Case Report

Management of Baker's Cyst with Platelet-Rich Plasma (PRP): A Case Report

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Abstract

Baker's cyst, also known as a popliteal cyst, is a fluid-filled swelling behind the knee, often associated with underlying joint pathology. Traditional management includes conservative treatments like aspiration and corticosteroid injections, with surgical options reserved for refractory cases. This case report presents the management of a Baker's cyst using platelet-rich plasma (PRP), highlighting its potential as a noble, less invasive therapeutic approach.

Keywords: Baker's cyst, platelet-rich plasma, regenerative medicine, knee pain, minimally invasive therapy.

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Background

Baker's cysts are commonly linked to knee conditions such as osteoarthritis, meniscal tears, or rheumatoid arthritis. The cyst can cause pain, swelling, and impaired mobility, significantly affecting the patient's quality of life. PRP, a concentration of autologous platelets in a small volume of plasma, has shown promise in regenerative medicine due to its high content of growth factors that facilitate tissue repair and reduce inflammation. This report explores the use of PRP for treating a Baker's cyst in a middle-aged patient with chronic knee discomfort.

Case Presentation

A 52 years old male presented at Bangabandhu Sheikh Mujib Medical University on 4 February 2019 to 19 march with a three-month history of swelling and pain in the posterior aspect of his left knee, which worsened with activity. The patient had a history of mild knee osteoarthritis but no previous trauma. Physical examination revealed a palpable cystic mass in the popliteal fossa, measuring approximately 5 cm in diameter. Diagnostic ultrasonogram confirmed the diagnosis of a Baker's cyst without significant intra-articular pathology.

Conservative measures, including non-steroidal anti-inflammatory drugs (NSAIDs) and physiotherapy, provided limited symptom relief. Cyst aspiration was performed, yielding 30 mL of serous fluid; however, the symptoms recurred within two weeks. The patient sought alternative treatments, and PRP therapy was considered.

Intervention

After obtaining informed consent, 30 mL of the patient's blood was collected and centrifuged to prepare PRP. Under ultrasound guidance, PRP was injected into the cyst, ensuring precise placement of the biologic agent. The procedure was performed in an outpatient setting with no complications.

Outcome and Follow-up

The patient reported a significant reduction in pain and swelling within two weeks post-injection. At the six-week follow-up, the cyst size had reduced to 1.5 cm on ultrasound, and the patient experienced improved knee function. A three-month follow-up MRI showed near-complete resolution of the cyst, with no recurrence of symptoms. The patient remained symptom-free at the six-month review.

Discussion

PRP offers a promising, minimally invasive treatment for Baker's cysts by addressing the inflammatory component and promoting tissue healing. The growth factors present in PRP, such as platelet-derived growth factor (PDGF) and

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transforming growth factor-beta (TGF-β), are thought to enhance synovial healing and reduce fluid accumulation. This case supports the potential role of PRP as a therapeutic option for patients with recurrent Baker's cysts, especially when conventional therapies fail.

Conclusion

The use of PRP in managing Baker's cyst may offer a noble and effective treatment strategy, especially for patients with refractory cases. Further studies are needed to establish standardized protocols and evaluate long-term outcomes.

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