



## Case Report

# Efficacy of intra-lesional injection of platelet rich plasma in recurrent plantar fasciitis- A case study

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### ABSTRACT

Plantar fasciitis is the most common cause of heel pain in patients attending the orthopaedic clinics. Pathophysiology involves micro tears in the tendon leading to haemorrhage, rough granulation tissue formation and later repair. Even though the different treatment modalities have been claimed to be effective in treating this condition due to its chronic nature and tendency to recur with resumption of activity, no single modality has been considered. Platelet-rich plasma (PRP) injection as a treatment that has been used in recent times for various enthesopathies. It repairs incompletely healed injuries thereby reducing pain and increasing function. We report a series of 5 cases of recurrent Plantar Fasciitis treated with PRP injections.

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## 1. Introduction

Plantar Fasciitis is the most common cause of heel pain in patients attending the orthopaedic clinics.<sup>1</sup> Pathophysiology involves inflammation of the insertion of plantar fascia on the medial process of the calcaneal tuberosity.<sup>2</sup> Overuse from many activities and certain predisposing risk factors like obesity, sedentary life style, inappropriate footwear, long hours of standing, result in this disorder.<sup>2</sup> Differential Diagnosis of heel pain includes peripheral neuropathy, canal stenosis, plantar fascia tear, calcaneal stress fracture, fat pad atrophy, Rheumatological diseases.<sup>1</sup> Platelet-rich plasma (PRP) injection stimulates healing cascade and tissue regeneration by a Supra-physiological release of platelet-derived factors at the site of injection.<sup>3</sup> It repairs incompletely healed injuries thereby reducing pain and increasing function.<sup>4</sup> It is known to increase growth factor concentration 3-5 times to that of normal plasma and helps to accelerate healing of the injured tissue.<sup>5</sup> Since PRP uses autologous blood, chances of immunogenic reactions or

disease transfer that may occur from the usage of non-autologous blood are negated.<sup>3</sup>

## 2. Case Report

1. Case 1-54 years female, left sided heel pain since 3 years of duration.
2. Case 2-47 years female, left sided heel pain since 18 months.
3. Case 3-28 years Male, bilateral heel pain for a duration of 2 years.
4. Case 4-42 years female, right sided heel pain for a duration of 2 years.
5. Case 5-50 years male, left sided heel pain for a period of 2.5 years.

All the patients had characteristic dull aching pain on the under surface of heel more on waking up in the morning which gradually subsided after walking for some time.

Case 3 also had aggravation of pain following walking for more than 30 mins.

Pain was on and off for all the cases. All the cases have taken previous treatments in the form of Analgesics, use of

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Silicon heel Pad and Intra-lesional steroids.

None of the cases in the series were know diabetic or hyperthyroid. None of the cases had any history of any other joint pain or stiffness, back pain and history of trauma.

On examination, in all cases, tenderness was elicited at the medial tubercle of calcaneus.

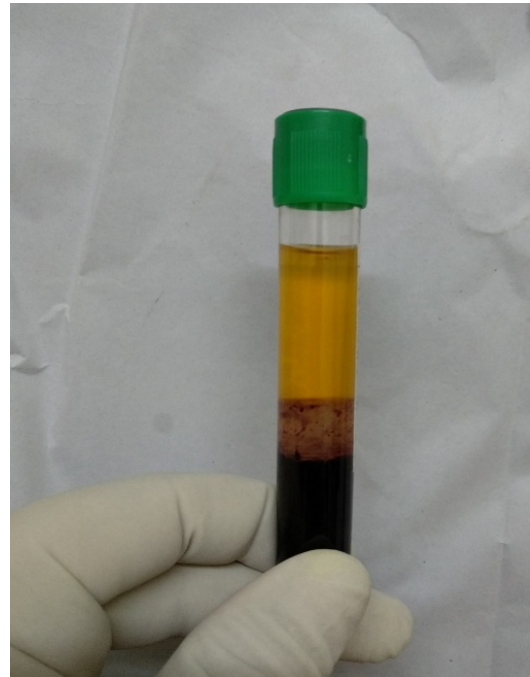
Ankle dorsiflexion was normal for all the cases. VAS and AOFAS scores were calculated for all the patients as given in Tables 2 and 3.

X-rays were taken for all the patients on the effected foot and presence of calcaneal spur was noted in all of them.

Blood investigations to rule out of differential diagnosis were done including CBC, CRP, TSH and Uric Acid and found to be within normal limits as shown in Table 1.

**Table 1:**

	<b>CBC</b>	<b>CRP (mg/L)</b>	<b>TSH (mIU/L)</b>	<b>Uric Acid (mg/dl)</b>
Case 1	Normal	2	2.75	2.4
Case 2	Normal	4	1.10	2
Case 3	Normal	3	2.45	4.1
Case 4	Normal	2	0.96	3.6
Case 5	Normal	1	1.85	2.8



**Fig. 1:** PRP preparation, After 1<sup>st</sup> spin.

**3. Treatment Given**

All five cases were treated with two injections of autologous PRP given at interval of 6 weeks. PRP was prepared by two spin method. 2ml of PRP was injected around the point of tenderness via a single point medial entry. Post injection Ice packs and Tablet Paracetamol 650 mg SOS was advised. Plantar stretching exercises were started from next day. VAS and AOFAS scores were evaluated at 1<sup>st</sup> follow up at 3 weeks and 2<sup>nd</sup> follow-up at 6weeks. At 6weeks 2<sup>nd</sup> injection was given following the previous technique.

VAS and AOFAS scores were again evaluated at 3<sup>rd</sup> follow-up at 9 weeks.

**4. Results**

Results were evaluated on the basis of VAS and AOFAS scores at the subsequent follow-up as shown in Tables 2 and 3.

**Table 2:** Visual analog scale at presentation and follow-ups.

	<b>At presentation</b>	<b>3 weeks</b>	<b>6 weeks</b>	<b>9 weeks</b>
<b>VAS</b>	Case 1	7	5	3
	Case 2	8	6	3
	Case 3	10	7	3
	Case 4	9	7	2
	Case 5	8	6	3



**Fig. 2:** Final Prepared PRP after 2<sup>nd</sup> spin

**Table 3:** American orthopaedic foot and ankle score at presentation and subsequent follow-up

		<b>At presentation</b>	<b>3 weeks</b>	<b>6 weeks</b>	<b>9 weeks</b>
<b>AOFAS</b>	Case 1	71	85	92	98
	Case 2	62	78	87	100
	Case 3	45	64	81	96
	Case 4	52	70	90	95
	Case 5	58	76	89	100

## 5. Discussion

The above table shows decreasing VAS and increasing AOFAS scores with each follow-up. The last follow up was at 15 weeks when all the five patients were found to be free of any heel pain.

## 6. Conclusion

From the above cases we conclude that PRP is effective in treatment of Planter fasciitis even in recurrent cases which were not responsive to other conservative modalities of treatment. We propose to use PRP as the primary modality of treatment along with activity modification and Plantar Stretching exercise in all cases of Plantar Fasciitis.

## 7. Conflict of Interest

None.

## 8. Source of Funding

None.

## References

1. Latt L, Jaffe DE, Tang Y, Taljanovic MS. Evaluation and Treatment of Chronic Plantar Fasciitis. *Foot Ankle Orthop.* 2020;5(1):1–11. doi:10.1177/2473011419896763.
2. Mandeep SD, Raj GN. The Foot and the Ankle. In: Jain A, editor. *Tureks Orthopaedics*, 7th Edn. New Delhi: Wolters Kluwer (India) Pvt. Ltd; 2016. p. 1401.
3. Madhan J, Naveen J, Ravi VR, Tendinopathies. *Tendinopathies*. In: Khanna M, editor. *Textbook of Orthopedic Rheumatology*, 1st edn. India: Jaypee Brothers Medical Publishers P. Ltd; 2022. p. 313.
4. Sampson S, Gerhardt M, Mandelbaum B. Platelet rich plasma injection grafts for musculoskeletal injuries: a review. *Curr Rev Musculoskelet Med.* 2008;1(3-4):165–74. doi:10.1007/s12178-008-9032-5.
5. Mishra A, Woodall J, Vieira A. Treatment of tendon and muscle using platelet-rich plasma. *Clin Sports Med.* 2009;28(1):113–25. doi:10.1016/j.csm.2008.08.007.

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