

Case Report

Outcome of talonavicular arthritis treated with platelet rich plasma injection: a case report

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ABSTRACT

Osteoarthritis of the talonavicular (TN) joint, which can result from inflammatory, degenerative, or post-traumatic arthritis, is frequently reported. TN arthritis causes pain, swelling, and stiffness in the joint. Early diagnosis is crucial, typically using X-rays, computed tomography (CT) scans, or magnetic resonance imaging (MRIs) to detect joint damage. Treatment often involves pain relievers and non-steroidal anti-inflammatory drugs (NSAIDs). If these methods don't provide relief, isolated fusion (arthrodesis) of the TN joint is often recommended as a treatment option. There are no published reports describing the use of platelet rich plasma (PRP) for treating TN arthritis. A 45-year-old female presented with persistent right foot pain for one year following a twisting injury. Radiographs showed joint space narrowing, osteopenia, and peripheral osteophytes at the TN joint. PRP was prepared using a two-step centrifugation process and injected under C-arm guidance into the TN joint. The patient was followed for two years and assessed using the American Orthopaedic Foot and Ankle Society (AOFAS) midfoot score, which improved from 68 to 90. No adverse events were reported. This case highlights the potential of PRP as a minimally invasive treatment option in early-stage TN arthritis. It adds to the growing evidence supporting intra-articular PRP injections for small joint osteoarthritis, as also supported by recent studies on ankle and talar cartilage degeneration. PRP may serve as a safe and effective alternative to surgery in selected patients with TN arthritis. Further research is warranted to establish standardized treatment protocols.

Keywords: Talonavicular arthritis, PRP injection, Midfoot osteoarthritis, AOFAS midfoot score, Arthrodesis

INTRODUCTION

The talonavicular (TN) joint, a key component of the transverse tarsal joint, plays a critical role in foot inversion and eversion.¹ Osteoarthritis of this joint—though less common than other midfoot joints—can lead to debilitating pain, stiffness, and altered gait mechanics. Etiologies include post-traumatic changes, overuse, and rarely, structural anomalies such as navicular pseudarthrosis, which can further complicate joint integrity and function.²

Standard treatment often begins with conservative therapy; however, arthrodesis has been traditionally employed for refractory cases.³ Despite its success, it may compromise adjacent joint mobility and long-term function.⁴

Platelet-rich plasma (PRP), a biologic therapy rich in growth factors, has shown promise in ankle osteoarthritis by reducing inflammation and promoting tissue repair.⁵ Yet, its role in TN arthritis remains largely unexplored.

This case report describes the treatment of post-traumatic TN arthritis using an intra-articular PRP injection, emphasizing its potential as a minimally invasive alternative to surgery.

CASE REPORT

A 45-year-old female presented with persistent right foot pain for one year following a twisting injury. Examination revealed mild midfoot swelling and tenderness over the TN region, with normal skin color, no local warmth, and

preserved range of motion. Routine blood investigations, including inflammatory markers, were within normal limits, effectively ruling out systemic or infectious causes. Radiographs showed TN joint space narrowing, osteopenia, peripheral osteophytes over the talus and navicular, and a calcaneal spur (Figure 1), consistent with post-traumatic TN osteoarthritis.

After informed consent, PRP was prepared using a double-spin technique from 40 ml of autologous blood and 5 ml of PRP was harvested. Under C-arm guidance and aseptic precautions, PRP was injected intra-articularly into the TN joint via a dorso-medial approach using a 25-gauge needle at 45° inclinations. The patient was advised to avoid NSAIDs and corticosteroids for three days. Follow-up at 2 weeks, 6 weeks, 3 months, 6 months, 1 year, and 2 years showed progressive improvement. The AOFAS midfoot score improved from 68 pre-injections to 90 at final follow-up, with no reported complications.⁶



Figure 1: Anteroposterior and lateral X-ray view of right foot.

DISCUSSION

TN arthritis is a relatively uncommon but functionally disabling midfoot condition due to the joint's pivotal role in hind foot inversion and eversion. Degeneration in this region often follows trauma and may progress silently until advanced stages.⁷ Traditional treatments range from conservative management to arthrodesis in persistent cases. While isolated TN arthrodesis has been shown to provide pain relief and restore function, it also risks adjacent joint overload and long-term biomechanical compromise.^{3,4,7}

The application of biologic therapies such as PRP has gained momentum in orthopaedics, offering minimally invasive alternatives in early-to-moderate osteoarthritis. PRP's efficacy lies in its concentration of growth factors—PDGF, TGF- β , VEGF—that promote cartilage matrix synthesis, modulate inflammation, and support subchondral bone health.⁸ While data for PRP in large joints such as the knee is abundant, evidence for its use in ankle and midfoot arthritis is evolving.

A recent multicenter randomized controlled trial (RCT) by Paget et al demonstrated moderate improvements in pain

and function following PRP injections in patients with ankle osteoarthritis, supporting its use in small joint OA. Similarly, a meta-analysis by Peng et al emphasized the regenerative potential of PRP in talar cartilage repair, showing improvements in both radiographic scores and functional outcomes.⁹ These findings align with the current case, where a single PRP injection resulted in a clinically significant improvement in AOFAS midfoot score from 68 to 90 over two years.

Importantly, our case involved radiographic evidence of TN joint space narrowing with peripheral osteophytes, yet the patient remained active with preserved range of motion. The decision to avoid surgery and opt for PRP was based on the early-stage arthritis and absence of joint fusion or severe deformity. The injection was guided using anatomical landmarks and fluoroscopy, ensuring accurate intra-articular delivery, a factor critical to clinical outcomes.⁵

Furthermore, avoidance of NSAIDs post-injection, as advised, was important to preserve platelet integrity and optimize therapeutic effects. The long-term follow-up of 2 years strengthens the argument for PRP as a viable treatment option in selected cases of TN arthritis.

Further randomized controlled trials with larger sample sizes and longer follow-up durations are warranted to establish standardized protocols and to better understand the long-term efficacy of PRP injections in TN arthritis management.

CONCLUSION

This case highlights the potential of PRP injection as a safe and effective treatment for early-stage post-traumatic TN arthritis, especially in patients seeking alternatives to surgery. The functional improvement observed over two years adds to the growing evidence supporting PRP in small joint osteoarthritis. Larger controlled trials focusing on foot and midfoot arthritis are warranted to establish standardized protocols, optimal dosing, and long-term efficacy.

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