



Physical Therapy Update

The clinical staff at Frederick Sport and Spine Clinic regularly reviews articles, discusses the content and implements the information into our patient treatments. As a service to the local medical community, we are offering a summary of these articles to Physicians and Medical Practitioners. It is our intention to provide only the most pertinent info in these ½ page summaries. Further info is available at the clinic. Please take a moment to peruse the information below and contact us if you have any questions about the subject matter. Enjoy!

Treatment of Articular Cartilage Defects of the Knee with Autologous Chondrocyte Implantation

By Scott D. Gillogly, MD, Michael Voight, DPT, ATC, Tab Blackburn, PT, ATC
JOSPT, October 1998; pages 241-251

In treating patients with persistent knee pain, articular cartilage defects can be challenging and difficult to return the client to their prior level of function. Often the defects are followed by degenerative changes further reducing their overall function.

A variety of surgical techniques have been utilized to aid in the healing of articular cartilage damage. The most basic is the arthroscopic technique of lavage and debridement. However, younger patients with partial thickness articular cartilage lesions greater than 1 cm required longer term follow up. In order to improve the debridement method, techniques were developed for marrow stimulation. Methods include arthroscopic abrasion, drilling, and microfracture, which populate the defect with pluripotential stem cells. Numerous follow up reports find the results with these methods are short-lived postoperatively.

In 1987, human clinical trials were begun to treat full thickness chondral defects in the knee with a periosteal graft and autologous chondrocytes. From the trials, it was recommended to also treat focal full thickness chondral defects of the femoral condyles, trochela, and osteochondritis dessicans. Rather than using this procedure to treat osteoarthritis it was designed to prevent symptomatic cartilage defects from progressing to advanced degenerative arthritis.

After this surgical procedure, rehabilitation is essential to provide the stimulus for cartilage healing without overstressing the repair tissue. This is accomplished with joint motion, progressive weight bearing, modalities, and controlled exercises. This will enable the client a faster return to their optimal level of function.

Follow up studies of patients who received autologous chondrocyte implantation and post operative physical therapy demonstrated 90% improvement at 12 months and by 18 months, there was near complete resolution of the preoperative symptoms. These excellent results have provided improvements in patient's overall satisfaction and prevention of long term difficulties such as persistent joint pain, edema, and buckling in the knee.

Based upon the follow up results of the studies, a well-controlled physical therapy program is an important part in the recovery of autologous chondrocyte implantation. This will enable the patient to optimally achieve the goals of the procedure to alleviate pain and return to a higher level of function.

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