

## Diagnosing and Treating a Patient with Foot Drop -- A Case Report

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A 34-year-old black male entered my office with a complaint of a hamstring pull. He stated that he went to an orthopedist who made this diagnosis and sent him to physical therapy. The patient stated his results were poor; after two sessions of heat, he discontinued.

His current complaint was that his right leg was flabby and he couldn't run. He also mentioned that his foot would drag on the floor. The patient also stated he had severely sprained his right ankle several years previous.

Examination revealed a visibly larger left quadriceps and hamstring muscle groups, the right significantly less in bulk. (Tape measure wasn't available at the time of the examination.) Palpation of the muscle revealed poor muscle tone as compared to the left side. Muscle testing revealed +4 muscle test on the left tibialis anterior and extensor digitorum longus groups with +5 being normal. Straight leg raise revealed 60R/90L. L2 and L4 were tender to percussion.

Also noted was the patient's habit of keeping his wallet in his back right pocket when he sat down in his car or anywhere else. Also noted were extremely tight quadriceps muscles bilaterally. Right piriformis was also splinted and tender to palpation with moderate spasm and tenderness about L3-S1.

After careful evaluation, my diagnosis was a chronic lumbar facet syndrome with muscle atrophy secondary to right-sided piriformis syndrome and disuse atrophy secondary to tendinitis in the extensor digitorum and peroneus brevis tendons.

Treatment included: right-sided piriformis stretching, manipulation of the lumbosacral spine, PNF stretching of the quadriceps and hamstring muscle groups (necessary to reverse the anteriorly-based pelvis which occurs in a facet syndrome). Russian stimulation was used on a three treatment per week regimen on both the right-sided hamstring and foot extensor groups. The patient was given calf, hamstring, and quadriceps stretching exercises to do at home, as well as an exercise band to use at home and at work. Lastly, as muscle strength and leg bulk had improved, friction massage was started in the foot extensor tendons. Affected tendons were challenged until they went weak and then rechallenged after a short time to make sure we were working on the right tendons. If muscle strength had improved, friction massage on the involved tendon was continued for an additional five minutes and then strength was rechecked on the next visit. The patient underwent three sessions of friction massage and was discharged on his 18th visit.

One curious finding was that the patient's arch was low on the right side during the initial examination, and was advised that he'd probably benefit from orthotics. He was rechecked on his last visit and his arch had returned to normal height and was now in neutral position without the help of an orthotic. I know that this has been shown in the literature under various studies to occur using Russian stimulation, but it was the first time I had seen it occur in my practice.

This case is a perfect illustration of multiple factors causing foot drop. It also demonstrates how a

thorough examination is both invaluable and necessary, especially in a case like this. You have to play detective in order to diagnose the problem properly and then treat it appropriately. It also shows that in many cases, a multitude of different rehabilitation techniques are often necessary to achieve the desired results.

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