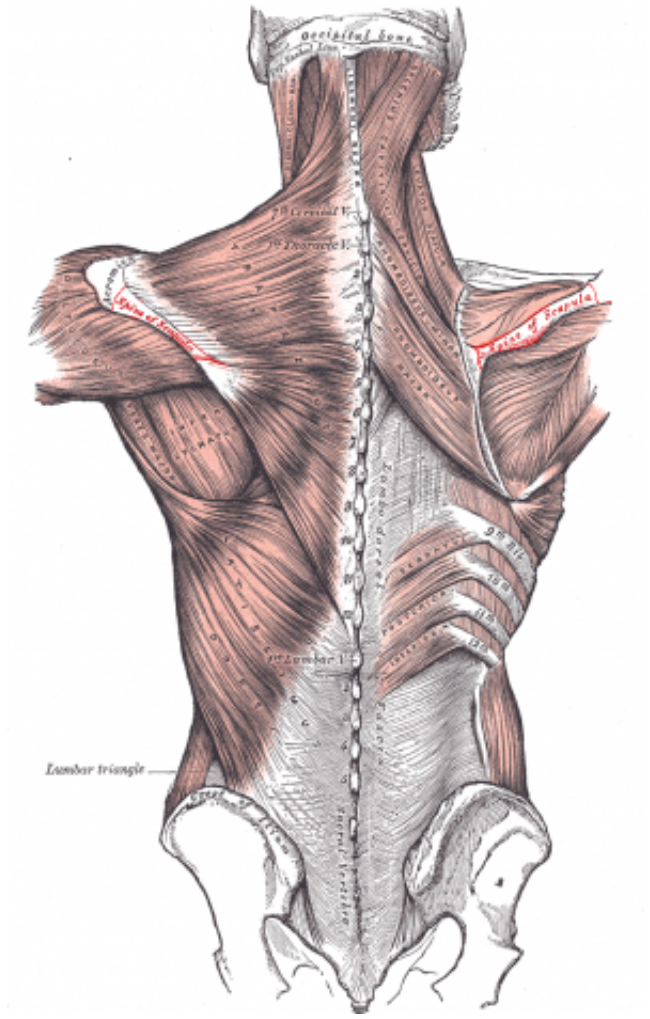
Research team shares enhanced recovery pathway for complex spine surgery

August 31 2021



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Surgery to treat spine deformities in the lower back in adults is often

complex. Experts at Hospital for Special Surgery (HSS) have been exploring ways to increase the efficacy and efficiency of these procedures, to improve both short-term and long-term patient outcomes and bring down costs.

Today at the American Academy of Orthopaedic Surgeons (AAOS) 2021 annual meeting, details of an enhanced recovery pathway developed for these patients were presented and the improvements that patients saw after being treated with this approach were described. The results of the investigation into its effectiveness were also published in January 2021 in *The Spine Journal*.

"In today's healthcare environment, we're all looking for ways to decrease costs and improve the quality of care we deliver," says HSS spine surgeon and principal investigator Han Jo Kim, MD. "We wanted to see which factors were modifiable in the care of these patients, to help us decrease the time spent in the operating room and patients' length of stay and minimize complication rates."

The team started using its enhanced recovery pathway in February 2019. The study reports data from 40 patients who underwent fusions of at least five vertebrae in the lower back using the new protocol. Although spinal fusions of five or more vertebrae are considered complex procedures, they are relatively common and used to treat a number of conditions.

"Traditionally, these patients stayed in the hospital for at least seven or eight days," Dr. Kim says. "This procedure has a high reported complication rate, and a high rate of revision surgeries, 90-day readmissions and dependence on rehabilitation facilities upon discharge. For those reasons, we thought it would be an important operation to evaluate when we started targeting methods to improve complex spine surgery."

One key component of the new treatment pathway was always using the same surgical team, including surgical technicians, nurses and anesthesiologists. After surgery, the same physical therapy team cared for all the patients in the study, and patients were mobilized three times a day. Rigorous patient selection was also important for ensuring that patients could fully benefit from the optimization.

During surgery, the team focused on minimizing blood loss and keeping the time spent in the operating room as short as possible. When feasible, powered surgical instruments were used. The surgeries were done in four stages of one hour each, so that all members of the team would know how to anticipate the next phase of the operation.

Several changes were made postoperatively as well. The regimen for pain medication was modified to reduce the complications seen from narcotics. The patients were prompted to get out of bed the same day as their surgery, instead of waiting until the next day. And physical therapy sessions were increased from twice a day to three times a day.

When compared with matched patients treated without the optimized pathway, the study population achieved remarkable results. No patients went to the intensive care unit following surgery, compared with a usual rate of 30%. Hospital stays were decreased from an average of 7.3 days to 4.5 days. A higher rate of patients were discharged home versus to a rehabilitation facility (95% versus 65%). Overall patient outcomes at one year were equivocal.

"HSS is uniquely positioned to execute a program of this kind, because everyone here is dedicated to orthopedic surgery and care. That enables us to create and initiate optimized pathways," Dr. Kim says. "Not every hospital has the infrastructure and resources to build this type of program, but we wanted to share what we did so other centers could model it. Ultimately, the goal is to improve the quality of care that we

provide for patients and to decrease the costs by instituting such pathways across multiple healthcare systems in the country that care for complex spine patients."

More information: Han Jo Kim et al, Enhanced recovery pathway in adult patients undergoing thoracolumbar deformity surgery, *The Spine Journal* (2021). DOI: 10.1016/j.spinee.2021.01.003

Provided by Hospital for Special Surgery