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Case Report / ***Olgu Sunumu***

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Wear pattern on the bottom of tennis shoe after surgical repair of acute Achilles tendon rupture: 22-year follow-up

Akut Aşil tendonu yırtılmasının cerrahi tamiri sonrası tenis ayakkabısının tabanında yıpranma paterni: 22 yıllık izlem

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ABSTRACT

In this article, we report a 67-year-old male patient who had a different wear pattern on the bottom of his tennis shoe after surgical repair of acute Achilles tendon rupture with 22-year follow-up. The wear pattern was well-matched with dynamic pedobarography. In left shoe with less total contact area and higher pressure values, there was more wear compared to right shoe.

Keywords: Achilles tendon rupture, anatomic changes, surgical repair.

ÖZ

Bu yazıda, 22 yıllık izlem ile akut Aşil tendonu yırtılmasının cerrahi tamiri sonrası tenis ayakkabısının tabanında farklı bir yıpranma paterni olan 67 yaşında bir erkek hasta sunuldu. Yıpranma paterni dinamik pedobarografi ile uyumlu idi. Daha az total temas alanı ve daha yüksek basınç değerleri olan sol ayakkabıda sağ ayakkabıya kıyasla daha fazla yıpranma vardı.

Anahtar sözcükler: Aşil tendonu yırtılması, anatomik değişiklikler, cerrahi tamir.

Achilles tendon ruptures occur at higher rates in the middle-aged population due to age-related changes. Initiating the degenerative changes are decreasing elasticity and function of the tendon.[1] Operative and nonoperative treatments of acute Achilles tendon ruptures, using conventional or accelerated functional rehabilitation, have some complications.[2,3] In this article, we report a patient who had a different wear pattern on the bottom of his tennis shoe after surgical repair of acute Achilles tendon rupture in 22-year follow-up.

CASE REPORT

A 67-year-old male patient had acute left Achilles tendon rupture 22 years before. He had surgical treatment with modified Bosworth technique. There was no complication in the short-term period. The only complaint was a feeling that the size of the left foot was smaller than the right side. The last physical examination at 22 years revealed no significant difference between two sides for walking, running, climbing, rising on heels, rising on toes, single-limb stance, laxity of the ankle joint, or range of motion in ankle.

However, there were structural changes in 15-year follow-up.[4] Dynamic pedobarography (EMED-SF, Novel, Munich, Germany) demonstrated that the left foot had less total contact area, higher pressure values, lower arch index, more laterally located center of pressure (COP), and higher medial arch than the right foot (Table 1, Figure 1).[4]

The patient was a frequent tennis player; he was playing tennis three times a week. In last two

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TABLE I

Dynamic pedobarography results for right and left feet

	Right foot	Left foot
Total contact area (cm^2)	175.5	171.5
Peak pressure value (n/cm^2)		
Forefoot	31	40
Midfoot	10.5	14.5
Hindfoot	31	34
Arch index	0.33	0.26
Mediolateral area difference with the reference of center of pressure (cm^2)	2.12	3.19

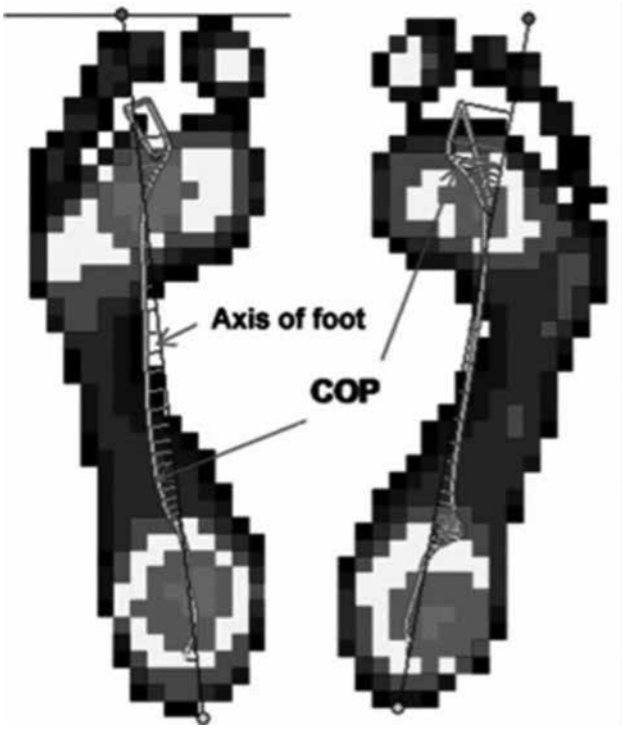

Figure 1. Dynamic pedobarography demonstrated that left foot had less total contact area, higher pressure values, lower arch index, more laterally located center of pressure (COP), and higher medial arch than right foot.

years, he recognized a different wear pattern on the bottom of his tennis shoe. The wear pattern was well-matched with dynamic pedobarography. In left shoe with less total contact area and higher pressure values, there was more wear compared to right shoe (Figure 2). A written informed consent was obtained from the patient.

DISCUSSION

Many complications have been reported after both nonoperative and operative techniques for

Figure 2. (a, b) Wear pattern on bottom of right and left tennis shoes. In left shoe with less total contact area and higher pressure values, there was more wear compared to right shoe.

the treatment of Achilles tendon ruptures.[4] In our case, the left foot had less total contact area, higher pressure values, lower arch index, more laterally located COP, and higher medial arch than the right. These structural changes caused a different wear pattern in the tennis shoe. Further studies with more patients are necessary to find out the biomechanics of this pathology that orthopedic surgeons should be aware of and inform their patients accordingly.

Declaration of conflicting interests

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