Magnetic Resonance Imaging alone is not enough to rule out the Radiculopathy, Diagnostic Interventions has a Role!

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ABSTRACT

Entrapment of sciatic nerve due to spasm of piriformis muscle known as piriformis syndrome. It produces radiating pain in buttock, posterior thigh and lower leg that actually originate from the compression of nerve plexus under piriformis muscle, not from the nerve root. Diagnosis of piriformis syndrome is primarily based on patients history, physical examination and diagnostic piriformis muscle block. Diagnostic modalities, such as magnetic resonance imaging (MRI), electromyography (EMG)/nerve conduction velocity (NCV), ultrasonography and computed tomography (CT) scan mostly useful to rule out the other condition of low back pain includes prolapsed disk, facet arthropathy, spinal stenosis and muscle strain. We reported a case of piriformis syndrome with the signs and symptoms mimicking L5–S1 radiculopathy and diagnosed by diagnostic local anesthetic and corticosteroid piriformis muscle injection.

Keywords: Low back pain, Piriformis syndrome, Radiculopathy.

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INTRODUCTION

Piriformis syndrome is a cause for low back pain which is most of the times misdiagnosed as it may mimic with various other conditions. Reported incidence rates for piriformis syndrome among patients with low back pain vary widely, from 5 to 36%. Etiology of piriformis syndrome is also variable. It can be primary due to anatomical problems or secondary due to various other causes like trauma, local ischemia, limb-length discrepancy, etc. Diagnosis of piriformis syndrome is complex. History with various clinical tests along with magnetic resonance imaging (MRI), electromyography (EMG) and diagnostic blocks may help to diagnose this condition.
DISCUSSION

Many conditions associated with chronic pain have no detectable morphological correlate. The cause of pain is not evident on conventional medical imaging. For some such conditions, although the cause might not be evident, the source of pain can be established using diagnostic blocks. Some abnormality in MRI may not be indicative of the source of pain. We cannot choose the correct treatment modality unless we identify the pain generator correctly.

The piriformis muscle is responsible for the symptoms of the piriformis syndrome and is a “double devil” because it causes as much distress by nerve entrapment as it does by projecting pain from trigger points (TrPs). Piriformis syndrome is more common in women than men and occurs most frequently during 4th and 5th decades of life. Symptoms of the piriformis syndrome may be caused by referral of pain from TrPs in the muscle, neurovascular compression by the muscle against the rim of the greater sciatic foramen, or nerve entrapment with in muscle and by SI joint dysfunction.

The myofascial pain component of this syndrome includes pain in the low back, buttock, and posterior thigh that usually is increased by sitting, standing, and walking. Recumbency may not provide relief if the trigger points are more than moderately irritable. Sciatic nerve entrapment can be responsible for pain and paresthesias projecting to the leg and often to the foot. Piriformis syndrome is often associated with entrapment of sciatic nerve, with signs and symptoms of L5–S1 nerve root involvement.

Our patient presented with low back pain, bilateral buttock and posterior aspect of thigh pain with radiation to lateral aspect of left leg and foot which represents L5–S1 dermatomal distribution. Her leg pain aggravated on standing and walking with partial relief on lying down mimicking radiculopathy. In our patient, SLR was positive on left side at 30°. Lasegue’s sign which is pain on pressure application over piriformis muscle when hip is flexed at 90° was positive bilateral. Bilateral FABER test and FAIR test were negative. Robinson found that piriformis muscle was stretched after few degree of leg raising, so that with muscular spasm or inflammation, the sciatic nerve may be directly compressed by piriformis muscle. The different maneuvers are aimed at reproducing the pain experienced by patient, Frieberg, FAIR, Pace manoeuvres, and Beatty’s. None of these maneuvers have had their specificity and sensitivity rigorously validated.

History and physical examination is still the most reliable tool in arrival of diagnosing piriformis syndrome. Although diagnostic block of the piriformis muscle remained a standard in locating the pain generator of the leg. When piriformis syndrome is suspected clinically, local anesthetic injection can be done into the piriformis muscle. Local anesthetic injection, i.e., done into the piriformis muscle is accepted as a reference diagnostic test. The dramatic and almost immediate relief of pain produced by infiltration of the piriformis muscle is considered to be a diagnostic aid for piriformis syndrome. Local anesthetic with or without corticosteroid may be injected into the piriformis muscle to relieve pain upon diagnosing piriformis syndrome. Steroids selectively block the transmission of nociceptive fibers, whereas anesthetics can relax the piriformis muscle and break the cycle of pain and spasms.

In our case, according to clinical features, positive Lasegue’s sign, positive SLR test and a normal MRI imaging except degenerative changes in the disk, we made piriformis syndrome as our first provisional diagnosis. We gave lignocaine and corticosteroid injection into the piriformis muscle. Local anesthetic injection, clinically, local anesthetic injection can be done into the piriformis muscle bilateral. A resulted more than 80% concordant pain relief confirmed our initial diagnosis.

About the diagnostic and treatment modalities for piriformis syndrome, many debates are in progress since many different theories are described for the etiopathogenesis of the syndrome. Besides the clinical history and physical examination, diagnostic injection at the site of maximum tenderness in belly of piriformis muscle with at least 50% decrease in patients symptoms is accepted as an important diagnostic aid. Sometime MRI may not be indicative of the source of pain as in our case but MRI and EMG/Nerve Conduction Velocity (NCV) has to be done to exclude the other cause of sciatica.

REFERENCES

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