

Efficacy of Viscosupplementation in a Patient with Bilateral Partial Meniscectomies: A Case Study

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Keywords: osteoarthritis, viscosupplementation

Abstract

Knee osteoarthritis (OA) is a common degenerative disease that can significantly impair daily life and mobility. This case report describes a 60-year-old female with bilateral knee OA and a history of partial medial meniscectomies, who experienced severe pain and functional limitations despite conservative treatments. After receiving two injections of viscosupplementation with hyaluronic acid, the patient experienced substantial pain reduction and functional improvement. Her Visual Analog Scale (VAS) pain score decreased from 8/10 to 3/10, and she was able to ambulate without assistance. This case suggests that viscosupplementation can be effective in improving quality of life for individuals with knee OA who do not respond to conservative treatments.

Background

Knee OA is a leading cause of joint pain and functional impairment, affecting millions worldwide.[1] Although it is most prevalent in individuals aged 65 and older, younger individuals with previous knee injuries or surgeries can also be affected. OA is characterized by the progressive degeneration of cartilage, resulting in pain, stiffness, and decreased mobility. Standard management options include physical therapy, weight loss, NSAIDs, and acetaminophen, though these typically provide only temporary relief.[2,3]

Viscosupplementation, which involves intra-articular injections of hyaluronic acid, has emerged as an adjunctive therapy. Hyaluronic acid, a key component of synovial fluid, is believed to improve joint lubrication and shock absorption, thereby reducing pain and improving function, particularly in patients who are unresponsive to conventional treatments.[4] Recent research on viscosupplementation in patients with prior meniscectomies has yielded mixed results. Some studies show pain relief and improved range of motion, while others suggest no significant difference from placebo.[5-7]

Case Presentation

A 60-year-old female with a history of bilateral knee OA presented with severe pain (VAS 8/10) and functional limitations, such as difficulty walking more than one block and inability to climb stairs without pain. Her medical history included bilateral partial medial meniscectomies and a right patellar release performed 20 years earlier. An MRI from one year prior to the date of presentation revealed a partial tear of the right anterior cruciate ligament (ACL). Surgical intervention was considered inappropriate since the ACL was not completely torn and the surgeons were not certain it was the cause of her pain. Conservative treatments, including physical therapy and NSAIDs, had failed to alleviate symptoms. The patient had previously

received corticosteroid injections, which provided minimal, short-term relief. Total knee arthroplasty was considered but was deemed unnecessary given her moderate OA severity.[8] Viscosupplementation with Supartz (sodium hyaluronate; Seikagaku Corporation, Tokyo, Japan) was recommended as an alternative to surgery. Supartz was chosen for its higher molecular weight, which has been associated with improved joint biomechanics and more prolonged symptom relief.[9,10] Upon presentation, the patient received two intra-articular injections of 10 mg/mL Supartz in both knees. Four weeks after treatment, her pain score decreased to 3/10, and she reported significant improvement in mobility, including walking several blocks and climbing stairs with minimal discomfort. Physical examination revealed reduced joint tenderness and improved range of motion. The patient was advised to return for additional injections as needed.

Discussion

This case underscores the potential role of viscosupplementation in alleviating pain and improving function in patients with knee OA, particularly those with a history of meniscectomies. The patient in this case achieved significant pain relief and functional improvement, consistent with the results from systematic reviews and randomized controlled trials. Pereira et al.[5] demonstrated that hyaluronic acid injections reduce VAS pain scores by an average of 3-4 points, aligning with this patient's improvement. Notably, the patient's history of bilateral meniscectomies and partial ACL tear may have contributed to accelerated OA progression. While some studies support the use of viscosupplementation in post-meniscectomy patients,[6,7] others report no significant difference from placebo,[11] highlighting the need for tailored treatment approaches. Additionally, viscosupplementation was preferred over corticosteroids in this case due to the patient's chronic symptoms and the potential for longer-lasting benefits. Research suggests that while corticosteroids offer more immediate relief, hyaluronic acid may provide more sustained improvement in both pain and function.[7] However, viscosupplementation is not without its drawbacks. Large-scale trials show only modest benefits compared to placebo, and its cost-effectiveness remains controversial. Additionally, risks such as transient pain flare-ups and rare joint infections exist. The optimal frequency and duration of injections are still under debate, with some guidelines suggesting limited efficacy with repeated cycles. Future research should investigate ideal treatment schedules and identify which patient subgroups are most likely to benefit.

Conclusion

This case illustrates the potential of viscosupplementation in providing significant symptom relief and functional improvement for patients with bilateral knee OA, especially those with a history of meniscectomy. It highlights the importance of individualized treatment plans and the role of viscosupplementation in managing complex OA cases. Further studies are needed to refine patient selection criteria and assess the long-term effectiveness of this therapy, particularly in patients with prior meniscectomies.

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