

# Spine surgery is safe in patients of advanced age

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Spine surgeons from seven institutions in Sapporo, Hokkaido, Japan, conducted a multicenter, prospective study of spine surgeries performed in patients 80 years of age and older. Although the overall perioperative

complication rate was high—20%, there were no major systemic complications and no deaths in the patients. The surgeons conclude that spine surgery is safe in this age group.

Detailed findings of this study can be found in a new article, "Perioperative complications of spine [surgery](#) in patients 80 years of age or older: a multicenter prospective cohort study," by Takamasa Watanabe, MD, and colleagues, published today in the *Journal of Neurosurgery: Spine*.

The world's population is steadily growing older. This can be seen most readily in Japan, where elderly people (ages 65 years and older) currently make up a quarter of the total population; that proportion is expected to reach one-third by 2050. The aging population in other countries is also growing. Along with increased age comes a variety of age-related health problems; degenerative spine diseases constitute a common health problem in [older persons](#).

Spine surgery can improve quality of life in many patients with damaged or deteriorating spinal components. This is true for [older patients](#) as well as for younger ones. But what about patients in the upper range of elderly, those 80 years of age or older? Is spine surgery advisable in this group and what risks does it carry?

The authors of this study conducted a prospective multicenter study with two goals: 1) determine what perioperative complications of spine surgery are associated with patients in this advanced-age group and 2) investigate the risk factors for perioperative systemic complications.

Seven spine centers with board-certified spine surgeons participated in the study. The patient group consisted of 270 patients, 80 years or older, who underwent elective spine surgery in 2017. (Patients with tumors, infection, or trauma were not included.)

Perioperative complications were defined as adverse events occurring during surgery or within 30 days postoperatively. Complications were separated into those occurring at the surgical site and those that were systemic.

The total perioperative [complication](#) rate in the study was 20% (67 complications in 54 patients). Complications at the surgical site occurred in 22 patients (8.1%), and minor systemic complications (anemia, delirium, or urinary tract infection) occurred in 40 patients (14.8%). No patient experienced a major systemic complication (one that could be potentially life-threatening or lead to prolonged hospitalization), and no patient died. The rate of repeated operations was 4.1%.

To identify risk factors for perioperative complications, the authors examined surgical factors (operative level, number of spinal levels treated, type of surgery, length of surgery, and estimated [blood loss](#)) as well as patient demographics (age, sex, and body mass index) and preoperative health status.

Each patient's preoperative health status was determined by using the following measurements: the Charlson Comorbidity Index (predicts survival based on comorbidities); the American Society of Anesthesiologists Physical Status Classification System (used to assess the patient's general condition); the Eastern Cooperative Oncology Group Performance Status (ECOG-PS) (used to evaluate patients' ability to take care of themselves); the presence of sarcopenia (loss of muscle mass and strength); and the Geriatric Nutritional Risk Index (used to evaluate nutritional risk).

Both the univariate and multivariate analyses identified [spine](#) surgery involving instrumentation (for example, inclusion of plates and screws), operations lasting more than 180 minutes, and the ECOG-PS (limited activities of daily living) as significant risk factors for minor systemic

perioperative complications.

The authors suggest that [spine surgeons](#) be aware of these risk factors when preparing for surgery in this advanced-age patient group.

Older age itself, the presence of comorbidities, and being at nutritional risk were not found to be [risk factors](#) in this study. In addition, there were no severe complications. On the basis of their findings, the authors conclude that it is safe to perform [spine surgery](#) in [patients](#) of advanced age.

**More information:** Watanabe T, Kanayama M, Takahata M, Oda I, Suda K, Abe Y, Okumura J, Hojo Y, Iwasaki N: Perioperative complications of spine surgery in patients 80 years of age or older: a multicenter prospective cohort study. *J Neurosurg Spine*, published ahead of print December 17, 2019. [DOI: 10.3171/2019.9.SPINE19754](#)

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