Dynamic Chiropractic

Joint DC-MD Research Presented to Congress of Neurological Surgeons

Editorial Staff

Collaborative research between neurosurgeons from Bloomington, Illinois, and Steve Troyanovich,DC, of Normal, Illinois, was presented at the 17th annual meeting of the American Association of Neurological Surgeons (AANS) Congress of Neurological Surgeons (CNS), February 15-16 in Phoenix, Arizona. The research was presented to the AANS/CNS section on disorders of the spine and peripheral nerves, and marked the first time research with chiropractic implications-or research co-authored by a DC-was published in the AANS/CNS proceedings.

The two research studies[1,2] were the result of meetings and discussions over the last two years between neurosurgeons Ann Stroink and Michael Amaral of the Central Illinois Neruoscience Foundation (CINF), and Dr. Troyanovich a private practitioner and member of the postgraduate faculty of National University of Health Sciences and a member of the adjunct research faculty of Life Chiropractic College West. The discussions between Dr. Troyanovich and the surgeons concerned cervical and lumbar fusion techniques, and whether these surgeries preserved alignment of the cervical and lumbar lordoses.

"In my practice, I was seeing patients who had received fusion surgeries for raduculopathies or myelopathies," explained Dr. Troyanovich. "Although the surgeries had resulted in resolving the neurological symptoms of these patients, many of them continued to have neck and back pain." Dr. Troyanovich had participated in research that suggested that subjects with well maintained lordoses had less musculoskeletal pain than subjects with diminished or reversed lordotic curves. "I discussed this at length with the surgeons and challenged them to investigate whether their surgical techniques maintained cervical and lumbar lordosis. They were curious and open-minded enough to accept my challenge, and that's how the research came about."

In the first study, the postsurgical magnitude for the lumbar lordosis of 50 patients receiving lumbar fusions was compared to the magnitude of lumbar lordosis for 50 nonsurgical chronic low back pain patients, and 50 pain-free subjects. The results of this study demonstrated that the fusion surgeries in the lumbar spine do not preserve overall physiologic lordosis, nor intersegmental lordosis at the surgery site, at magnitudes possessed by either asymptomatic control subjects, or even those of chronic low back patients.

The second study looked at single-level cervical fusions and two different techniques used to perform these surgeries. One group of patients received fusions using the conventional method of simply placing a bone graft between the vertebral bodies after discectomy; the second group received an anterior cervical screw plate fastened to the adjacent vertebral bodies while covering the bone graft.

Although both groups demonstrated improved overall lordotic alignment and improved lordotic alignment at the surgical site immediately after surgery, the long-term follow-up demonstrated that those patients who did not receive a plate were more likely to develop a kyphotic deformity after healing was completed.

"In both studies, it appears to me that the design of the hardware used in the surgeries had a direct effect on the anatomical outcome. Lumbar fusions are usually performed with a cylindrical titanium cage placed between the vertebral bodies. This may doom the vertebral alignment at the surgical site to parallel end plates, at best," Dr. Troyanovich reported.

"In the case of the cervical fusions, the plate has an eight-degree lordotic bend in it. Along with sharing the gravitational load generated on the graft, that bend likely helps maintain the lordotic curve. Without the plate, the graft seems to either collapse or settle into the vertebral end plates which disturbs lordotic alignment."

Fostering a relationship between medical physicians and chiropractors is a project Dr. Troyanovich has been involved with for over 10 years. Sharing the results of chiropractic research that has been published in both chiropractic and medical journals has helped Dr. Troyanovich forge a partnership between professions that have traditionally been adversaries.

Dr. Troyanovich started by sending a newsletter series about chiropractic practice to about 75 local MDs. The newsletters had reviews of scientific studies about chiropractic that had been published in their journals. "Once they saw that there was more scientific evidence to support what DCs do-in select areas of health care-as compared to what they (MDs) do, it was difficult for them to ignore me and what I might have to offer their patients," Dr. Troyanovich explained.

"Ultimately, I don't want anybody to get a spinal fusion," Dr. Troyanovich clarified. However, he praised the neurosurgeons' willingness to have their methods evaluated and critiqued by a chiropractor. "The fact that they send patients to me who don't need surgery and some who need postsurgical rehabilitation is an added plus that has resulted from our collaboration."

References

1. 1. Amaral MA, Troyanovich SJ. How well does lumbar fusion preserve physiologic lordosis? In: Ryken TC, Heary RF, Haid RW, Alexandar JT, editors. *Proceedings of the 17th Annual Meeting American Association of Neurological Surgeons/Congress of Neurological Surgeons Section on Disorders of the Spine and Peripheral Nerves.* Phoenix, AX: American Association of Neurological Surgeons/Congress of Neurological Surgeons; 2001. p.41.
2. 2. Stroink AR, Troyanovich SJ, Kattner KA, Gubina I. Cervical lordosis: Single level anterior plating versus nonplating fusion techniques. In: Ryken TC, Heary RF, Haid RW, Alexandar JT, editors. *Proceedings of the 17th Annual Meeting American Association of Neurological Surgeons/Congress of Neurological Surgeons Section on Disorders of the Spine and Peripheral Nerves.* Phoenix, AX: American Association of Neurological Surgeons/Congress of Neurological Surgeons; 2001. p.50.

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