PHYSIO WINDOW

PARKWAY PHYSIOTHERAPY + PERFORMANCE CENTRE

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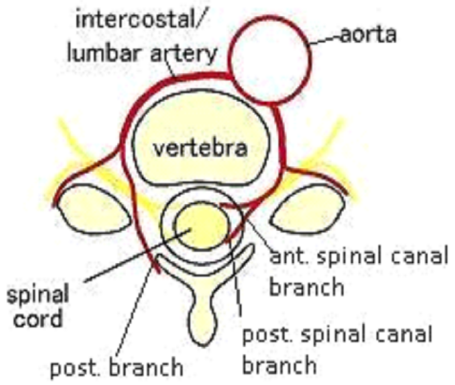
Occlusion of the lumbar arteries a factor in non-specific low back pain!

Non-specific low back pain(LBP) can be a frustrating and confusing entity for both the health professional and the patient. If there is a lack of benefit of medication, physiotherapy and lack of findings on diagnosic investigations we might start to consider neuropathic pain and/or a psychosocial link. Recent research into arterial blood flow suggests another differential diagnosis or contributing factor.

Lumbar Arterial Anatomy:

Pairs of lumbar arteries arise from the aorta at each lumbar level. At L5 the lumbar arteries arise from the middle sacral artery which has previously arisen from the aorta. As the lumbar arteries pass around the vertebral body, primary and secondary periosteal arteries arise to supply the vertebral bodies. They continue to anastomose with the periosteal arteries of the adjacent vertebrae over the surface of the disc. At this point they supply the disc.



Cholesterol levels and Low Back Pain:

A study published in Spine looked at the relationship between findings on aortography and serum cholesterol levels in patients with long term non-specific LBP. The study included patients whose age ranged from 35 to 70 years (with a mean age of 56). Four major findings:

- Over 75% of those with LBP showed occluded lumbar and/or middle sacral arteries!
- The prevalence of occluded arteries was 2.5 times more prevalent in the LBP group than in an age matched control group!
- Disc degeneration was significantly associated with occluded arteries.
- Those with high LDL serum cholesterol had significantly greater neurogenic symptoms and complained more of severe pain.

This study suggests that some or all the pain may arise from ischemic tissues.

Atherosclerosis and Disc Degeneration(DDD):

Another study indicated a relationship between arterial occlusion of the lumbar and middle sacral arteries and DDD. Shockingly the reviewers identified 179 relevant studies and included 25 papers on this topic. This review concluded that:

- There is an relationship between atherosclerosis and disc degeneration.
- There is a strong relationship between occlusion of these arteries and chronic LBP.
- Aortic calcification is associated with LBP and stenosis of the more distal branches was linked to Disc Degen and LBP
- Smoking and high cholesterol are the most consistent associations with DDD and LBP.

Clinical Application:

The evidence is clear that there is a relationship between Atherosclerosis, LDL elevation , LBP and DDD. We need to be careful not to place clients into absolute categories. Improving obvious biomechanical issues has a proven track record at reducing the incidence and severity of LBP. For those who do not completely resolve, a multidisciplinary approach may be the most effective. Physiotherapists and Physicians collaborating to treat all biomechanical findings and identify any factors that might cause a deficient arterial supply to the involved tissues may provide superior long term results.

references:

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