Intraarticular Hyaluronan Reduces Postop Pain

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CHICAGO — Patients who receive intraarticular hyaluronan injections immediately after shoulder arthroscopy feel less postoperative pain and require less analgesia, compared with those who do not receive the injections, Lennard Funk, M.D., reported in a poster presentation at the 2004 World Congress on Osteoarthritis.

Hyaluronan, or hyaluronic acid, is the main hydrodynamic component of joint synovial fluid, conferring shock absorbing and lubricating qualities. It has long been used for the treatment of knee osteoarthritis.

Dr. Funk studied hyaluronan following shoulder arthroplasty after findings from a number of studies suggested that saline and other irrigation solutions impair articular cartilage metabolism.

In addition, studies have shown that joint immobilization reduces the production of endogenous hyaluronan.

Other evidence points to hyaluronan injections stimulating the endogenous production of hyaluronic acid postoperatively, and hindering the migration of inflammatory cells and mediators from blood vessels into the joint space.

"We were most impressed really with the pain relief effect [postoperatively]," Dr. Funk said at the congress, which was sponsored by the Osteoarthritis Research Society International. "The pain scores postoperatively were absolutely massive at 4 hours," and use of the hyaluronan meant that "we could get them home earlier." It's believed that hyaluronan coats the pain receptors, and also keeps the local anesthetic bupivacaine in the joint.

The 58 patients in the prospective study underwent arthroscopic subacromial decompression and were randomized into two groups.

At the end of surgery, the first group of 28 patients, mean age 50 years, was treated with 10 mL of hyaluronan (Viscoseal) and 10 mL of 0.5% bupivacaine injected into the subacromial bursa via an arthroscope.

Four hours after surgery, only 3.5% of the hyaluronan group experienced severe pain, compared with 23% of the control group.

The matched control group of 30 patients, mean age 48 years, received 20 mL of 0.5% bupivacaine only.

All procedures were performed or supervised by Dr. Funk of Hope Hospital in Manchester, England.

Four hours after surgery, only 3.5% of the hyaluronan group experienced severe pain, compared with 23% of the control group.

Of the patients in the hyaluronan group, 29% felt no pain, while none of the patients in the control group were pain free.

Of the patients in the hyaluronan group, 25% required no analgesia and 11% required opiates. All patients in the control group required analgesia and 33% required opiates.

Patients receiving hyaluronan were discharged twice as early as those not getting injections.

In a second study, Dr. Funk reported on the use of hyaluronan for inoperable arthritis of the shoulder in seven elderly patients: five with osteoarthritis, one with rheumatoid arthritis, and one with cuff arthropathy who received a course of three hyaluronan (Ostenil) injections into the glenohumeral joint at weekly intervals.

The Constant Score, which was used to assess clinical outcome, improved from a mean of 16 to 50 at 3 months post injection.

Visual analogue pain scores on a scale of 0-15 improved significantly from 12 to 5, respectively.

Patient satisfaction on a scale of 0-10 improved from 1 preinjection to 8 following the injections.

Dr. Funk said that there have been no reactions to either Viscoseal or Ostenil, which are manufactured by TRB Chemedica AG, Haar, Germany.

Dr. Funk said he has no financial interest in Viscoseal or Ostenil and did not receive funding for the studies presented at the congress, but he has received funding from the manufacturer for further research. ■

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