

Similar outcomes of surgical vs. nonsurgical treatment for cervical spine fracture

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For older adults with "C2" fractures of the upper (cervical) spine, surgery and nonsurgical treatment provide similar short- and long-term outcomes, reports a study in the May issue of [Neurosurgery](#), official journal of the [Congress of Neurological Surgeons](#).

Although the patients were at significant risk of complications and death in the year or two after C2 fracture, these risks are similar with surgical and nonsurgical treatment. "[T]hus, age alone does not appear to be a contraindication to surgical fixation of C2 [fractures](#)," concludes the study by Dr. Maxwell Boakye of University of Louisville, KY, and colleagues.

Surgery vs Immobilization for C2 Fractures

The researchers analyzed the outcomes of 56 [older adults](#)-average age 80 years-treated for fractures of the second cervical vertebra, or "atlas," over a ten-year period. Older adults are at increased risk of C2 fractures, a serious injury that requires prompt treatment to prevent injury to the cervical (neck) portion of the spinal cord. None of the patients had evidence of spinal cord damage at the time they were treated.

Options for treatment for C2 fractures are surgery to stabilize the fracture or nonsurgical treatment (immobilization) to allow the fracture to heal. In the study, 28 patients were treated with surgery and 28 with immobilization. (The treatments weren't randomly assigned, but were up to the choice of the treating physician.) Dr. Boakye and colleagues compared the short- and long-term outcomes of the surgical and nonsurgical treatment groups.

The two groups were similar in terms of age and other characteristics. Most had two or more accompanying (comorbid) medical problems. The

fracture fragments were more displaced (four versus one millimeters)-indicating somewhat more severe fractures-for patients undergoing surgery.

Surgery generally consisted of an operation to fuse the fractured C2 vertebra to one or more adjoining vertebra. Nonsurgical treatment consisted of several weeks of [immobilization](#), usually in a hard cervical collar. The surgical patients spent more time in the hospital-averaging about twelve versus four days-but both groups had good fracture healing. None of the patients in the nonsurgical group required later surgery

Both groups of elderly patients with C2 fractures had significant but similar rates of death and complications. Within 30 days, one patient died in the surgical group and two in the nonsurgical group. Complication rates were 18 versus 25 percent.

Age Is No Barrier to Surgery

Especially with the aging of the population, there's a need for information on the outcomes of surgical versus nonsurgical treatment for elderly patients with C2 fractures. Some previous studies have suggested increased rates of death or complications, including failed fracture healing, in older adults receiving nonsurgical treatment for C2 fractures.

Although not a formal randomized trial, the new study suggests similar outcomes of the two approaches to treatment for C2 fractures in older adults. "The data…demonstrate equivalent complications and mortality, where both groups were of similar age and overall health," the researchers add.

There was also no evidence that younger, healthier

patients were more likely to undergo surgery. Dr. Boakye and coauthors conclude, "Surgery should not be excluded as an intervention if the physician believes it to be the better treatment option, especially for unstable fractures." They emphasize the need for further studies, including cost-effectiveness comparisons of surgical versus nonsurgical treatment for stable C2 fractures.

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