



## Lumbar spinal Stenosis.

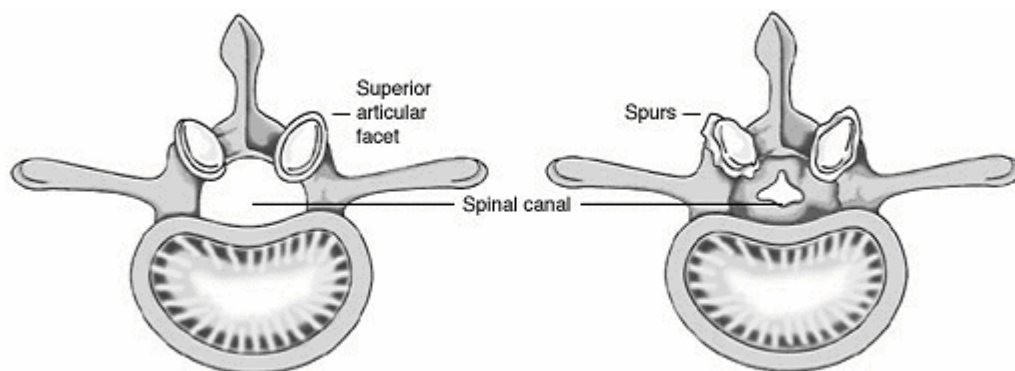
**Mr Greg Finch FRACS Orthopaedic Spinal Surgeon**

**Consulting at SCGH, SJOG Subi & Murdoch Ph 93661960, Fax 93661963**

### Definition

Lumbar Spinal Stenosis is a narrowing of the spinal canal (fig1). Certain individuals may have a narrow canal from birth (congenital stenosis), but the majority of individuals develop narrowing with age. With age, normal wear and tear may result in Disc degeneration, Facet joint changes, Ligament changes( Ligamentum Flavum infolding/Hypertrophy/Calcification ) and Alignment changes (Degenerative Spondylothesis Scoliosis or Rethrolithesis). All or one of these factors may be all that is required for spinal stenosis to occur.

Spinal stenosis usually occurs in individuals greater than 50y old in the last three levels of the lumbar spine namely L3-4, L4-5 and L5-S1. It is diagnosed by taking a history, and doing a physical examination, and then confirmed with a MRI or CT scan/myelogram.



**Fig 1 Normal and Stenotic spinal canals.**

## How do patients present?

There are various signs and symptoms of spinal stenosis. A common one is referred to as **spinal claudication**. This refers to pain in the legs, the calves or the buttocks. This pain is associated with activity and is often relieved by sitting and resting. A common complaint is that an individual will be able to walk for some distance then develop leg pain, BUT is able to get rid of the leg pain by sitting and resting for five to ten minutes. Upon trying to walk a similar distance the pain will return. The pain may be a radiating pain like sciatica or it may be a cramping pain. At times though, the stenosis may be severe enough that the leg pain is constant and unremitting.

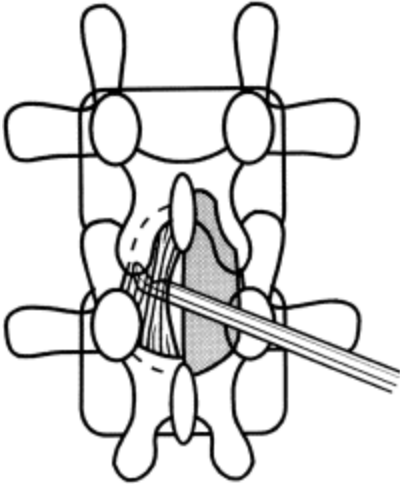
Non-neural causes of a similar type of pain include trochanteric bursitis and osteoarthritis of the hip or the knee. Peripheral vascular disease may coexist with lumbar spinal stenosis, making it difficult to determine the cause of the pain. I thus seek a vascular surgeon's opinion if peripheral pulses cannot be palpated in the lower extremity in anyone I suspect has spinal stenosis.

## Surgical Treatment

There is no upper age limit for surgery in spinal stenosis. Overall wellbeing and health of the patient is of prime consideration.

Spinal stenosis can be relieved by removing the overgrown portions of the facet joints posteriorly. At times only parts of the facet joint have to be removed. In more severe cases most of the facet joints will have to be removed in order to adequately decompress the nerve roots. Whether or not a fusion has to be performed at the same time as a decompression is dependent upon many factors including the stability of the spine, the age of the patient, and the amount of bone being removed. The reason for doing the fusion after the decompression is so that instability does not develop and forward slippage or spondylolisthesis does not occur. Some studies do suggest however that when fusion is done at the same time as decompression, overall results are improved.

In selected cases a Microdecompression for Lumbar Spinal Canal Stenosis can be performed (fig 2). The suggested advantages are that less of the ligaments and muscles of the posterior spine are disrupted and less bone is removed. This provides a faster rehabilitation time and shorter hospital stay.



**Figure 2.** Microdecompression. The shaded area demonstrates the ipsilateral decompression. The hashed lines demonstrate the contralateral area to be addressed **under** the midline structures; visualization is afforded by angulation of the microscope toward the contralateral side.

#### References

Microdecompression for Lumbar Spinal Canal Stenosis. Weiner, Bradley K. MD. Walker, Matthew MD. Brower, Richard S. MD. McCulloch, John A. MD FRCS(C).. *Spine*. 24(21):2268, November 1, 1999.

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