

## ***MAST/TLIF Featured In Courier-Journal***

### *New Medicine*

#### **New back surgery means quicker recovery**

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After injuring her lower back in a factory accident, Diana Gibson of Highview suffered with constant pain for about four years. In addition to the back pain, her legs felt numb and heavy.

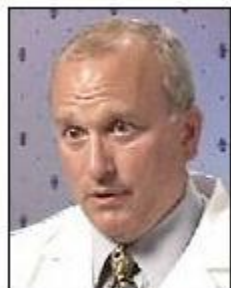
Neither physical therapy nor drugs brought relief. Gibson became inactive and struggled against depression.

Her husband urged her to consider a surgery in which two of her ruptured disks — the soft elastic material between the vertebrae of the spine — would be replaced with bone taken from her during the operation. Rods, screws and spacers would be inserted so that three lumbar vertebrae would be fused to reduce her pain.

She dreaded the operation's long recovery of up to six months. "I didn't want to go through it," Gibson said.

But as fate would have it, on March 4, Gibson became the first person in the world to get a minimally invasive version of the operation she needed.

It is called a two-level Minimal Access Spinal Technology/ Transforaminal Lumbar Interbody Fusion, or MAST/TLIF for short.



*Rouben*

It was performed at Jewish Hospital by Dr. David Rouben, a Louisville spine surgeon.

"I didn't stay overnight. I was in the hospital 12 hours," Gibson reported. "Within two weeks, I was out raking leaves. It was phenomenal."

Several small incisions of ½ inch to 1½ inches are made in the patient for the MAST/TLIF procedure. Blood loss is minimal, about a teacupful, Rouben said. And muscle fibers are teased apart with small instruments. There are no sutures or staples to close the small incisions. They are glued.

"This is not a new procedure but a new technique," Rouben said.

For a traditional lumbar fusion operation, the incision would be 3 to 7 inches long. The patient would lose one to two units of blood, and the muscles of the back would be stripped away from the spinal column, resulting in major scarring of the muscles. That makes recovery painful and difficult. The hospital stay for that operation is three to five days and recovery about six months.

The new technique is made possible by medical technology created by a company called Medtronic. Through the small incisions, a mechanical arc device delivers a rod and screws to fixate adjoining vertebrae. Dilators make a tunnel down to the spinal column. The tubes are "like stacking funnels," Rouben said. Through a 1-inch diameter



Diana Gibson played with her grandson, Luke, 3, in the front yard of her home. Gibson had chronic, agonizing back pain and had a new, less-invasive back surgery that has been successful.

*Photo by MICHAEL CLEVINGER*

tunnel held open by a retractor tube, bone is removed and the herniated disk scooped out "like a seed from an avocado." Then crushed bone is implanted, Rouben explained.

It takes about five hours to do the operation, in which two levels of the spine are fused. It takes about three hours to fuse one level.

Rouben points out that a surgeon in Minneapolis, Dr. James Schwender, performed the one-level version of the operation using the new technique before he did.

The men independently became involved with Medtronic in developing the new and innovative system for doing this particular kind of spinal-fusion operation.

Both surgeons do one-level and two-level operations and have performed about 100 such operations between them over a two-year period, by Rouben's count. About 85 sites are now doing the surgeries, a Medtronic spokesman said.

Rouben has been teaching the technique to other surgeons. Locally he has taught it to Drs. Jonathan Hodes, Clark Bernard and Wayne Garcia Villanueva. Last week, he taught it to Dr. Nimrod Rahamimov, an Israeli surgeon who will teach it in his country. He is the first surgeon outside the United States and Canada to learn the technique. He joined Rouben in surgeries at Jewish Hospital last week.

"It's a really amazing and wonderful advance over what we had before," Rahamimov said.

Rouben thinks the next innovations on the horizon in lumbar-spinal surgery will be the development of artificial disks to replace degenerated ones, and implants — screws, rods, spacers and so forth — that dissolve after the patient's bone grows in place.

But for now, the new procedure marks a major breakthrough — reduction in time off from work and in the hospital and quick resumption of a normal life, Rouben said.

He has performed the operation on patients ages 17 to 83 and is still amazed at how quickly they return to normal. "I've had patients leave the hospital two hours after they got out of recovery, and the maximum they've stayed is two days. Their rehabilitation starts in two weeks, and they're back at work in three weeks."

Today Gibson is pain-free and knows the joy of lifting up her grandchildren. "I can even wrestle with them."

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