

퇴행성 내측 슬관절염 환자에서 외측 췌기가 기립자세 균형에 미치는 영향

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The Effect of Laterally Wedged Insoles on Standing Balance of Patients with Osteoarthritis in the Medial Compartment of Knees

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Objective: To investigate the effect of laterally wedged insole on static balance of patients with degenerative osteoarthritic knees.

Method: Eighteen female patients were diagnosed with medial compartment knee degenerative osteoarthritis (OA) based on symptoms and simple X-rays. Patients were studied while they stood wearing shoes with the 5 degrees or 10 degrees lateral wedged insoles compared with a bare foot. Patients chose a comfortable stance with feet spread apart, slightly turned outwards, and were asked to look straight ahead at a fixed point in a quiet room. Postural sway

and weight load asymmetry were recorded while the patients were standing on two adjacent force platforms during a 30 second trial.

Results: Postural sway and weight load asymmetry for 30 seconds were not significantly changed by wearing laterally wedged insoles with varying elevations ($p > 0.05$).

Conclusion: The degree of the postural sway and weight load asymmetry for 30 seconds with the insole were not affected by the tilt of the lateral wedge. (**J Korean Acad Rehab Med 2007; 31: 324-328**)

Key Words: Postural sway, Weight load asymmetry, Insole, Knee osteoarthritis

서 론

퇴행성 슬관절염은 나이가 증가함에 따라 흔해지는 근골격계 질환이다.¹ Hart 등²에 따르면, 45세에서 64세 사이의 여성에서 방사선학적인 퇴행성 슬관절염의 유병률은 12% 이고, 6% 정도에서는 퇴행성 슬관절염의 증상을 가진다고 한다.

퇴행성 슬관절염 환자에서는 대퇴 사두근의 힘과 활성화의 감소뿐만 아니라, 슬관절의 고유 감각수용의 장애,^{3,5} 자세 흔들림에도 영향을 주어 균형을 저하시키는 원인이 되며,⁶ 그 결과 관절에 점차적으로 더 많은 손상을 가져오게 된다.⁷

퇴행성 슬관절염에서 슬관절의 내측부분이 이환되는 경우가 많은데, 이는 그 부분이 더 많은 부하를 받기 때문이라고 한다.⁸ 건강한 사람의 슬관절에서는, 전체 관절 부하의

71~91% 정도만이 내측 경골-대퇴골 구획으로 전달되는데 비해,^{9,10} 퇴행성 슬관절염이 있을 때는 100% 정도 전달된다.^{11,12}

그러므로 치료 계획도 이러한 내측 구획에 가해지는 힘을 최소화하는 데 목적을 두게 되는데, 예를 들면, 고위 경골 절골술(high tibial osteotomy), 무릎 보호대, 그리고 외측 췌기 등이 있다.^{13,14} 근래 들어 퇴행성 슬관절염의 치료로 고위 경골 절골술과 인공관절 치환술의 비약적인 발전이 있었지만, 수술적인 치료는 비용이 많이 들 뿐만 아니라 심각한 합병증이 있다.^{15,16}

내측 구획 슬관절염을 앓고 있는 환자의 보존적인 치료로서 외측 췌기에 대한 여러 논문들¹⁷⁻²²에서 동역학적인 변화와 효과에 대해 보고되어 왔다. 외측 췌기의 동역학적 효과에 대하여 Yasuda와 Sasaki²³는 외측 췌기가 슬관절의 내측 부분에 가해지는 과도한 부하와 외측에 주어지는 과도한 장력을 줄여주어 하지의 공간적인 위치의 변화를 준다고 하였다. 이에 퇴행성 슬관절염의 치료를 위해 외측 췌기를 많이 처방하고 있다.

Sasaki와 Yasuda²⁴는 외측 췌기는 경도의 관절 변형이 있는 슬관절염에서 유용하다고 보고하였다. 이 경우 하지의 역학적 축이 좀 더 직립 자세에 근접하게 되어 하지의 공

접수일: 2006년 10월 2일, 게재승인일: 2007년 3월 29일

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