Lumbar spinal stenosis differential diagnosis

Foraminal and central canal compression due to bone and facet hypertrophy can be distinguished from that caused by herniated disc, migrated disc fragments, ligamentous hypertrophy, and spinal facet cysts.

Vascular narrowing or obstruction reduces blood flow to the lower limbs during exercise or at rest. Symptoms may range from intermittent claudication to pain at rest. Narrowing of these arteries may produce pain in the buttocks, thighs, or legs. These symptoms may resemble those of lumbar radicular pain. Spine surgeons may overlook obstructive vascular lesions of the lower limbs in patients with lumbar degenerative diseases such as spinal stenosis and spondylolisthesis. Lee et al. from the Department of Neurosurgery, Leon Wiltse Memorial Hospital, Gyeonggi-Do, Anyang-si, Suwon, St. Mary's Hospital, The Catholic University, Seoul, the Republic of Korea investigated the clinical and radiologic risk factors of concomitant vascular pathologic lesions in patients with degenerative lumbar diseases.

If patients presented with a weak or absent dorsalis pedis artery pulse, edema of both legs, and a past history related to vascular lesions of the lower limbs, they evaluated the veins and arteries of the lower extremities using Doppler sonography. If abnormal vascular findings were detected, computed tomography angiography (CTA) of the lower extremities was performed. Radiologic and clinical risk factors of concomitant occlusive arterial lesions of the lower limb were analyzed by logistic regression analysis.

In 2013, 335 patients suspected of having vascular lesions underwent Doppler sonography. Among them, CTA of the lower extremities was performed in 58 patients. The mean age was 69.4 years (35 men and 23 women). Severe narrowing or total occlusion of the leg arteries was detected in 23 patients. Partial obstructive arterial disease of the legs was detected in 14 patients. Occlusion but with good collateral circulation of the leg was found in three patients. Surgical treatment plans were cancelled or changed in 28 patients. The risk factors for occlusive arterial lesions of the legs were an abnormal ankle-brachial pressure index (ABPI), absent dorsalis pedis artery pulse, and lack of response after a pain-blocking procedure.

If patients present with a weak or absent dorsalis pedis artery pulse, abnormal ABPI ratio, and no response after a pain-blocking procedure, the clinician should consider the possibility of severe arterial occlusion of the legs. They suggest that the differential diagnosis of obstructive arterial lesions of the legs from lumbar degenerative diseases is important to prevent unnecessary invasive surgical treatment of the lumbar spine [1)].

A study confirms that people with symptomatic LSS, neurogenic claudication, walking limitations and LSS-related disability are extremely sedentary, and are not meeting guidelines for physical activity. There is an urgent need for interventions aimed a reducing sedentary behaviour and increasing the overall level of physical activity in LSS, not only to improve function but also to prevent diseases of inactivity. This study suggests that reducing sedentary time, increasing time spent in light intensity activity, and increasing time spent in higher intensities of light activity may be appropriate as initial goals for exercise interventions in people with symptomatic LSS and neurogenic claudication, transitioning to moderate activity when appropriate. Results of this study also demonstrate the

importance of employing disease specific measures for assessment of performance in LSS, and highlight the potential value of these methods for developing targeted and realistic goals for physical activity. Physical activity goals could be personalized using objective assessment of performance with accelerometry. This study is one step toward a personalized medicine approach for people with LSS, focusing on increasing physical function [2)].

1)

Lee DC, Heo DH, Cho KS. Concomitant Occlusive Vascular Lesions of Legs in Patients with Degenerative Lumbar Diseases: Do These Lesions Influence Treatment? J Neurol Surg A Cent Eur Neurosurg. 2018 Sep 17. doi: 10.1055/s-0038-1669474. [Epub ahead of print] PubMed PMID: 30223290.

2)

Norden J, Sinha A, Smuck M, Tomkins-Lane C, Hu R. Objective measurement of free-living physical activity (performance) in lumbar spinal stenosis: are physical activity guidelines being met? Spine J. 2016 Oct 25. pii: S1529-9430(16)31023-3. doi: 10.1016/j.spinee.2016.10.016. [Epub ahead of print] PubMed PMID: 27793759.