PROJECT INFORMATION

June 2020

Comparing Surgical Treatments for Cervical Spondylotic Myelopathy -- The CSM-S Trial

Principal investigator

Zoher Ghogawala, MD

Organization

Lahey Clinic

What was the research about?

Cervical spondylotic myelopathy, or CSM, happens when the spinal cord becomes compressed, or squeezed, as people age. CSM can cause neck pain, loss of balance, and weakness in the hands and arms.

In this study, the research team compared types of surgery to treat CSM:

- **Ventral decompression and fusion:** A surgeon stabilizes the spine from the front of the neck.
- **Dorsal decompression:** A surgeon stabilizes the spine from the back of the neck. A surgeon can do two types of dorsal surgery. One type is a technique called fusion. The second type is called dorsal laminoplasty.

What were the results?

One year after surgery, the research team found no difference in physical function for patients with ventral or dorsal surgery. Patients with ventral surgery had more problems swallowing than patients with dorsal surgery.

Compared with the other two types of surgery, patients with dorsal laminoplasty had better physical function and fewer problems from surgery. They were also less likely to report using opioids for pain, having imaging tests, and having ongoing physical therapy. Patients didn't differ in spinal function, quality of life, ability to return to work, or number of doctor visits. But the patients with dorsal laminoplasty may have

differed from most patients with CSM. Also, only 28 patients had dorsal laminoplasty. As a result, it's hard to say that these patients' results were due to the type of surgery.

Who was in the study?

The study included 163 patients ages 45–80 who needed surgery for CSM. Of these, 85 percent were white, 8 percent were black, 3 percent were Asian, 2 percent were American Indian, and 1 percent were another race; 4 percent were Hispanic. The average age was 62, and 51 percent were women. Among patients, 66 had ventral decompression and fusion, 69 had dorsal decompression and fusion, and 28 had dorsal laminoplasty.

What did the research team do?

The research team assigned patients by chance to receive either ventral or dorsal surgery. For patients assigned to have dorsal surgery, their surgeons chose whether to perform dorsal decompression and fusion or dorsal laminoplasty.

One year after surgery, patients completed surveys about their physical and spinal cord function and quality of life. The research team also asked patients to keep a diary of their return to work and healthcare use. Patients tracked imaging tests, use of opioids for pain, and visits with physical therapists and doctors.

Patients, surgeons, and health insurers provided input on the study.

What were the limits of the study?

Because surgeons chose which type of dorsal surgery to perform, patients' results may be due to reasons other than surgery type. Most patients in the study were white. Results may differ for patients of other races.

Future research could compare the three types of surgery with a more diverse group of patients who are assigned by chance.

How can people use the results?

Patients with CSM and their doctors can use the results when considering type of surgery for CSM.

To learn more about this project, visit www.pcori.org/Ghogawala324.