Short Communication

A NEW ALGORITHM TO HELP IN DIAGNOSIS ON THE CAUSE OF SCIATICA

Mohamed Abdel-Wanis

Orthopaedics and Traumatology dept., Faculty of Medicine, Sohag Univ., Sohag, Egypt

*E-mail: Wanis307@yahoo.com

Sciatica is a pain radiates from the buttock downward along the course of the sciatic nerve, but the term has been used indiscriminately for a variety of back and leg symptoms. It is a symptom not a disease and is a commonly presented symptom to spine outpatient clinics [1]. The lifetime incidence of this condition is estimated to be between 13% and 40%. Fortunately, the majority of cases resolve spontaneously with simple analgesia and physiotherapy. However, the condition has the potential to become chronic and intractable, with major socioeconomic implications [2]. The commonest cause of sciatica is compression by a prolapsed lumbar disc [3]. However, there are a lot of other causes including compression at spinal cord or nerve roots e.g. extra spinal compression on the nerve root(s), or sciatic neuropathy [1-5]. Sciatic neuropathy can be the result of any focal lesion of the nerve in the hip or thigh, distal to the lumbosacral plexus but proximal to the separation of the nerve into its distal branches. The lesion can involve demyelinative injury, axonal injury, mixed axonal and demyelinative injury, or partial or complete nerve discontinuity. Etiologies of sciatic neuropathy can include compressive, ischemic, neoplastic, or idiopathic etiologies. Compressive injuries can include compression from compartment syndrome, hematoma, hamstring injuries, fibrous bands, persistent sciatic artery, or contriversially, from piriformis syndrome [4]. To our knowledge, there is no previously published algorithm to help in diagnosis on the cause of sciatica. We developed a new algorithm that puts into consideration the common as well as rare causes of sciatica and facilities diagnosis and decision–making specially for beginners, fig. (1).
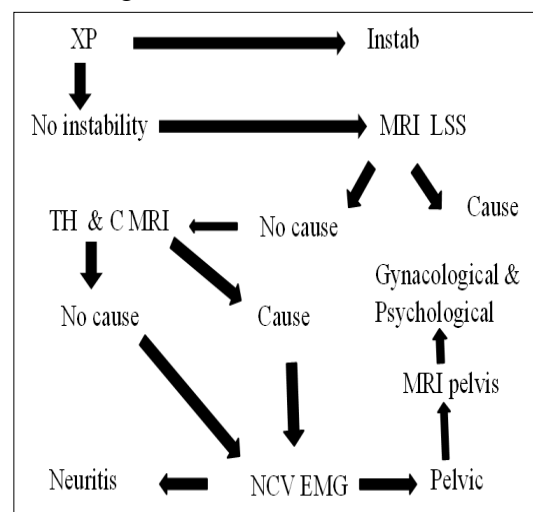

Figure (1) Sciatica Algorithm

The first step is history taking and clinical examination that might point to mechanical or non–mechanical back pain. First modality of imaging is 4 views of lumbosacral spine radiographs (anteroposterior, lateral and lateral in flexion and lateral in extension). If instability could be recognized and is going well with history, then diagnosis is confirmed. If no instability, or symptoms and signs are not going with the diagnosis of instability or with the unstable lumbar spine level, then proceed with lumbosacral magnetic resonance imaging (MRI) that may elucidate compression at the offending level. If, no compression is recognized, then MRI for cervical and thoracic spine should be reviewed. If a cause in the cervical or thoracolumbar spine is suspected depending on MRI finding(s), final diagnosis would not be made except after confirmation by neurophysiological studies. If a cause cannot be recognized in the cervical or thoracic spine, neurophysiological studies might help to diagnose sciatic neuritis. If neurophysiological studies fail to confirm a diagnosis, then imaging of the pelvis and thigh are needed to exclude compression on the sciatic nerve. If no compression would be recognized, neurophysiological study is recommended to compare posterior tibial and peroneal H reflexes elicited in the anatomic position with H reflexes obtained in flexion, adduction, and internal rotation in order to excluded pirifor-mis syndrome. If electrophysiological studies suggest piriformis syndrome, clinical re-evaluation of the patients by Freiberg and FAIR tests, or by resisted muscle contraction, the Pace and Beatty tests [5]. If a diagnosis was not reached, gynecological and psychological evaluation is recommended.

References

[1] Ropper, A., Ross, D., Zafonte, R. (2015). Sciatica. *N Engl J. Med.* 372: 1240-1248.

[2] Stafford, M., Peng, P., Hill D. (2007) Sciatica: A review of history, epidemiology, pathogenesis, and the role of epidural steroid injection in management. *Br J. of Anaesthesia*. 99 (4): 461-473.

[3] Koes, B., van Tulder, M., Peul, C. (2007). Diagnosis and treatment of sciatica. *BMJ*. 334: 1313-1317.

[4] Joseph Feinberg, J. & Sethi, S. (2006). Sciatic neuropathy: Case report and discussion of the literature on postoperative sciatic neuropathy and sciatic nerve tumors. *HSSJ*. 2: 181-187.

[5] Hopayian, K., Song, F., Riera, R., et al. (2010). The clinical features of the piriformis syndrome: A systematic review. *Eur Spine J.* 19: 2095-2109.