Joint Distraction Eases OA Knee Pain, Enables Cartilage Repair

BY NANCY WALSH
New York Bureau

Joint distraction, a surgical technique that involves the placement of an external fixation frame around a degenerated joint, may offer a means of postponing the need for total knee replacement in young patients with severe osteoarthritis.

The cartilage in end-stage osteoarthritis (OA) is severely damaged, with fissuring, altered chondrocyte distribution and death; and a significant loss of the articular matrix constituents. These changes in cartilage are accompanied by characteristic changes in pericartilaginous bone and soft tissue. All these structural changes mean severe pain and functional limitations for patients, who typically rate their pain with a score of 80% out of a maximum of 100%, according to Dr. Floris P.J.G. Lafeber, of the University Medical Center Utrecht (the Netherlands).

The rationale for joint distraction lies in the hypothesis that osteoarthritic cartilage is capable of self-repair if the unloaded and chondrocyte nutrition is maintained. Pins are drilled through the soft tissue and bone just above and below the joint, and when the frame is in place, the distance between the cartilaginous surfaces is increased by 3 mm. This transfers the load and stresses on cartilage away from the joint, eliminating further wear and tear. Easing the mechanical stress is only one therapeutic aspect of the process of joint distraction. Springs within the distraction frame cause changes to occur in fluid pressure in the joint, with increases during loading and normalization with unloading. This continuous change in fluid pressure is important for the cartilage, because chondrocytes depend on synovial fluid flow for nutrition, Dr. Lafeber explained.

The loading onto the frame also results in pericartilaginous osteopenia, which in turn permits the sclerotic, osteoarthritic bone to become more flexible and the mineral content to normalize once the frame is removed. Furthermore, the pericartilaginous matrix is capable of self-repair, and the repair is accomplished by the overgrowth of new bone.

The study participants were a consecutive series of 441 Helicobacter pylori-negative patients suffering from multiple osteoarthritis joints. Treatment was decided on a case-by-case basis, according to Dr. Chan, professor of medicine and chief of gastroenterology at the Chinese University of Hong Kong.

He observed that, for those physicians who dismiss clinical trials as not reflecting real-world practice, it’s worth noting that a marked reduction in the risk of recurrent upper GI bleeding with the combination of celecoxib and a proton pump inhibitor (PPI) also was documented in a recent case-control study by Dr. Laura L. Targownik and her coworkers at the University of Manitoba, Winnipeg.

The deviation of 1,382 patients hospitalized for NSAID-associated upper GI complications to nearly 34,000 controls. They concluded that the combination of celecoxib and a PPI provided gastroprotection superior to a nonselective NSAID plus a PPI, a cyclooxygenase-2 inhibitor alone, or a nonselective NSAID plus misoprostol (Gastroenterology 2008;134:977-94).

Results of the Canadian study along with Dr. Chan’s published clinical trial (Lancet 2007;369:1621-6) suggest a need to revisit current American College of Rheumatology guidelines for the management of osteoarthritis. The guidelines recommend use of a COX-2 inhibitor or nonselective NSAID plus a PPI in patients at increased risk of ulcers, but these recent studies clearly show that is not adequate protection for the substantial group at very high risk, according to Dr. Chan.

The satellite symposium was supported by Pfizer Inc. Dr. Chan’s study was solely supported by the Research Grants Council of Hong Kong, while Dr. Targownik’s was supported by the Canadian Institutes of Health Research and the Manitoba Medical Services Foundation. Dr. Chan has received consulting fees from Pfizer.

Celecoxib Plus PPI Protects Against NSAID Ulcers

BY BRUCE JANCIN
Denver Bureau

Paris — Celecoxib plus a proton pump inhibitor is the superior gastroprotective strategy in patients who require chronic NSAID therapy for analgesia but have had a prior NSAID-associated bleeding ulcer, according to a randomized clinical trial.

The 13-month cumulative incidence of recurrent ulcer bleeding in this trial was 0% in subjects randomized to the combination therapy, compared with 8% in controls on celecoxib (Celebrex) plus placebo, Dr. Francis K. Chan said at a satellite symposium held in conjunction with the annual European Congress of Rheumatology.

The study participants were a consecutive series of 441 Helicobacter pylori-negative Hong Kong arthritis patients taking nonselective NSAIDS until they were hospitalized for upper GI ulcer bleeding. Randomization to celecoxib 200 mg plus esomeprazole (Nexium) 20 mg, both twice daily, or to celecoxib plus placebo took place after their ulcers healed, explained Dr. Chan, professor of medicine and chief of gastroenterology and hepatology at the Chinese University of Hong Kong.

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The Iowa Ankle Experience Compares

BY NANCY WALSH
New York Bureau

Ankle distraction also has been performed and is being evaluated in a randomized study led by Dr. Amundato Amendola of the University of Iowa, Iowa City.

“We are interested in posttraumatic osteoarthritis of joints, and the ankle in particular,” said Dr. Amendola, professor in the department of orthopedics and rehabilitation.

The study, which was funded by the National Institutes of Health, prospectively enrolled about 40 patients with posttraumatic ankle OA. They used the same ankle distraction technique as did Dr. Lafeber’s group, but patients were randomized to distraction alone or to distraction plus continuous passive joint motion.

“There’s lots of evidence indicating that motion is beneficial to a healing joint,” he said. During the course of the study, patients were evaluated clinically and radiographically, and with a special three-dimensional CT scanning technique to look at cartilage regeneration.

All but three patients have undergone 2- and 3-year evaluations, and the results thus far have been comparable to the results they have had in Utrecht in terms of relief of pain, according to Dr. Amendola. Additional improvements have been seen over time, and patients in the motion group did significantly better at every time point than did the nonmotion group.

“I think this is quite an intriguing technique, and I’m sure you will be hearing more about it in the next few years,” Dr. Amendola said.