Orthopedics

Ozone Shot as Effective as Surgery for Herniated Discs

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Patients with severe pain from a herniated disc now have an alternative to disc surgery -- ozone injection. The treatment is available in Europe and has been most commonly performed in Italy. It is not approved by the FDA for use in the U.S. A Toronto team examined the results of 12 previous studies of ozone treatment of herniated discs. The studies showed ozone therapy to be just as effective as surgery. It's also a simpler and safer procedure. The researchers predict that the procedure will become common in the U.S. within the next five years.

Spinal discs can be thought of as gel-filled shock absorbers or pillows that lie between the bones of the spinal column. A weakness in or injury to a disc may cause it to bulge or even cause some of the gel to ooze out. This is called a slipped disc, herniated disc or spinal hernia and it often puts pressure on one or more spinal nerves, causing pain which can be severe, sometimes even crippling.

Rest is the initial treatment for a herniated disc. If this doesn't work, there are several other options. The most drastic of these are partial or total disc removal. These are treatments of last resort; many things can go wrong during a surgical procedure in a nerve-rich area such as the spine. Surgery is performed on only about 10% of all herniated discs.

Doctors have long sought an effective treatment that lacks the drawbacks of surgery. Here, the Toronto team conducted a statistical analysis of the effectiveness of ozone therapy in 12 previous European studies involving over 8,000 patients (a meta-analysis). What they were looking at was how much the treatment eased the sufferers' pain and how much it improved their ability to conduct everyday tasks.

Ozone injection caused an improvement similar to that seen from surgery but with a shorter recovery time and a much lower risk of complications. On a 10-point scale, patients' pain improved by an average of four points. There was also a significant improvement in their ability to conduct their everyday lives.

The treatment is an outpatient procedure which requires no anesthetic. A radiologist uses imaging to guide a needle to the affected area. A single injection is given of 2% ozone-in oxygen. It's the ozone that is responsible for pain relief; it oxidizes the bulging material, causing it to shrink and relieving some or all of the pressure on the nerve(s). The dynamics are such that even a small shrinkage causes a large drop in pressure, relieving pain.

Study member, Kieran Murphy, an interventional radiologist and vice chair and chief of medical imaging at the University of Toronto says his group is negotiating with the FDA over the design of the first North American human trial of ozone therapy, which he expects to begin in the next six months.

The results of the study were presented at the Society of Interventional Radiologists 34th annual meeting in San Diego. The meeting was held March 7-12, 2009. These results have not yet been published in a journal.