



CASE REPORT

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An Evidence-Based Case Review of the Role of Injection Therapy for Plantar Fasciitis

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ABSTRACT

Background: Plantar fasciitis is a common cause of heel pain. Corticosteroid injection (CSI) is used when conservative measures fail, but safety, technique, and outcome vary.

Case Presentation: A 53-year-old female cleaner presented with six months of severe bilateral heel pain (left > right), worst on first steps and weight-bearing (VAS 7–9/10). Examination showed focal tenderness over plantar fascia, positive Windlass test, normal neurological exam and ankle range, and preserved muscle power. No imaging was available. Differential diagnoses considered included calcaneal stress fracture, fat-pad atrophy, plantar fascia rupture and others. After failed conservative treatment and informed consent, a blind corticosteroid + lidocaine injection (Depomedrone 40 mg with 1% lidocaine; 0.5 ml administered to the most tender point of the left heel) was delivered in primary care. The patient was observed for 30 minutes and followed up at three weeks, reporting complete pain relief.

Conclusions: In this case, primary-care CSI delivered with appropriate consent, technique and after conservative therapy produced rapid symptomatic relief, facilitating return to work. Limitations include absence of imaging and the short follow-up period. Ongoing CPD and adherence to safety protocols are essential.

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Introduction

Plantar fasciitis is one of the most common causes of heel pain^[1], typically presenting with focal tenderness over the medial aspect of the calcaneal tuberosity and plantar fascia. It is often associated with prolonged standing, walking, or repetitive microtrauma^[2]. Conservative management, including exercise therapy, orthoses, analgesics, and activity modification, is generally the first-line treatment^[3,4]. When

symptoms persist, corticosteroid injection therapy is a widely used second-line option, with evidence suggesting short-term and, in some cases, long-term benefit^[5]. However, appropriate knowledge of musculoskeletal anatomy and assessment skills is crucial to ensure accurate diagnosis, safe practice, and avoidance of complications.

This case describes a 53-year-old female patient with recalcitrant plantar fasciitis, managed with corticosteroid injection in a



primary care setting during the COVID-19 pandemic. The report also reflects on clinical reasoning, safety precautions, and professional learning related to injection therapy.

Case Presentation

The patient discussed here was a 53 years old female who worked as a cleaner. She had severe pain in both heels, worst on the left heel over six months. On the VAS scale, the pain was 9/10 at worst and at best 7/10. Aggravating factors involved standing on them, walking, and stepping on the floor in the morning. The pain eased off during the daytime if not bearing any weight on it.

Examination: Upon palpation, the posterior and medial aspects of the heel and plantar surface at the mid-foot had tenderness over the plantar fascia. No signs of swelling or redness were found through observation. Reflex was usual, with neither a sensory deficit nor pain radiating from the back. Ankle movement was 100% without any pain or discomfort. Windlass test positive^[6], left foot first toe extension had end range of pain. Foot muscle power was grade 5 on the oxford scale.

There was no history of significant comorbidities, allergies, or prior medical conditions. Plantar fasciitis is generally diagnosed with palpable discomfort at the heel over the medial or posterior fascia^[7]. Based on the patient's history and clinical findings, several differential diagnoses were considered, including calcaneal stress fracture, fat pad atrophy, plantar fascia rupture, plantar fibromatosis, sinus tarsi syndrome, Haglund deformity, vascular insufficiency, and neurological causes^[8]. The lack of an MRI or US scan was a limitation of the test procedure as these may help confirm the diagnosis of plantar fasciitis. Therefore, to determine a diagnosis of plantar fasciitis, clinical

reasoning, advanced anatomical knowledge, a review of medical history, and palpation procedures were followed.

Discussion

Concurrent Rehabilitation and Role of Injection Therapy for Plantar Fasciitis

Plantar fasciitis is one of the leading causes of foot pain^[9]. Recent research suggests that a combination of steroid injection with stretching and strengthening exercises provides the most benefit for both short- and long-term outcomes. Consequently, steroid injection is often recommended as a first-line treatment for plantar fasciitis^[10].

A comparative study of shockwave therapy and corticosteroid injection (CSI) found that CSI is more effective when administered at the most tender area, resulting in quicker functional improvement^[11]. Both treatments, however, may provide benefits lasting up to one year^[11]. Evidence also indicates that shockwave therapy does not adequately address issues related to patient BMI through non-invasive means^[12,13].

Local steroid injection has been shown to be more effective than deep friction massage or conservative management^[14]. Evidence for the effectiveness of orthotics in long-term plantar fascia pain remains insufficient^[15]. According to NICE guidelines, conservative measures including ice application, activity modification, insoles, weight reduction, analgesics, and physical exercises should be attempted before considering injection therapy^[16]. If conservative management fails, steroid injection therapy can help relieve pain and improve function^[17].

Different injection options exist for plantar fasciitis, though steroid injections are the most commonly advised when other treatments fail^[18]. Injections have been shown to benefit heel pain, though the extent of relief is uncertain. Tatli et al.

reported that CSI provide only temporary relief^[9]. Current recommendations suggest considering heel injections as a second-line therapy when NSAIDs and conservative treatments are ineffective^[19].

Overall, corticosteroid injection is regarded as reliable and practical for treating foot and ankle conditions, including plantar fasciitis^[20]. A study comparing ultrasound-guided ozone injection and corticosteroid injection found similar efficacy, with corticosteroids providing short-term relief, whereas ozone injection offered a longer-lasting effect^[21]. Importantly, patients did not report side effects from injections for chronic plantar fasciitis^[22].

Therefore, upon the ineffectiveness of conservative treatment patient was offered a steroid injection. She wished symptom relief, even short-term, to restore function and return to work. During the pandemic, hospital appointments were difficult to obtain and waiting lists were long; therefore, injection in the primary-care setting was considered more appropriate.

Contraindications and Safety Issues With Injection Therapy

A mixture of local anesthetic and steroid is typically used for corticosteroid injections^[23]. Corticosteroids are avoided in patients with significant renal or hepatic disease and in pregnancy. Contraindications to CSI include open skin at the injection site, known hypersensitivity to the agent, fracture, prosthetic joint, local or systemic infection, unstable coagulopathy, uncontrolled diabetes, osteoporosis, and injections directly into tendon substance^[24,25].

Following safety protocols, the patient was informed of contraindications and of common and serious adverse events; written and verbal consent was obtained prior to the procedure. Major immediate adverse events include anaphylaxis, systemic toxicity, or syncope; minor reactions include local swelling and

erythema^[26]. An EpiPen was available in case of an emergency.

Commonly used local steroids include methylprednisolone acetate 40 mg/ml, triamcinolone hexacetonide 20 mg/ml, and triamcinolone acetonide 40 mg/ml^[27]. Lidocaine HCl 1% is the usual local anesthetic. Choice of agent depends on practitioner preference and availability^[24]. Recommended preparations and doses include Adcortyl 2.5–15 mg depending on target tissue size^[25], Kenalog 5–10 mg (0.125–0.25 ml) for smaller joints^[28], and Depo-Medrone 40–80 mg, commonly used for soft-tissue injections^[29]. A suggested dosage range for large joints (knee, ankle, shoulder) is 0.5–2 ml (20–80 mg steroid)^[13]. Dose selection also considers patient BMI and target size. For the heel, volumes of 0.25–5 ml have been reported^[13,29]. Depo-Medrone with lidocaine (40 mg/ml plus lidocaine 1%) was selected for this case; 0.5 ml of the suspension was injected into the left heel using a 1-ml syringe.

Technique: a posterior approach was used. The posterior border of the medial malleolus was palpated and a line drawn to the area of skin change; the most tender point at the heel was identified. The needle was inserted from the thinner skin posterior–lateral to the skin-change line, aiming as close as possible to the bony insertion. The needle was directed perpendicular to the medial side at the point of maximal tenderness, then angled approximately 45° toward the calcaneus^[24]. A green 21-gauge needle was used. The patient was seated comfortably with a pillow under her knees; the injection was delivered from the medial aspect of the left heel.

Adverse events occur in up to ~10% of cases and include tendon rupture, fat-pad atrophy, nerve injury, and, rarely, calcaneal osteomyelitis; tendon rupture can also occur in the absence of steroid injection^[9,26]. Post-procedure advice included reduced

weight bearing for 48 hours and avoidance of hopping, running, or prolonged walking for two weeks. The patient remained in the reception area for 30 minutes post-procedure, observed by her daughter and the receptionist for immediate reactions. She was instructed to contact her GP or call 111 for redness or swelling. Skin discoloration can be permanent^[30]. A follow-up appointment was arranged at three weeks; at follow-up the patient reported complete resolution of pain.

This was the author's second plantar fascia injection and, although initially confident in the chosen entry point, the supervising orthopaedic clinician recommended a more posterior approach targeting the area of maximal tenderness; this adjustment resulted in improved clinical effect. The procedure was performed in primary care under aseptic conditions, with straightforward needle access, no bleeding, and only minimal patient discomfort. At follow-up there was no clinically significant scarring and the patient was able to resume work without delay. Extracorporeal shock wave therapy was considered as an alternative, but timely referral was not possible because of COVID-19-related appointment limitations; therefore, immediate injection in primary care offered the most practical option for rapid functional recovery.

Since plantar fascia injections are typically performed without imaging guidance, this case highlights important implications for professional practice and patient safety. The experience underscored the value of supervised decision-making at the point of care and the benefit of being able to modify technique in response to clinical findings. It also demonstrates the need for ongoing continuous professional development (CPD) to maintain and extend competence in injection therapy—particularly training that updates hands-on technique, anatomical localisation skills, and familiarity with image-guided approaches where appropriate. The Chartered Society of

Physiotherapy (CSP) recommends regular short courses and CPD activity in injection therapy to support competency and safeguard patients^[31].

Conclusion

This case demonstrates that, for carefully selected patients, corticosteroid injection for recalcitrant plantar fasciitis can be performed safely and effectively in a primary-care setting and can provide rapid symptomatic relief and return to function when access to secondary care is limited. Key contributors to the favourable outcome were thorough clinical assessment, adherence to safety protocols (informed consent, aseptic technique, emergency preparedness), supervised decision-making, and the ability to modify needle entry to target the area of maximal tenderness. The case also highlights important limitations: the diagnosis was clinical without imaging confirmation, follow-up was short, and a single case cannot establish effectiveness or long-term safety.

Practical implications are threefold: (1) primary care clinicians may consider injection therapy when conservative measures have failed and referral delays are unacceptable, provided they have appropriate training, supervision, and governance; (2) ongoing CPD—focused on anatomy, hands-on technique, and image-guided methods where available—is essential to optimise patient safety and outcomes; and (3) services should ensure standardised consent, post-procedure counselling, and structured follow-up to detect adverse events and assess durability of benefit.

Future work should include prospective audits or cohort studies comparing primary-care versus secondary-care delivery, and comparing blind versus image-guided injections, to define best practice and

longer-term outcomes. Until such data are available, clinicians should balance the potential for rapid functional recovery against known risks and the limited generalisability of single-case experience.

Ethical Considerations

Written informed consent for publication was obtained from the patient. Local research governance advised that formal ethical approval was not required for a single anonymised case report.

Disclosure Statement

No potential conflict of interest was reported by the author.

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