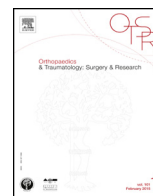




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Case report

Bilateral piriformis syndrome in two elite soccer players: Report of two cases



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ABSTRACT

Piriformis syndrome, a relatively rare condition, is described as entrapment of a sciatic nerve at the level of the piriformis muscle. There have been a few reports of bilateral piriformis syndrome in literature. In this study, we present bilateral piriformis syndrome in two professional soccer players from different teams who are symptom free at last follow-up after surgery. In both patients, resting EMG records were read normal, however EMG recording during the activity revealed prolonged H-reflexes. Both patients had no relief from conservative treatment and rehabilitation, therefore surgical treatment was performed. Preoperative mean visual analogue scale (VAS) value was 7, and decreased to 3 at the sixth month follow-up visit and at the longer term follow-up, mean 85 months (74–96) it was valued at 1. Both soccer players returned to their active sports lives in the sixth postoperative month. According to Benson's functional evaluation scale, in long-term follow-up, there have been excellent results and both patients resumed their professional carrier for many years (mean 7 years).

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1. Introduction

Piriformis syndrome is a rare entrapment neuropathy, and there is usually some confusion about its diagnosis. Piriformis syndrome is often overlooked or misdiagnosed. The literature indicates 0.33–6% of dorsalgia and/or sciatica cases are caused by piriformis [1].

Research about piriformis syndrome usually includes evaluations of the general population. No articles reporting on soccer players are available. Bilateral cases were reported as cadaver studies, anatomic variations of the gluteal region or complications that developed after hip surgery [2–6]. It was interesting to observe two cases of bilateral piriformis syndrome (without any anatomic variations or surgical treatment complications) in the same season in two professional elite soccer players. More study is needed to investigate the incidence of piriformis syndrome in athletes. This syndrome should be considered in the differential diagnoses of patients with bilateral lower extremity pain, particularly soccer players.

2. Case 1

The 32-year-old male professional soccer player was diagnosed with piriformis syndrome at another sports medicine center and received conservative treatment (i.e., stretching exercise, ultrasound, non-steroidal anti-inflammatory drugs, massage, muscle stretches, physical therapy, ice, and rest). As the pain did not diminish, ultrasound guided local anesthetic plus corticosteroid injection was administered twice (the first injection one year later and the second injection one year after the first injection) to the painful region. After both injections, rest for sport activities was given for six weeks. The patient also continued physical therapy during this period. His pain was relieved to some degree, but the pain started again when he returned to soccer.

Upon physical examination, there was pain with palpation on the bilateral gluteal muscles, sacroiliac joint and greater sciatic notch. The strength of the pain was approximately 6/10 on the visual analogue scale (VAS). The bilateral lower extremity sensation was decreased in the superficial and deep peroneal nerve distribution. There electromyographic study revealed no pathologic findings.

Tests were repeated when the patient was running for a certain time at a certain velocity, and electromyography (EMG) examination was performed. After the exercise, bilateral lower extremity Lasègue, Pace and Freiberg signs were found to be positive, and

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Table 1
EMG results of the patients before running.

Nerve	Patient 1			Patient 2		
	Left	Right	Normal	Left	Right	Normal
Sural sensory						
Amplitude	1.2	1.3	1.5 mV	1.2	1.2	1.5 mV
Distal latency	5	5	2–4 ms	4.5	5	2–4 ms
Conduction velocity	38	36	45 m/s	35	36	45 m/s
Peroneal motor (recording tibialis anterior)						
Amplitude	1.1	1.1	1.5 mV	1.4	1.4	1.5 mV
Distal latency	5	6	2–4 ms	6	6	2–4 ms
Tibial motor (recording abductor hallucis)						
Amplitude	6	7	5 mV	8	8	5 mV
Distal latency	3	3	2–4 ms	4	4	2–4 ms
Conduction velocity	48	48	45 m/s	50	50	45 m/s
H (Hoffman refleksi)	27.73	27.75	< 28 m/s	27.99	27.97	< 28 m/s

Table 2
EMG results of the patients after 20 minutes running.

Nerve	Patient 1			Patient 2		
	Left	Right	Normal	Left	Right	Normal
Sural sensory						
Amplitude	5.3	5.3	5 uV	6.0	6.0	5 uV
Distal peak latency	5	5	2–4 ms	2.5	2.5	2–4 ms
Peroneal motor (recording EDB)						
Amplitude	1.8	1.8	1.5 mV	1.7	1.7	1.5 mV
Distal latency	3	3	2–4 ms	4	3	2–4 ms
Conduction velocity	50	50	45 m/s	50	50	45 m/s
Peroneal motor (recording tibialis anterior)						
Amplitude	1.5	1.5	1.5 mV	1.7	1.7	1.5 mV
Distal latency	4	3	2–4 ms	4	3	2–4 ms
Tibial motor (recording abductor hallucis)						
Amplitude	5	6	5 mV	8	8	5 mV
Distal latency	3	3	2–4 ms	4	4	2–4 ms
Conduction velocity	40	40	45 m/s	50	50	45 m/s
H (Hoffman refleksi)	34.15	34.13	< 28 m/s	33.15	33.17	< 28 m/s

the amplitudes and the velocities of the peroneal and sural nerves were reduced according to the EMG; H-reflex delay (5.16 m) was detected when the patient was in the flexion, adduction and internal rotation positions (Tables 1–2). Magnetic resonance imaging (MRI) of the pelvis and lumbar region were evaluated as normal (Fig. 1). All causes of sciatica and dorsalgia leading to sciatic nerve irritation were excluded. These clinical, radiographic, and neurophysiologic findings were suggestive of bilateral piriformis syndrome.

3. Case 2

A 26-year-old male soccer player with bilateral hip pain, buttock pain and sitting intolerance complaints during 18 months after an injury occurred while he was sprinting was referred to a sports medicine clinic. The diagnosis was made as piriformis syndrome and conservative treatment was applied. Ultrasound guided local anesthetic plus corticosteroid injection was administered. The pain was relieved for a short-time period after the injection, but the patient was admitted to our sports medicine clinic, as his pain recurred.

In the physical examination, there was pain with palpation on the bilateral gluteal muscles, sacroiliac joint and greater sciatic notch. The patient reported decreased leg strength and severe pain at the bilateral buttock and thigh. The VAS score was 8. The sensation was decreased in the superficial and deep peroneal nerve

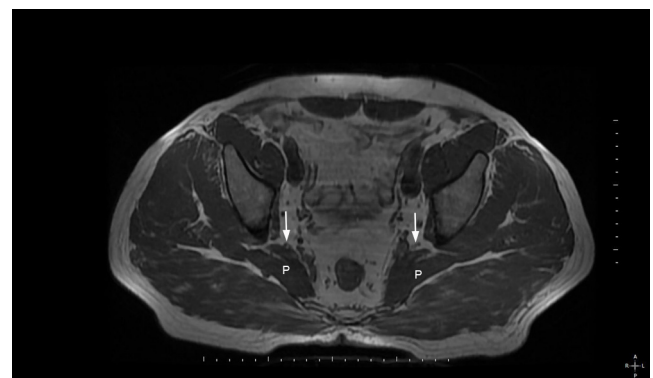


Fig. 1. Normal axial T1-weighted pelvic MR imaging (piriformis muscle: P; sciatic nerve: arrows).

distribution. The motor strength was 4/5 for the extensor hallucis longus and tibialis anterior and 5/5 for the flexor hallucis longus and gastro soleus. The bilateral Lasègue, Pace and Freiberg signs were negative [7,8]. There were no pathologic findings supporting piriformis syndrome on EMG. Tests were repeated when the patient was running for 20 min at a certain velocity. EMG tests and examinations appeared to be positive. Amplitudes and velocities of the peroneal and sural nerves were reduced on the EMG, and H-reflex delay (5.20 m/s) was detected when the patient's hip was in

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