of both knees and bilateral popliteal tenderness. Bilateral knee MRI was performed for further evaluation. MRI demonstrated bilateral ganglion cyst in posterolateral bands of both ACL (Fig. 1 and 2). Ganglion cysts were seen as hypointense on T1-weighted images and hyperintense on T2-weighted and STIR images, and also the cysts had mass effect on ACL fibers with their septated and lobulated margins. Additionally on coronal STIR images, we showed destruction and slight edema of lateral femoral condyle secondary to mass effect of the cyst in the right knee (Fig. 1B). No other associated pathology was seen in the left knee. Arthroscopic surgery was performed to the patient. At arthroscopy, bilateral ACL was seen as posterior bulging with a smooth surface. Needle aspiration and partial debridement was performed. The patient remained asymptomatic at 10-month follow-up.

Discussion

The first report of a ganglion cyst of the knee was made by Caan in 1924 (4). The prevalence of intra-articular cystic knee masses mostly as incidental findings is reported in up to 1.3% in MRI and 0.6% in arthroscopy (5-8). The majority of ganglia arose from one of the cruciate ligaments, with the ACL the most common site of origin. Sporadic descriptions of intra-articular ganglia arising from the infra-patellar fat pad, the menisci, the popliteus tendon, or from extension of subchondral cysts have also appeared (9,10). With the increasing use

of MRI to evaluate the knee, ganglia have been commonly detected incidentally without related symptoms (3).

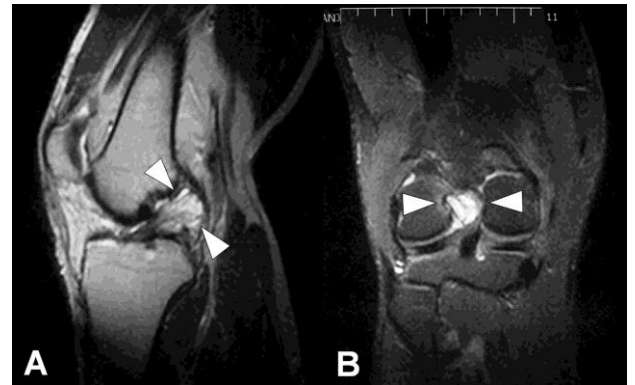


Figure 1. Sagittal T2-weighted (A), and coronal STIR (B) images of the right knee showing the ganglion cyst in ACL. Also there is associated bone marrow edema in the right femoral condyle due to its mass effect.

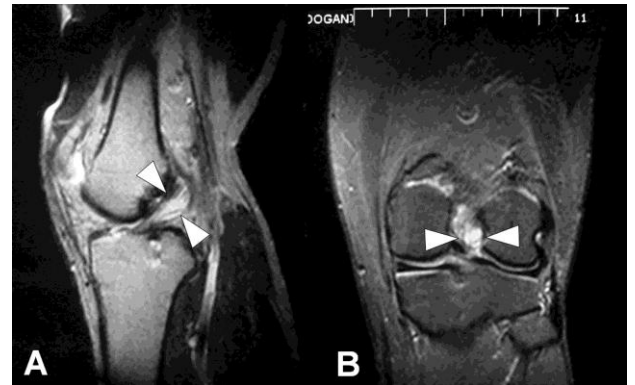


Figure 2. Sagittal T2-weighted (A), and coronal STIR (B) images of the left knee showing the ganglion cyst in ACL.

The pathogenesis of intra-articular ganglion is still unknown. There are only several theories suggesting (a) synovial tissue herniation, (b) connective tissue degeneration after trauma, (c) mucin deterioration of connective tissue, (d) ectopia of synovial tissue, and (e) proliferation of pluripotential mesenchymal stem cells (6,8).

Ganglion cysts do not have specific symptoms, and their symptoms may correlate with the size and the location within the knee joint. Knee pain, clicks, stiffness, incomplete extension of the knee and pain at extremes of motion are commonly encountered symptoms (11). Ganglion cysts of the cruciate ligaments distend not only outside along the fibers (anterior to the ACL and posterior to the PCL) but also between the two cruciates (inter-cruciate distension), sometimes interspersing within the fibres (5,8). The exceedingly rare isolated location within the cruciate fibres (intra-ligamentous distension) results from a mucoid degenerative process within the ligament and leads to a fusiform dilatation (8). In our patient, the ganglion cyst was seen as an intra-ligamentous distension, moreover bilateral ACL

involvement was seen. To our knowledge, in literature a case of bilateral ganglion cysts of both ACL was reported by Noda et al but 10 years ago. MRI is the most sensitive, specific, accurate, and noninvasive method for depicting such cystic masses, including their size and location, to exclude neoplastic lesions, and to detect additional intra-articular pathologies (12,13). Ganglion cysts show usually homogeneous low signal intensity on T1- and high signal intensity on T2-weighted images (8). The differential diagnosis includes a loculated effusion, a dissecting meniscal cyst and synovial proliferating disorders such as pigmented villonodular synovitis, synovial chondromatosis, synovial hemangioma and synovial sarcoma. A meniscal cyst in a peri-cruciate location is typically associated with a meniscal tear. The MRI features of the latter synovial disorders are well documented (14).

Arthroscopy with cyst removal is recommended for all patients with symptomatic ganglia and nearly always results in complete resolution. Unlike extra-articular ganglia, recurrences are exceedingly rare after arthroscopic drainage and debridement of intra-articular cysts (8,3).

In summary, ACL ganglion cysts are exceedingly rarely seen bilaterally and MRI is useful modality for diagnosis and planning of surgical treatment for ganglion cysts of the ACL.

The authors declare that there is no conflict of interest.

References

1. Lee KR, Cox KC, Neff GR. Cystic masses of the knee: Arthrographic and CT evaluation. *AJR Am J Roentgenol* 1987; 148:329-334.
2. Kim GM, Kim BH, Choi JA et al. Intra-articular ganglion cysts of the knee: clinical and MR imaging features. *Eur Radiol* 2001; 11:834-840.
3. Bergin D, Morrison WB, Carrino JA, Nallamshetty SN, Bartolozzi AR. Anterior Cruciate Ligament Ganglia and Mucoïd Degeneration: Coexistence and Clinical Correlation. *AJR Am J Roentgenol* 2004; 182:1283-1287.
4. Caan P. Cyst formation (ganglion) in the anterior cruciate ligament of the knee (Zystenbildung (Ganglion) im Ligamentum cruciatum ant. genus). *Dtsch Z Chir* 1924; 186:403-408.
5. Brown MF, Dandy DJ. Intra-articular ganglia in the knee. *Arthroscopy* 1990; 6:322-323.
6. Bui-Mansfield LT, Youngberg RA. Intra-articular ganglia of the knee; prevalence, presentation, etiology, and management. *AJR Am J Roentgenol* 1997; 168:123-127.
7. Do-Dai DD, Youngberg RA, Lanchbury FD, Pitcher JD, Garver TH. Intra-articular ganglion cysts of the anterior cruciate ligament: MR findings with clinical and arthroscopic correlations. *J Comput Assist Tomogr* 1996; 20:80-84.
8. Krudwig WK, Schulte KK, Heinemann C. Intra-articular ganglion cysts of the knee joint: a report of 85 cases and review of the literature. *Knee Surg Sports Traumatol Arthrosc* 2004; 12:123-129.
9. Battaglia TC, Freilich AM, Diduch DR. An intra-articular knee cyst in a 2-year-old associated with an aberrant anterior cruciate ligament. *Knee Surg Sports Traumatol Arthrosc* 2007; 15:36-38.
10. Yılmaz T, Genc B, Argin M, Memis A, Arkun R. Ganglion cysts of the knee originating from tendons and ligaments. *Diagnost and Intervent Radiol*. 2004; 10:246-251.
11. David KS, Korula RJ. Intra-articular ganglion cyst of the knee. *Knee Surg Sports Traumatol Arthrosc* 2004; 12:335-337.
12. Sundaram M, McGuire MH, Fletcher J, Wolverson MK, Heiberg E, Shields JB. Magnetic resonance imaging of lesions of synovial origin. *Skeletal Radiol* 1986; 15:110-116.
13. Tyson LL, Daughters TC, Ryu RKN, Crues JV. MRI appearance of meniscal cysts. *Skeletal Radiol* 1995; 24:421-424.
14. Tyrrell PNM, Cassar-Pullicino VN, McCall IW. Intra-articular ganglion cysts of the cruciate ligaments. *Eur Radiol* 2000; 10:1233-1238.