

Injection Site Infection Following Intralesional Corticosteroid Use in Refractory Plantar Fasciitis

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Abstract: Chronic heel pain following plantar fasciitis is a nagging problem that is often managed conservatively with satisfactory results. Refractory cases may require local corticosteroid injections as part of treatment. The standard technique in a right candidate ensures good outcome with minimal complications. Injection site infection is rare but dreaded complication that may occur and require proper management for recovery.

Keywords: Plantar fasciitis, Treatment, Infection, Steroid injection

INTRODUCTION

Infection following the injection is an inherent risk of procedures requiring injection of steroid for various musculoskeletal disorders. Osteomyelitis, necrotizing fasciitis, cellulitis are some of the reported infective complications related to steroid injection use [1]. A wrong site injection, presence of systemic diseases like diabetes or unhygienic conditions following injection may increase the risk of subsequent infection. Our case highlights one such incidence of injection site infection following erroneously placed corticosteroid injection.

CASE REPORT

A 40 year old female patient presented to us with complaints of chronic heel pain for last three years. The pain was non-traumatic with no associated clinical history related to infection or other 'red flags'. The pain was mild initially with transient nature but increasing in severity for last six months. The pain was located around heel region with medial aspect of heel being tender. The pain increased on early morning getting up on both feet and after prolonged standing or walking. There was neither any diurnal variation nor any referral or radiation. The pain was moderate to severe in nature and affecting activities of daily living for the last two months. The patient clinically had tenderness corresponding to the area described in history along with normal temperature and distal neurovascular status. A provisional diagnosis of uncomplicated plantar fasciitis was made and patient advised conservative therapy. The treatment included footwear modifications, silicone insoles, fomentation and supervised physical therapy. The treatment showed no

response for four weeks and patient was planned for injectable local steroid after informed consent and ruling out any possible contraindications. The injection was applied in standard manner following consent and aseptic precautions. A shot of two ml. of lignocaine hydrochloride (Xynova 2%, Troikaa pharmaceuticals Ltd. Dehradun) injection for decreased pain was applied prior to the 40 mg in 2 ml. injection of Depo-medrol (Pfizer Manufacturing Belgium NV, Rijksweg, Belgium) over the selected area. There was clinical improvement on pain scores that persisted for three weeks after the injection. At fourth week, the patient experienced pain over injection site that was mild in the beginning but increased in severity with nocturnal increase in severity and intensity. There were associated skin changes over the site that showed signs of inflammation further affecting the ability to ambulate (Fig. 1, 2). The patient reported after ten days of observation with serous discharge, tenderness and unbearable pain. The wound was dressed and under aseptic condition sample for culture and sensitivity taken before initiating empirical broad spectrum oral antibiotics. The radiograph of the foot showed a heel spur on lateral view corresponding to chronic condition (Fig. 3). There were no signs of systemic infection before and after the initiation of treatment as patient responded well with conservative treatment with three weeks of therapy, foot hygiene and periodic dressings. The culture report was negative for any organism.

The pain parameters were assessed for one, there, six and twelve week followed by three and six month. The patient was pain free and performing

activities of daily living at final follow up at six months with no related or remote complications.



Fig. 1: Clinical picture of the plantar wound



Fig. 2: Close up of the lesion



Fig. 3: Radiograph showing associated heel spur in painful region

DISCUSSION

Plantar fasciitis is a common cause of varying degree of heel pain. Many workers prefer use of the term fasciosis as microscopic examination does not necessarily correlate with presence of underlying inflammation in all cases [2]. Plantar fascia pain is mostly related to repetitive stress loading leading to micro tear inside the affected tissue [3]. Conservative treatment is the cornerstone of management in most cases [4]. In most occasions a localized area of the heel acts as pain generator. Local corticosteroid injection has been a common modality of treatment in cases refractory to non invasive methods. Most common methods are palpation and injection one [4, 6]. Ultrasonographic assisted injections have also been used with promising outcome [5, 6]. Studies have shown little evidence of superiority of one modality over the other when comparing injection methods using palpation, sonographic or scintigraphic methods in long term scenario [7]. However some studies show higher recurrence rate following palpation methods [8]. Fat pad atrophy or fascial rupture are some of many complications of injection therapy [9]. Spread of infection to underlying tissue may cause osteomyelitis of calcaneum [10].

CONCLUSION

Judicious use of corticosteroid injection following good patient selection and adherence to appropriate technique is a pre requisite for optimum and uneventful outcome following their use for refractory plantar fasciosis.

REFERENCES

1. Brinks A, Koes BW, Volkers AC, Verhaar JA, Bierma-Zeinstra SM; Adverse effects of extra-articular corticosteroid injections: a systematic review. *BMC Musculoskelet Disord.*, 2010, 11: 206.
2. Lemont H, Ammirati KM, Usen N; Plantar fasciitis: a degenerative process (fasciosis) without inflammation. *J Am Podiatr Med Assoc.*, 2003; 93(3): 234–237.
3. Cornwall MW, McPoil TG; Plantar fasciitis: etiology and treatment. *J Orthop Sports Phys Ther.*, 1999; 29(12): 756–760.
4. Gill LH; Plantar fasciitis: diagnosis and conservative management. *J Am Acad Orthop Surg.*, 1997; 5(2):109–117.
5. Kayhan A, Gökay NS, Alpaslan R, Demirok M, Yılmaz İ, Gökçe A; Sonographically guided corticosteroid injection for treatment of plantar fasciosis. *J Ultrasound Med.*, 2011; 30(4): 509–515.

6. Kane D, Greaney T, Shanahan M, Duffy G, Bresnihan B, Gibney R *et al.*; The role of ultrasonography in the diagnosis and management of idiopathic plantar fasciitis. *Rheumatology (Oxford)*, 2001; 40(9): 1002–1008.
7. YucelI, Yazıcı B, Degirmenci E, Erdogmus B, Dogan S; Comparison of ultrasound, palpation, and scintigraphy guided steroid injections in the treatment of plantar fasciitis. *Arch Orthop Trauma Surg.*, 2009; 129(5): 695–701.
8. Tsai WC, Hsu CC, Chen CP, Chen MJ, Yu TY, Chen YJ; Plantar fasciitis treated with local steroid injection: comparison between sonographic and palpation guidance. *J Clin Ultrasound.*, 2006; 34(1): 12–16.
9. Acevedo JI, Beksin JL; Complications of plantar fascia rupture associated with corticosteroid injection. *Foot Ankle Int.*, 1998; 19(2): 91–97.
10. Gidumal R, Evanski P; Calcaneal osteomyelitis following steroid injection: a case report. *Foot Ankle*, 1985; 6(1):44-46.