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## **Disc surgery using stem cells a first, hospital says**

*JULIE POPPEN*

An Aurora spinal surgeon Tuesday performed what's being called the first disc surgery in the United States using adult stem cells to help repair a man's injured lower back.

Dr. Jeffrey Kleiner performed the operation at The Medical Center of Aurora.

"It's something we'll start doing more and more of - if it is successful," Kleiner said. "Like all scientific processes, we're hopeful for a home run, but we have to take this one step at a time. We're just looking for relatively small gains."

Dr. Christopher Centeno, medical director of Westminster-based Regenerative Sciences, the company that grew the cells, said the surgery could change the way future back operations are handled.

"I think this is the beginning of a new era of surgery," Centeno said Tuesday. "We usually take out the offending piece but do nothing to repair the small damage we just created. This allows you to do both."

Adult stem cells have been injected into patients' backs and joints to promote tissue growth, but it's the first time stem cells have been injected during a spinal surgery, he said.

The bone marrow cells used in Tuesday's procedure were harvested from the middle-aged male patient then brought to the laboratory where millions more were grown over three weeks using the patient's blood, Centeno said.

Tens of millions of the cells were then injected into the man's back during a discectomy, a surgery to remove a herniated or bulging intervertebral disk.

The patient, who had tried numerous therapies to alleviate extreme leg pain, declined to comment because he is in the midst of a lawsuit related to his herniated disc, hospital officials said. Centeno said the man's back was injured when he was hit by a commercial truck.

Kleiner said a disc loses its ability to be a shock absorber after surgery because it no longer produces a spongy substance that can hold water.

"The stem cells should take on the properties of the cells within the disc and ultimately improve the hydration of the disc - and prevent the progression of degeneration," Kleiner said.

Adult stem cell research proliferated after President George W. Bush banned the use of embryonic stem cells in medical research in 2001 due to moral concerns.

Procedures using adult stem cells are not covered by insurance, Centeno said. The patient who underwent spinal surgery Tuesday paid \$5,250 to have his cells harvested, cultured and injected into his back, Centeno said.

It won't be known for another three to six months whether the procedure worked.