P 1-129

Nerve Hydrodissection for Sciatic Neuropathy due to Spontaneous Piriformis Rhabdomyolysis

Gi Young Park[1†], Dong Rak Kwon[1], Kang Lip Kim[1*]

Daegu Catholic University Medical Center, Department of Rehabilitation Medicine[1]

Background

Piriformis syndrome is a condition which is thought to result from compression of the sciatic nerve around the piriformis muscle. Causes may include trauma to the gluteal muscle, anatomical variation, an overuse injury, or swelling of the piriformis muscle. Rhabdomyolysis can be one of the cause of degeneration and swelling of muscle, and the swelling of muscle can cause compression of a peripheral nerve. Previous studies have reported peripheral neuropathies due to rhabdomyolysis. However, sciatic neuropathy due to spontaneous piriformis rhabdomyolysis is extremely rare. Clinical

Presentation

A 27-year-old man was admitted to our rehabilitation department due to severe left buttock pain radiating to sole that developed after climbing the mountain 12 days ago. On a day after climbing the mountain, the patient visited and admitted to local clinic, and his serum creatine kinase (CK) was elevated to 14,928 IU/L. After intensive hydration therapy, serum CK level was normalized to 74 IU/L, but the painful weakness of left lower extremity persisted. At admission, manual muscle tests revealed 3 medical research council (MRC) grade in left knee flexor, 4- MRC grade in left hip extensor and left ankle dorsiflexor, and 4+ MRC grade in left hip abductor. There was decreased sensation to pinprick and light touch at left sole and dorsum of left fifth toe and a normal deep tendon reflex of left knee and an absence of deep tendon reflex of left ankle. Pelvis MRI demonstrated edematous change in left gluteus maximus, medius, and minimus, piriformis muscle and soft tissue edema around the left sciatic nerve (Fig. 1). Ultrasound showed left gluteus medius, minimus, and piriformis muscle degeneration and swelling of left sciatic nerve compared to the right one (Fig. 2). A nerve conduction study showed low amplitude of compound muscle action potentials of left tibial and common peroneal nerves and low amplitude of sensory nerve action potentials of left sural nerve. An electromyography revealed abnormal spontaneous activities in left gluteus maximus, gluteus medius, tibialis anterior, peroneus longus, gastrocnemius, short head of biceps femoris, and semimembranosus muscles. Our electrodiagnosis was left incomplete sciatic neuropathy with gluteal myopathy. Ultrasound guided nerve hydrodissection with dexamethasone (1ml) and 5% dextrose water (5cc) was performed around left sciatic

nerve beneath piriformis muscle (Fig. 3). Immediately after the procedure, his motor power of left knee flexor was increased from 3 to 4- MRC grade. Follow-up ultrasound at a month after procedure revealed the decreased swelling of Lt. sciatic nerve. At 5 months after procedure, manual muscle tests revealed 4+ MRC grade in left ankle plantar flexor and 5 in the other left lower extremity muscles.

Conclusion

We report successful treatment of sciatic neuropathy due to spontaneous piriformis rhabdomyolysis using ultrasound guided sciatic nerve hydrodissection.

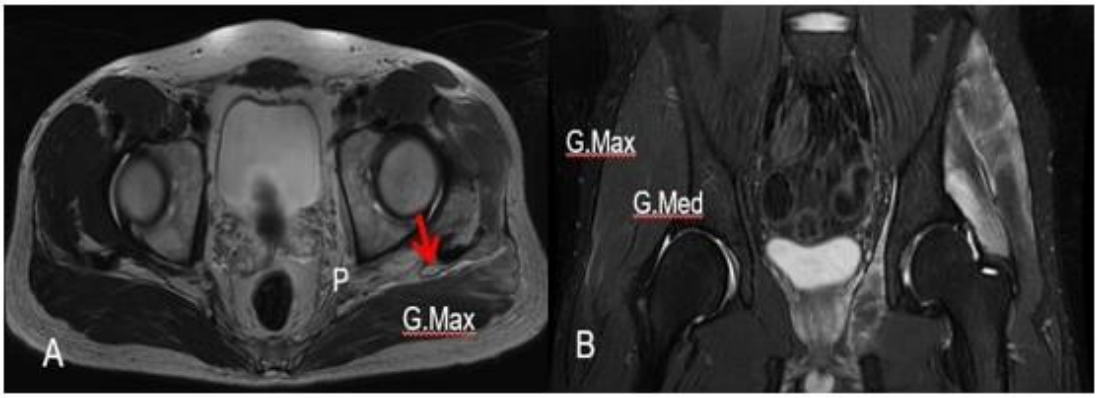

Fig 1. Axial (A) and coronal (B) MRI images of left spontaneous gluteal rhabdomyolysis. Increased signal intensity on T2-weightedimages in left gluteus maximus, medius, minimus, piriformis muscle and soft tissue around the left sciatic nerve (arrow). G. Max; Gluteus maximus, G. Med.; Gluteus medius, P; Piriformis.

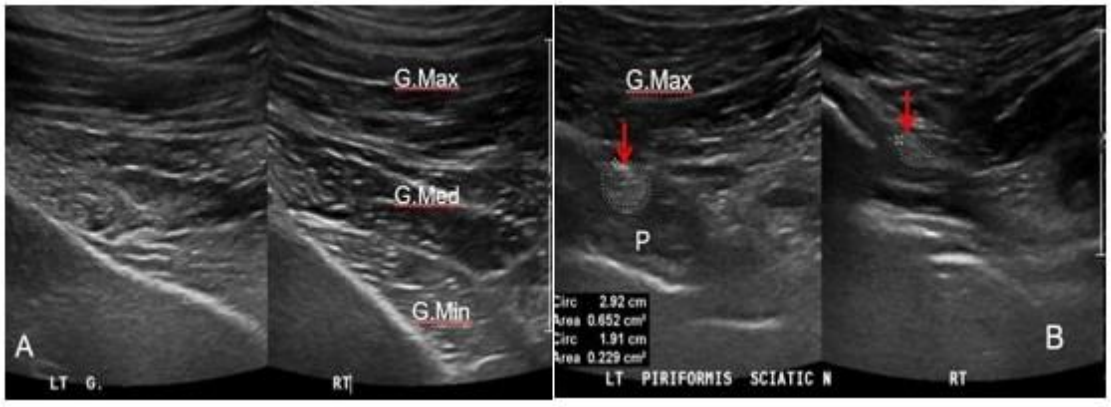

Fig 2. Ultrasound images of left spontaneous gluteal rhabdomyolysis. Transverse ultrasound image showed left gluteus medius and minimus muscles degeneration (A) and swelling of left sciatic nerve (arrow) compared to the right one (B). G. Max; Gluteus maximus, G. Med.; Gluteus medius, G. Min.; Gluteus minimus, P; Piriformis

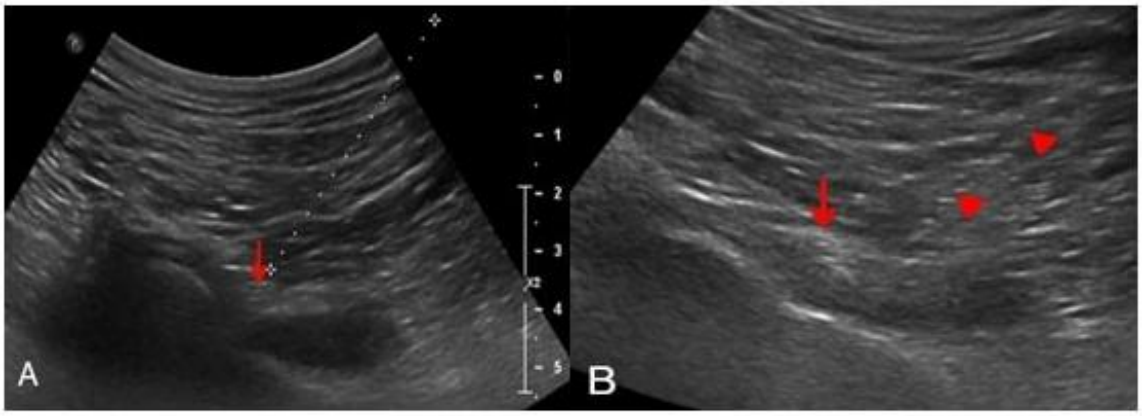

Fig 3. Before (A) and during (B) left sciatic nerve hydrodissection under ultrasound guidance. Ultrasound guided nerve hydrodissection was performed using dexamethasone (1ml) and 5% dextrose water (5cc) around the left sciatic nerve (arrow) beneath piriformis muscle. Needle (arrow heads).