

INFILTRATIVE THERAPY

CHondroGrid reduces pain in meniscal injuries and in the syndrome post-meniscectomy: case series

The menisci are fibrocartilaginous structures with a characteristic "C" shape, located at the level of the medial and lateral tibiofemoral compartment¹. Their composition is predominantly type I collagen (60-70% of dry weight). Their main function is to distribute load-bearing between the femur and tibia and to contribute to knee stabilization. Following meniscus injury, which can be of traumatic (especially in athletes) or degenerative origin, there can be a progressive decrease in joint function and the appearance of osteoarthritis. Surgical treatment of meniscal injuries involves, when possible, repair of the lesion by suturing the lesion flaps or partial or total meniscectomy. In the case of meniscectomy, there is increased mechanical stress on the tibiofemoral compartment resulting in the onset of osteoarthritis and a painful syndrome called "post-meniscectomy syndrome"². Although there is no definitive treatment for this condition, the non-surgical approach consisting of the use of infiltrative devices is one of the possible alternatives. Recently, a new infiltrative device based on low-molecular-weight hydrolyzed collagen (CHondroGrid®, Bioteck Spa, Arcugnano - Vicenza) has been successfully introduced for the treatment of pain symptoms and functional recovery in osteoarthritis of the knee³⁻⁵, further in the treatment of rotator cuff tendinopathy⁶. Hydrolyzed collagen consists of collagen peptides that, when injected, quickly diffuse within the site, going directly to reinforce the damaged structures, predominantly consisting of collagen fibers.

A case series

In this case series, the efficacy and safety of CHondroGrid® application is presented in 11 patients, including 5 with meniscopathy (mean age: 49 ± 16 years) and 6 treated following meniscectomy (mean age: 56 ± 8.4 years). In 6 of the 11 cases examined, patients had been previously treated with high molecular weight hyaluronic acid, without clinically significant results. The treatment plan included, in both types of patients, 3 intra-articular injections of CHondroGrid®, as per the IFU, at 0, 15 and 45 days. CHondroGrid® consists of a bottle containing 4 mg freeze-dried, low-molecular-weight collagen peptides of bovine origin. Collagen peptides should be dissolved in 2 ml of sterile water for injections before infiltration. The infiltrations were performed with medial access using anatomical landmarks, after echoscopic localization. Patients with meniscopathy had a mean initial



Marco Colombaro
S.C. Emergency - Urgency ASL Cuneo 1.
L.P. in Pain Therapy and Palliative Care.

pain, as measured by NRS scale, of 3.2 ± 2.1 . At 15 days after the first injection, pain decreased to 2.2 ± 2.5 (equal to a 30% reduction). At 1 month after the second injection, pain decreased further to 1.4 ± 2.3 (equal to a 56% reduction). At 6 months after the third injection, pain was almost gone, 0.25 ± 0.4 (equal to a >90% reduction). Meniscectomy patients had a mean initial pain, as measured by NRS scale, of 1.5 ± 1 . At 15 days after the first injection, the pain decreased to 0.33 ± 0.5 (equal to a 78% reduction). At 1 month after the second injection, pain had almost disappeared to 0.1 ± 0.3 (equal to a 92% reduction). At 6 months after the third injection, pain had disappeared in all patients. In both types of patients, no side effects were observed.

Conclusions

In this case series, the efficacy and safety of CHondroGrid® application is presented in 11 patients, including 5 with meniscopathy (mean age: 49 ± 16 years) and 6 treated following meniscectomy (mean age: 56 ± 8.4 years). In 6 of the 11 cases examined, patients had been previously treated with high molecular weight hyaluronic acid, without clinically significant results. The treatment plan included, in both types of patients, 3 intra-articular injections of CHondroGrid®, as per the IFU, at 0, 15 and 45 days. CHondroGrid® consists of a bottle containing 4 mg freeze-dried, low-molecular-weight collagen peptides of bovine origin. Collagen peptides should be dissolved in 2 ml of sterile water for injections before infiltration. The infiltrations were performed with medial access using anatomical landmarks, after echoscopic localization. Patients with meniscopathy had a mean initial

pain, as measured by NRS scale, of 3.2 ± 2.1 . At 15 days after the first injection, pain decreased to 2.2 ± 2.5 (equal to a 30% reduction). At 1 month after the second injection, pain decreased further to 1.4 ± 2.3 (equal to a 56% reduction). At 6 months after the third injection, pain was almost gone, 0.25 ± 0.4 (equal to a >90% reduction). Meniscectomy patients had a mean initial pain, as measured by NRS scale, of 1.5 ± 1 . At 15 days after the first injection, the pain decreased to 0.33 ± 0.5 (equal to a 78% reduction). At 1 month after the second injection, pain had almost disappeared to 0.1 ± 0.3 (equal to a 92% reduction). At 6 months after the third injection, pain had disappeared in all patients. In both types of patients, no side effects were observed.

1. Drobnic M, et al. Treatment options for the symptomatic post-meniscectomy knee. *Knee Surg Sports Traumatol Arthrosc*, 27, (6), 1817-1824 (2019).
2. Rao AJ, et al. The Meniscus-Deficient Knee: Biomechanics, Evaluation, and Treatment Options. *Orthop J Sports Med*, 3, (10), 2325967115611386 (2015).
3. Volpi P, et al. Effectiveness of a novel hydrolyzed collagen formulation in treating patients with symptomatic knee osteoarthritis: a multicenter retrospective clinical study. *Int Orthop*, (2020).
4. De Luca P, et al. Intra-Articular Injection of Hydrolyzed Collagen to Treat Symptoms of Knee Osteoarthritis. A Functional In Vitro Investigation and a Pilot Retrospective Clinical Study. *J Clin Med*, 8, (7), (2019).
5. Heredia AA. Comparative evaluation of hydrolyzed collagen, PRP and hyaluronic acid in knee osteoarthritis. Hydrolyzed collagen is more effective in reducing pain and promoting functional recovery than PRP and HA In: *Bioteck Orthopedics Sheet*. vol. Bioteck Academy, 2022.
6. Buda M, et al. Subacromial injection of hydrolyzed collagen in the symptomatic treatment of rotator cuff tendinopathy. In. *Poster Presented at ISMUL Congress, Rome, Italy, April 8-9, 2022.*