X-STOP or Laminectomy for Spinal Stenosis?

Spinal stenosis is defined as a narrowing of the space for the nerves and/or the spinal cord. It can occur developmentally and as part of the aging process of the spine. When it occurs in the lower (lumbar) part of the spine, the symptoms of spinal stenosis can include pain radiating to the legs (sciatica), a heavy feeling in the legs when walking, numbness, and tingling sensations. Patients often say that it becomes more difficult to walk longer distances. Sitting can help the symptoms temporarily, and leaning over slightly helps them to walk further.

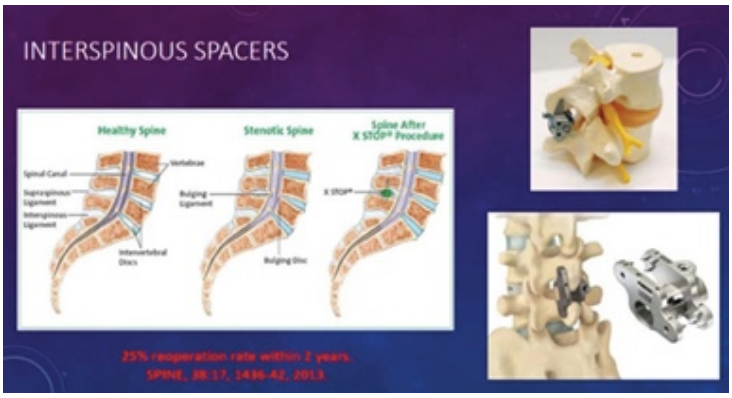
We can establish a diagnosis of spinal stenosis if the patient has a history of leg symptoms as described above. A physical examination can appear totally normal, so imaging, including x-rays, an MRI, or a CAT scan is considered standard procedure to help us confirm the diagnosis.

Treatment options include modifying physical activity if it is practical, anti-inflammatory medications such as Advil or Aleve, and spinal injections (epidural steroids). Depending on the degree of stenosis (mild, moderate or severe), the success rates of these non-surgical options can vary.

In other words, if one has moderate to severe spinal stenosis and symptoms are progressing, then non-surgical options will likely only provide temporary relief.

When surgery is necessary, the standard operation is a laminectomy, where we remove the bone and the ligaments of the spine from the back. If the nerves are being pinched at the channels where they exit the spine, the arthritic joints are trimmed (foraminotomy). When only parts of the bone in the middle of the spine are removed and the channels are opened up, it's called a laminotomy/foraminotomy.

Recently, we've seen some new, less invasive options developed to address symptomatic spinal stenosis. These include the X-STOP and other competitive devices. The concept of the devices is to place a spacer in the back of the spinal column in between the bony spinous processes. The spacer indirectly wedges open the space between the vertebrae and makes more space for the nerves and the channels, helping to decrease or eliminate the symptoms of spinal stenosis.



We are beginning to see some studies comparing the success of the laminectomy as compared to the new surgical procedures. Recently, a study published by Stromqvist, B. and others followed patients either treated with a laminectomy or the X-STOP device for two years after surgery. The results showed that both groups improved significantly and in a similar fashion.

However, more patients that had the X-STOP procedure (26%) needed additional surgery when compared to the one that had the decompression alone (6%). The study found that in 22% of

the X-STOP patients, the symptoms did not improve. They required removal of the implant and conversion of the decompression.

While the advantages of the X-STOP procedure include a less invasive procedure, in my opinion, patients should be aware of the high probability (26%) of repeat surgery.

SPINE, 38:17, p 1436-1442, 2013.