Bölüm
12

FEMOROASETABULAR SIKIŞMA SENDROMU

Yağmur IŞIN[1]

Femoroasetabular sıkışma sendromu (FAS) ilk olarak Ganz ve arkadaşları tarafından tanımlanmış olup, özellikle aşırı eklem hareket açıklığında femur ve asetabulumun anormal kontakt ve anormal yük dağılımı ile kalça eklemine zararı sonucu oluştuğu gösterilmiştir (1). Eklem tekrarlayan mikrotravmaya maruz kaldığında, değişen femoroasetabular kontakt, labral ve kondral patolojiler ile birlikte sıkışmaya sebep olur. FAS tanısı için 5 tane kriter; femur veya asetabulumun anormal yapısı ve bu iki yapı arasında anormal kontakt, yine kuvvetli hareketlerin sonucu olarak anormal kontakt ve sürtünme, sürekli olarak yıpranmaya sebep olan tekrarlayan travma ve son olarak bütün bunların sonucu olan yumuşak doku hasarının bulunması olarak tanımlanmıştır (2).

ETYOLOJİ

FAS sınıflaması patolojinin anatomik özelliğine göre, femoral baş-boyun bileşkesinde (cam lezyonu) veya asetabular kenar (pincer lezyonu) olarak ikiye ayrılmıştır. İki tipte de hem genetik hem de edinilmiş sebepler tanımlanmasına rağmen kesin etyoloji hala net değildir. FAS gelişimindeki genetiğin potansiyel rolünü araştırmak amacıyla yapılan bir çalışmada; 64 FAS olan hastanın kardeşleri ve kontrol grubu karşılaştırıldığında, kardeşlerin kontrol grubuna göre daha yüksek FAS riski taşıdığı bulunmuştur (3). Yine bu çalışmada klinik olarak semptom veren ve anormal radyografik bulgulara sahip kalçaların prevalansı kardeş grubunda daha çok bulunmuştur. Başka bir çalışmada ise beyaz ve Asyalı popülasyonlar karşılaştırıldığında; beyaz hastaların daha yüksek alfa (56 derece-50 derece) ve lateral merkez-kenar açısına (39 derece – 36 derece) sahip olduğu gösterilmiştir (4). Takeyama ve arkadaşlarının retrospektif olarak Asyalı 946 kalçada yaptığı çalışmada α açısının >60 derece olma prevalansını sadece %0,6 olarak bulunmuştur (5).

Bütün bu çalışmalar FAS ile genetik veya coğrafik bir bağlantı kurmuş gibi görünse de, Packer ve Safran çalışmalarında FAS'ın genetik geçişinde kesin kanıt olmadığını savunmuşlardır (6). Aynı çalışmada FAS'ın edinsel sebepleri üzerinde de durulmuştur ve cam tipi FAS'da en önemli etkenin adölesan dönemde spor aktiviteleri sırasında tekrarlayan kalça yüklenmesi olduğunu saptamışlardır.

Murray ve Duncan ise adölesan dönemde agresif atletik aktivitede bulunanlarda radyolojik olarak proksimal femoral deformiteleri (%24) normal fiziksel aktivitede bulunanlara göre (%9) daha yüksek saptamıştır (7). Bu fikirden yola çıkarak Siebenrock ve arkadaşları 36 açık ve kapalı epifize sahip elit basket oyuncusu (74 kalça) ile 38 gönüllüyü (76 kalça) incelediği çalışmada ortalama α açısı özellikle anterosüperior kadranda atletik grupta daha fazla bulunmuştur. Kontrol grubuna göre α açısı büyük olmasına rağmen bu durumun atletik grupta sadece büyüme plağı kapanma evresinde olan hastalarda anormal olduğu gözlenmiş-

[1] Op. Dr. , Siirt Kurtalan Devlet Hastanesi, yagmurisin2013@gmail.com

olduğu gösterilmiştir. Yalnızca profesyonel sporcularda mümkünse artroskopik yöntem spora dönüş daha hızlı olduğundan tercih edilmelidir. FAS hakkında birçok soru son 20 yılda cevap bulmakla beraber, etyoloji, koruyucu yöntemler, uzun dönem sekeller gibi konular üzerinde durulması ve iyi anlaşılması gereken patolojik bir komplekstir.

KAYNAKÇA

1. Ganz R, Parvizi J, Beck M, et al. Femoroacetabular impingement: a cause for osteoarthritis of the hip. Clin Orthop. 2003; 417:112–120.
2. Sankar WN, Nevitt M, Parvizi J, et al. Femoroacetabular impingement: defining the condition and its role in the pathophysiology of osteoarthritis. J Am Acad Orthop Surg. 2013;21:S7–S15.
3. Pollard TC, Villar RN, Norton MR, et al. Genetic influences in the aetiology of femoroacetabular impingement: a sibling study. J Bone Joint Surg Br. 2010;92:209–216.
4. Van Houcke J, Yau WP, Yan CH, et al. Prevalence of radiographic parameters predisposing to femoroacetabular impingement in young asymptomatic Chinese and White subjects. J Bone Joint Surg Am. 2015;97:310–317.
5. Takeyama A, Naito M, Shiramizu K, et al. Prevalence of femoroacetabular impingement in Asian patients with osteoarthritis of the hip. Int Orthop. 2009;33:1229–1232.
6. Packer JD, Safran MR. The etiology of primary femoroacetabular impingement: genetics or acquired deformity? J Hip Preserv Surg. 2015;2:249–257.
7. Murray RO, Duncan C. Athletic activity in adolescence as an etiological factor in degenerative hip disease. J Bone Joint Surg Br. 1971;53:406–419
8. Siebenrock KA, Kaschka I, Frauchiger L, et al. Prevalence of cam-type deformity and hip pain in elite ice hockey players before and after the end of growth. Am J Sports Med. 2013;41:2308–2313.
9. Siebenrock K, Wahab KA, Werlen S, et al. Abnormal extension of the femoral head epiphysis as a cause of cam impingement. Clin Orthop. 2004;418:54–60.
10. Siebenrock KA, Behning A, Mamisch TC, et al. Growth plate alteration precedes cam-type deformity in elite basketball players. Clin Orthop Relat Res. 2013;471:1084–1091.
11. Nepple JJ, Vigdorchik JM, Clohisy JC. What is the association between sports participation and the development of proximal femoral cam deformity? A systematic review and metaanalysis. Am J Sports Med. 2015;43:2833–2840.
12. Matheney T, Sandell L, Foucher K, et al. Motion analysis, cartilage mechanics, and biology in femoroacetabular impingement: Current understanding and areas of future research. J Am Acad Orthop Surg. 2013;21:S27–S32.
13. Johnston TL, Schenker ML, Briggs KK, et al. Relationship between offset angle alpha and hip chondral injury in femoroacetabular impingement. Arthroscopy. 2008;24:669–675.
14. Ganz R, Leunig M, Leunig-Ganz K, et al. The etiology of osteoarthritis of the hip. Clin Orthop. 2008;466:264–272.
15. Bedi A, Kelly BT. Femoroacetabular impingement. J Bone Joint Surg Am. 2013;95:82–92.
16. Beck M, Kalhor M, Leunig M, et al. Hip morphology influences the pattern of damage to the acetabularcartilage: femoroacetabular impingement as a cause of early osteoarthritis of the hip. J Bone Joint Surg Br. 2005;87:1012–1018.
17. Frank JM, Harris JD, Erickson BJ, et al. Prevalence of femoroacetabular impingement imaging findings in asymptomatic volunteers: A systematic review. Arthroscopy. 2015;31:1199–1204.
18. Gerhardt MB, Romero AA, Silvers HJ, et al. The prevalence of radiographic hip abnormalities in elite soccer players. Am J Sports Med. 2012;40:584–588.
19. Silvis ML, Mosher TJ, Smetana BS, et al. High prevalence of pelvic and hip magnetic resonance imaging findings inasymptomatic collegiate and professional hockey players. Am J Sports Med. 2011;39:715–721.
20. Kapron AL, Anderson AE, Aoki SK, et al. Radiographicprevalence of femoroacetabular impingement in collegiate football players: AAOS exhibit selection. J Bone Joint Surg Am. 2011;93:e111.1–e111.10.
21. Jackson TJ, Starkey C, McElhiney D, et al. Epidemiology of hip injuries in the national basketball association: a 24-year overview. Orthop J Sports Med. 2013;1:2325967113499130.
22. Nepple JJ, Brophy RH, Matava MJ, et al. Radiographic findings of femoroacetabular impingement in national football league combine athletes undergoing radiographs for previous hip or groin pain. Arthroscopy. 2012;28:1396–1403.
23. Larson CM, Sikka RS, Sardelli MC, et al. Increasing alpha angle is predictive of athletic-related "hip" and "groin" pain in collegiate national football league prospects. Arthroscopy.2013;29:405–410.
24. Mascarenhas VV, Rego P, Dantas P, et al. Imaging prevalence of femoroacetabular impingement in symptomatic patients,athletes, and asymptomatic individuals: a systematic review.Eur J Radiol. 2016;85:73–95.
25. Reiman MP, Mather RC 3rd, Hash TW 2nd, et al. Examination of acetabular labral tear: a continued diagnostic challenge. Br J Sports Med. 2014;48:311–319.
26. Nepple JJ, Prather H, Trousdale RT, et al. Clinical diagnosis of femoroacetabular impingement. J Am Acad Orthop Surg. 2013;21:S16–S19.
27. Clohisy JC, Knaus ER, Hunt DM, et al. Clinical presentation of patients with symptomatic anterior hip impingement. Clin Orthop. 2009;467:638–644.
28. Wyss TF, Clark JM, Weishaupt D, et al. Correlation between internal rotation and bony anatomy in the hip. Clin Orthop Relat Res. 2007;460:152–158.
29. Martin RL, Irrgang JJ, Sekiya JK. The diagnostic accuracy of a clinical examination in determining intra-articular hip pain for potential hip arthroscopy candidates. Arthroscopy. 2008;24:1013–1018.
30. Jacobson JA, Bedi A, Sekiya JK, et al. Evaluation of the painful athletic hip: Imaging options and imaging-guided injections. Am J Roentgenol. 2012;199:516–524.
31. Khan W, Khan M, Alradwan H, et al. Utility of intra-articular hip injections for femoroacetabular impingement: a systematic review. Orthop J Sports Med. 2015;3:2325967115601030.

32. Meyer DC, Beck M, Ellis T, et al. Comparison of six radiographic projections to assess femoral head/neck asphericity. Clin Orthop Relat Res. 2006;445:181–185.
33. Notzli HP, Wyss TF, Stoecklin CH, et al. The contour of thefemoral head-neck junction as a predictor for the risk of anterior impingement. J Bone Joint Surg Br. 2002;84:556–560.
34. Clohisy JC, Carlisle JC, Beaule PE, et al. A systematic approach to the plain radiographic evaluation of the young adult hip. J Bone Joint Surg Am. 2008;90(suppl 4):47–66.
35. Pollard TC, Villar RN, Norton MR, et al. Femoroacetabular impingement and classification of the cam deformity: thereference interval in normal hips. Acta Orthop. 2010;81:134–141.
36. Agricola R, Waarsing J, Thomas G, et al. Cam impingement: defining the presence of a cam deformity by the alpha angle: data from the CHECK cohort and Chingford cohort. Osteoarthritis Cartilage. 2014;22:218–225.
37. Sutter R, Dietrich TJ, Zingg PO, et al. How useful is the alpha angle for discriminating between symptomatic patients with cam-type femoroacetabular impingement and asymptomaticvolunteers? Radiology. 2012;264:514–521.
38. Nepple JJ, Prather H, Trousdale RT, et al. Diagnostic imaging of femoroacetabular impingement. J Am Acad Orthop Surg. 2013;21:S20–S26.
39. Bittersohl B, Hosalkar HS, Hesper T, et al. Advanced imaging in femoroacetabular impingement: current state and future prospects. Front Surg. 2015;2:34–38.
40. Saadat E, Martin SD, Thornhill TS, et al. Factors associated with the failure of surgical treatment for femoroacetabular impingement: review of the literature. Am J Sports Med. 2014;42:1487–1495.
41. Petersilge CA. MR arthrography for evaluation of theacetabular labrum. Skeletal Radiol. 2001;30:423–430.
42. Beaule´ PE, Zaragoza E, Motamedi K, et al. Three-dimensional computed tomography of the hip in the assessment of femoroacetabular impingement. J Orthopaedic Res. 2005;23: 1286–1292.
43. Fabricant PD, Berkes MB, Dy CJ, et al. Diagnostic medical imaging radiation exposure and risk of development of solid and hematologic malignancy. Orthopedics. 2012;35:415–420.
44. Wall PD, Fernandez M, Griffin DR, et al. Nonoperative treatment for femoroacetabular impingement: a systematic review of the literature. PM R. 2013;5:418–426.
45. Byrd JW. Femoroacetabular impingement in athletes, part II: treatment and outcomes. Sports Health. 2010;2:403–409.
46. Hunt D, Prather H, Hayes MH, et al. Clinical outcomes analysis of conservative and surgical treatment of patients with clinical indications of prearthritic, intra-articular hip disorders. PM R. 2012;4:479–487.
47. Emara K, Samir W, Motasem EH, et al. Conservative treatment for mild femoroacetabular impingement. J Orthopaedic Surg. 2011;19:41–45.
48. Ganz R, Gill TJ, Gautier E, et al. Surgical dislocation of the adult hip a technique with full access to the femoral head and acetabulum without the risk of avascular necrosis. J Bone Joint Surg Br. 2001;83:1119–1124.
49. Hoppe DJ, Simunovic N, Bhandari M, et al. The learning curve for hip arthroscopy: a systematic review. Arthroscopy. 2014;30:389–397
50. Bizzini M, Notzli HP, Maffiuletti NA. Femoroacetabular impingement in professional ice hockey players: a case series of 5 athletes after open surgical decompression of the hip. Am J Sports Med. 2007;35:1955–1959.
51. Philippon MJ, Weiss DR, Kuppersmith DA, et al. Arthroscopic labral repair and treatment of femoroacetabular impingement in professional hockey players. Am J Sports Med. 2010;38:99–104.
52. Botser IB, Smith TW, Nasser R, et al. Open surgical dislocation versus arthroscopy for femoroacetabular impingement: a comparison of clinical outcomes. Arthroscopy. 2011;27: 270–278.
53. Matsuda DK, Carlisle JC, Arthurs SC, et al. Comparative systematic review of the open dislocation, mini-open, and arthroscopic surgeries for femoroacetabular impingement. Arthroscopy. 2011;27:252–269.
54. Horner NS, MacDonald A, Simunovic N, et al. Evaluating healthcare resource utilization and outcomes for surgical hip dislocation and hip arthroscopy for femoroacetabular impingement. Knee Surg Sports Traumatol Arthrosc. 2015:1–12.
55. Sardana V, Philippon MJ, Bedi A, et al. Revision hip arthroscopy indications and outcomes: a systematic review. Arthroscopy. 2015;31:2047–2055.
56. Larson CM, Giveans MR, Samuelson KM, et al. Arthroscopic hip revision surgery for residual femoroacetabular impingement (FAI): Surgical outcomes compared with a matched cohort after primary arthroscopic FAI correction. Am J Sports Med. 2014;42:1785–1790.
57. Collins JA, Ward JP, Youm T. Is prophylactic surgery for femoroacetabular impingement indicated? A systematic review. Am J Sports Med. 2014;42:3009–3015.