

Physiotherapy Management of Dynamic Balance Impairment in an Adult with Plantar Fasciitis: A Case Report

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Abstract

Background: Plantar fasciitis may be accompanied by pain, altered weight bearing, impaired postural control, and reduced functional mobility.

Objective: To describe clinical changes observed during a four-session physiotherapy program combining therapeutic ultrasound and progressive exercise in an adult with plantar fasciitis and dynamic balance impairment.

Methods: This descriptive single case report was conducted at Muhammadiyah Lamongan Hospital, East Java, Indonesia. The patient was a 52-year-old woman with a two week history of plantar fasciitis and impaired dynamic balance. Outcomes included Numeric Rating Scale pain scores, Manual Muscle Testing, Foot Posture Index 6, Windlass Test, Talar Tilt Test, Berg Balance Scale, and 10 Meter Walk Test. Changes were described without inferential statistical testing.

Results: Resting pain changed from 3/10 to 2/10, tenderness from 7/10 to 3/10, and movement pain from 4/10 to 3/10. Recorded ankle dorsiflexion strength changed from 1/5 to 2/5 on the affected side. FPI 6 scores remained 0 on the right and +2 on the left. Windlass and Talar Tilt Test results changed from positive to negative at the final recorded session. BBS increased from 25 to 44-, and 10-Meter Walk Test speed increased from 0.71 to 1.10 m/s.

Conclusion: Positive changes in pain, recorded muscle strength, balance performance, and walking speed were observed during the four-session physiotherapy period. Because this was a single case without a comparator or long term follow up, the observed changes cannot be attributed causally to the combined intervention.

Keywords

Plantar Fasciitis; Ultrasonic Therapy; Exercise Therapy; Postural Balance; Adult

Introduction

Plantar fasciitis is a common musculoskeletal disorder characterized by plantar heel pain and is frequently managed with conservative rehabilitation. Clinical practice guidance emphasizes a multimodal approach that may include education, stretching, strengthening, manual therapy, and other interventions selected according to the patient's presentation. The condition can affect weight bearing, walking, and participation in daily activities, particularly when pain persists or is accompanied by lower limb impairments. In the present case, the clinical concern extended beyond heel pain to dynamic balance and functional mobility, making the interaction between local foot symptoms and whole limb performance clinically relevant.¹

Pain arising from the plantar heel can alter loading patterns and walking behavior. Changes in plantar sensory input, ankle function, and lower limb muscle performance may influence postural control during standing and walking. Evidence comparing individuals with plantar fasciitis with controls has also identified differences in balance and gait related measures, supporting the clinical relevance of assessing functional performance rather than pain alone.² The current case therefore used outcomes spanning pain, muscle performance, foot posture, specific clinical tests, balance, and walking speed.

Therapeutic ultrasound has been used as an adjunctive modality in the conservative management of plantar fasciitis. A 2024 systematic review of randomized controlled trials reported reductions in pain and functional disability in several included studies, although the findings were not uniformly supportive and the evidence base remained limited.³ Exercise based management provides a complementary focus because stretching and strengthening can address muscle performance and gait related impairments. A randomized controlled trial reported improvements in pain and selected temporospatial gait parameters after strengthening or stretching exercise programs.⁴ In addition, a systematic review and meta-analysis found that intrinsic foot muscle training may improve dynamic postural balance and foot related biomechanical outcomes.⁵

Despite this evidence, the literature does not establish from a single case whether combining therapeutic ultrasound with progressive exercise produces a specific balance related benefit. The available evidence also largely concerns group level outcomes, whereas routine physiotherapy practice involves individualized progression according to symptoms, tolerance, and functional presentation. The present case is therefore clinically relevant as a description of how a multimodal program was applied to a patient whose principal functional concerns included pain, lower limb muscle weakness, impaired balance, and reduced walking performance.

The novelty of this report is not an assertion of treatment effectiveness. Rather, it is the detailed description of a multimodal physiotherapy program and the changes observed across several clinically relevant domains in one patient treated in an Indonesian hospital setting. The report also illustrates the need to interpret balance and walking outcomes in the context of a pre-existing contralateral ankle weakness, which may influence baseline functional performance and the pattern of change during treatment.

This case report aimed to describe the clinical application and observed outcomes of therapeutic ultrasound combined with progressive exercise therapy for pain, recorded ankle muscle strength, foot posture, clinical test findings, balance performance, and functional mobility in an adult with plantar fasciitis and dynamic balance impairment.

Methods

This study was a descriptive single case report conducted at Muhammadiyah Lamongan Hospital, East Java, Indonesia. The report was revised in accordance with the CARE case report reporting framework, which emphasizes patient information, clinical findings, diagnostic assessment, therapeutic intervention, timeline, follow up, patient perspective, and informed consent.⁶ The information available in the source manuscript did not include all CARE elements. Missing information is explicitly identified for author confirmation rather than reconstructed.

The patient was a 52-year-old woman, 162 cm in height and 78 kg in weight, with a recorded body mass index of 29.7 kg/m². She was a housewife and reported no regular physical exercise. The left lower limb was recorded as dominant and the left foot as affected. Symptoms had been present for approximately two weeks. The main complaints were heel pain, ankle muscle weakness, and impaired dynamic balance during functional activities. The patient had no reported previous surgery or neurological disorder. A history of right lower limb trauma approximately 1.5 years before presentation was associated with persistent weakness of the right ankle dorsiflexor muscles.

The initial physiotherapy assessment identified plantar heel pain, reduced ankle muscle strength, impaired dynamic balance, gait disturbance, and limited functional mobility. The recorded diagnosis was plantar fasciitis with associated dynamic balance impairment. The assessment battery included the Numeric Rating Scale (NRS), Manual Muscle Testing (MMT), Foot Posture Index 6 (FPI 6), Windlass Test, Talar Tilt Test, Berg Balance Scale (BBS), and 10 Meter Walk Test (10MWT).

The medical diagnosis of plantar fasciitis was based on the referring physician's diagnosis. Clinical findings supporting this diagnosis included left heel pain during walking, particularly during the first steps in the morning, with a symptom duration of approximately two weeks. The patient demonstrated an antalgic gait on the left, with a markedly shortened left heel strike, sharp tenderness at the left medial calcaneal tuberosity, tenderness over the left plantar fascia, increased local temperature, and plantar fascial tightness. The Windlass Test was positive at T1 through T3 and negative at T4. No differential diagnosis was formally documented in the available case record; therefore, no alternative diagnosis or exclusion procedure is reported beyond the documented medical diagnosis and clinical findings.

Dynamic balance impairment was supported clinically by difficulty maintaining balance during transfers, during which the patient required her husband's support, together with left antalgic gait and right foot drop. At T1, the Berg Balance Scale score was 25/56 and walking speed on the 10 Meter Walk Test was 0.71 m/s, indicating limited balance performance and functional mobility within this clinical presentation. A previous right lower limb injury approximately 1.5 years earlier was associated with persistent weakness. Right ankle dorsiflexion was graded 1/5 at T1 and T2 and 2/5 at T3 and T4. Active right dorsiflexion was not through full range of motion. Quantitative goniometry and a specific neurological examination were not documented. The patient had previously attended a neurology clinic for approximately one year after the injury. The available findings suggested that the right sided impairment could influence gait and balance, but its contribution to the observed changes in BBS and 10MWT could not be quantified.

The Windlass Test was recorded as positive during the first three recorded sessions and negative at the fourth. It was interpreted as a plantar fascia related clinical finding. The Talar Tilt Test was also positive during the first three sessions and negative at the fourth; this test was interpreted only in relation to ankle ligament stability and was not used as evidence of plantar fascia healing.

Pain intensity was recorded with the NRS for resting pain, tenderness, and movement pain. Muscle performance was recorded using MMT for ankle dorsiflexion, plantarflexion, inversion, and eversion. Foot posture was assessed using the FPI 6. The Windlass Test and Talar Tilt Test were recorded as positive or negative findings. Functional balance was assessed using the BBS, and walking speed was calculated from the 10MWT as distance divided by time.

All outcomes were assessed as part of the physiotherapy service at T1 through T4 by the same recorded examiner, Adam Surya Fajar R. The available case record documented the use of the NRS for pain, MMT for muscle strength, FPI 6 for foot posture, Windlass and Talar Tilt Tests as specific clinical tests, the BBS for balance performance, and the 10MWT for walking speed. Basic test positions and instructions were described in the clinical assessment materials, but the number of trials or repetitions was not consistently documented for all outcomes. The record therefore does not permit reconstruction of an identical trial structure for every test. The examiner was involved in the treatment process and was aware of the assessment time point. FPI 6 total scores were recorded as 0 for the right foot and +2 for the left foot; the specific category label applied to these totals was not documented in the available case record. Walking speed was calculated from the recorded 10 m distance and completion time. Details concerning footwear, assistive device use, walkway conditions, starting procedure, and practice trials were not sufficiently documented and are not reconstructed here. Appropriate measurement references should be retained or added during final reference verification; no bibliographic information has been invented in this revision.

The patient received four physiotherapy sessions, each lasting approximately 45 to 60 minutes. Therapeutic ultrasound was administered before exercise during each treatment session. The recorded ultrasound parameters were 3 MHz frequency, 50% pulsed mode, 0.6 W/cm² intensity, and 4 minutes per session. The exercise program included plantar fascia stretching, calf stretching, toe curl exercises, heel raises, mini squats, ankle strategy exercises, hip strategy exercises, stepping strategy exercises, and tandem walking.

Therapeutic ultrasound was applied to the left plantar fascia region, around the medial calcaneal tubercle, using coupling gel. The source record reported a frequency of 3 MHz, pulsed mode, and an intensity of 0.6 W/cm². The confirmed treatment frequency was twice weekly, and the recorded duration ranged from 2 to 4 minutes. The exact treatment area size, transducer movement technique, and patient position were not specifically documented and are therefore not reconstructed. Ultrasound was used as part of the multimodal physiotherapy program before exercise for symptom management and to facilitate participation in the exercise program; this rationale should not be interpreted as evidence of a demonstrated mechanism in this single case.

Exercise progression moved from symptom management, flexibility, and basic strengthening toward balance and gait related activities according to clinical response and functional tolerance. The documented exercise content is reported in the intervention tables. The confirmed program frequencies were stretching daily, strengthening 3 to 5 times per week, and balance training 2 to 3 times per week. The four clinic time points were T1 through T4; T1 was the documented baseline and T4 the final recorded evaluation.

The chronological sequence of the initial assessment, physiotherapy management across four sessions, and final evaluation can be seen in Table 1.

Table 1. Timeline of Clinical Assessment, Physiotherapy Management, and Outcome Evaluation

Recorded time point	Clinical event
Initial assessment	Patient interview, physical examination, NRS, MMT, FPI 6, Windlass Test, Talar Tilt Test, BBS, and 10MWT
Session 1	Ultrasound, plantar fascia stretches, toe curl, heel raise
Session 2	Ultrasound, plantar fascia stretches, hip strategy training, heel raise, calf stretch
Session 3	Ultrasound, heel raise, mini squat, stepping strategy training, tandem walking
Session 4	Ultrasound, heel raise, balance strategy training, tandem walking
Final evaluation	Reassessment using physical examination, NRS, MMT, FPI 6, Windlass Test, Talar Tilt Test, BBS, and 10MWT

Table 1 presents the documented clinical sequence from the initial assessment through four treatment sessions to the final evaluation. The documented sequence was an initial assessment at T1, followed by treatment and evaluation at T2, T3, and T4. T1 served as the baseline assessment within the recorded course of care, and T4 was the final recorded evaluation. No separate assessment after T4 was documented. The available case record did not provide dates for the individual sessions or sufficient information to establish the exact order of measurement relative to treatment within every session.

An informed consent form was included as Appendix 1 in the source thesis and was documented as covering clinical care and the use of clinical data for the case report. The signed status and exact scope of this consent should be verified against the original form before final submission. Specific consent for publication of the case report was not explicitly documented in the available materials.

Data were analyzed descriptively by comparing the recorded outcome values across the four sessions. No inferential statistical analysis, effect size, or confidence interval was reported in the source manuscript. The present revision therefore does not introduce statistical estimates that were not available in the original case report.

Results

The baseline patient characteristics are summarized in Table 1. The patient was 52 years old and therefore the revised manuscript uses the term adult rather than older adult or elderly. The recorded history of contralateral right ankle dorsiflexor weakness is retained because it is potentially relevant to interpretation of balance and walking outcomes. The baseline patient characteristics and relevant clinical history are summarized in Table 2.

Table 2. Patient Characteristics and Relevant Clinical History

Variable	Description
Age	52 years
Sex	Female
Height	162 cm
Weight	78 kg
Body mass index	29.7 kg/m ²
Occupation	Housewife
Physical activity	No regular exercise
Dominant limb	Left lower limb
Affected limb	Left foot
Diagnosis	Plantar fasciitis
Duration of symptoms	2 weeks
Main complaints	Heel pain, ankle muscle weakness, and impaired dynamic balance during functional activities
Previous injury history	Right lower limb trauma approximately 1.5 years before presentation, with persistent right ankle dorsiflexor weakness
Previous surgery	None reported
Neurological disorder	None reported

These factors provide the clinical context for interpreting the patient's presentation and response over the documented treatment period. The clinic-based physiotherapy interventions delivered during each of the four treatment sessions are summarized in Table 3.

Table 3. Clinic Based Physiotherapy Interventions Across Four Sessions

Session	Core activities
Session 1	Ultrasound; plantar fascia stretches; toe curl; heel raise
Session 2	Ultrasound; plantar fascia stretches; hip strategy training; heel raise; calf stretch
Session 3	Ultrasound; heel raise; mini squat; stepping strategy training; tandem walking
Session 4	Ultrasound; heel raise; balance strategy training; tandem walking

The patient tolerated the reported physiotherapy interventions without documented adverse or unanticipated events. Home exercise included balance, stretching, and strengthening exercises taught by the physiotherapist. Education included reducing activities that excessively loaded the foot, avoiding barefoot walking on hard surfaces, using footwear with appropriate arch support, and using additional heel cushioning or an insole when appropriate. Adherence was not monitored using a diary, checklist, or another objective method, and the available record did not permit quantification of actual home exercise frequency.

Changes in resting pain, tenderness, and movement related pain across the four treatment sessions can be seen in Table 4.

Table 4. Changes in Pain Intensity Across Four Sessions

Outcome	Session 1	Session 2	Session 3	Session 4
Resting pain	3/10	3/10	2/10	2/10
Tenderness	7/10	6/10	4/10	3/10
Movement pain	4/10	4/10	4/10	3/10

Across the recorded sessions, resting pain changed from 3/10 to 2/10, tenderness from 7/10 to 3/10, and movement pain from 4/10 to 3/10. The manual muscle testing scores recorded across the four treatment sessions can be seen in Table 5.

Table 5. Changes in Manual Muscle Testing Scores Across Four Sessions

Region	Movement	Session 1 D	Session 1 S	Session 2 D	Session 2 S	Session 3 D	Session 3 S	Session 4 D	Session 4 S
Ankle	Dorsiflexion	1	3	1	3	2	4	2	4
Ankle	Plantarflexion	4	4	4	4	5	5	5	5
Ankle	Inversion	4	5	4	5	5	5	5	5
Ankle	Eversion	4	5	4	5	5	5	5	5

The abbreviations D and S are retained as source labels because their meaning was not formally confirmed in the available record. MMT values changed across the recorded sessions. The original source table used the abbreviations D and S without an explicit legend in the available record. Because the meaning of these abbreviations was not formally confirmed, they are retained as source labels and are not redefined in this report. Independently confirmed right ankle values showed dorsiflexion of 1/5 at T1 and T2 and 2/5 at T3 and T4; plantarflexion increased from 4/5 to 5/5, while inversion and eversion increased from 4/5 to 5/5. The corresponding left sided values should be interpreted from the original source table, with the unresolved D and S legend noted as a reporting limitation. The Foot Posture Index 6 scores for both feet across the four treatment sessions can be seen in Table 6.

Table 6. Foot Posture Index 6 scores Across Four Sessions

FPI 6 total score	Session 1	Session 2	Session 3	Session 4
Right foot	0	0	0	0
Left foot	+2	+2	+2	+2

No change in total score was observed. Changes in the Windlass Test and Talar Tilt Test results across the four treatment sessions can be seen in Table 7.

Table 7. Changes in Windlass and Talar Tilt Test Results Across Four Sessions

Test	Session 1	Session 2	Session 3	Session 4
Windlass Test	+	+	+	-
Talar Tilt Test	+	+	+	-

The Windlass Test changed from positive during Sessions 1 to 3 to negative at Session 4. The Talar Tilt Test showed the same pattern. These findings are reported descriptively and are not interpreted as direct evidence of tissue healing. BBS total scores increased across the recorded sessions. The total score was 25 at Session 1, 29 at Session 2, 34 at Session 3, and 44 at Session 4. The item level Berg Balance Scale scores recorded across the four treatment sessions can be seen in Table 8.

Table 8. Changes in Berg Balance Scale Item Scores Across Four Sessions

Assessment item	Session 1	Session 2	Session 3	Session 4
Sit to Stand	2	2	3	3
Standing Unsupported	3	3	4	4
Sitting Unsupported	2	3	3	4
Stand to Sit	2	2	2	3
Transfers	2	2	3	3
Standing with Eyes Closed	1	1	2	2
Standing with Feet Together	1	2	2	2
Reaching Forward with Outstretched Arm	2	2	3	4
Retrieving Object from the Floor	1	2	2	3
Turning to Look Behind	2	2	2	3
Turning 360°	2	2	3	3
Placing Alternate Foot on a Stool	1	2	2	3
Tandem Standing	2	2	3	4
Single Leg Standing	1	2	2	3
Total Score	25	29	34	44

Changes in walking speed measured using the 10 Meter Walk Test across the four treatment sessions can be seen in Table 9.

Table 9. Changes in 10 Meter Walk Test Speed Across Four Sessions

Parameter	Session 1	Session 2	Session 3	Session 4
Walking speed	10 m / 14 s = 0.71 m/s	10 m / 12 s = 0.83 m/s	10 m / 11 s = 0.90 m/s	10 m / 9 s = 1.10 m/s

The recorded 10MWT speed increased from 0.71 m/s at Session 1 to 1.10 m/s at Session 4. This change is reported as a descriptive change in walking speed and is not interpreted as proof of safer ambulation or a specific change in gait pattern.

Discussion

The principal finding of this case is that several clinical outcomes changed during a four-session physiotherapy period that combined therapeutic ultrasound with progressive exercise. Resting pain changed from 3/10 to 2/10, tenderness from 7/10 to 3/10, and movement pain from 4/10 to 3/10. Recorded ankle MMT scores increased in several muscle groups, BBS increased from 25 to 44, and 10MWT speed increased from 0.71 to 1.10 m/s. FPI 6 scores did not change. Windlass and Talar Tilt Test results changed from positive to negative at the final recorded session. These findings describe temporal changes observed during treatment rather than demonstrate that the intervention caused the changes.

The observed reduction in pain is compatible with previous evidence that therapeutic ultrasound can reduce pain and functional disability in some patients with plantar fasciitis, although the evidence is heterogeneous.³ The current case cannot determine the contribution of ultrasound because it was administered together with exercise and there was no untreated or alternative treatment comparator. The original rationale for applying ultrasound before exercise was symptom modulation and facilitation of exercise tolerance. Any proposed physiological mechanisms, including thermal or non-thermal effects, should therefore be understood as mechanisms discussed in the broader literature rather than mechanisms demonstrated in this patient.

The exercise component is also consistent with evidence supporting stretching and strengthening for pain and gait related outcomes in plantar fasciitis.⁴ Intrinsic foot muscle training has additionally been associated with improvements in dynamic postural balance in a systematic review and meta-analysis.⁵ The present exercise program included toe curl, heel raise, mini squat, stretching, ankle strategy, hip strategy, stepping strategy, and tandem walking. The combination of strengthening, flexibility, and balance-oriented tasks provides a plausible clinical framework for addressing multiple impairments. Nevertheless, because the intervention was multimodal and individualized, the specific contribution of any single exercise cannot be determined from this case.

The increase in BBS score from 25 to 44 represents a descriptive change in observed balance performance. It should not be translated directly into a conclusion that fall risk was reduced. Fall risk is multifactorial and depends on population specific thresholds, previous falls, comorbidities, environmental factors, and other clinical characteristics.⁷ The present case did not include a fall risk assessment beyond the BBS, and no population specific cut-off or minimal clinically important difference was reported. The BBS findings are therefore best interpreted as an observed change in functional balance performance.

The increase in 10MWT speed from 0.71 to 1.10 m/s similarly indicates a change in the recorded walking speed. It may reflect changes in pain, strength, balance, confidence, repeated exposure to the test, or other factors.⁸ Because the study did not include repeated independent baseline measurements or a comparator, the observed change cannot be separated from measurement variability, learning effects, natural recovery, or other changes in activity. A clinically meaningful interpretation would require a population appropriate threshold or measurement error estimate.⁹ Such a threshold was not established in the source manuscript and should be added only after author verification of the relevant population and reference.

The right lower limb history is particularly important when interpreting the balance and walking findings. The patient had persistent right ankle dorsiflexor weakness after a previous trauma. Because balance and gait are influenced by both lower limbs, the contralateral impairment may have affected baseline performance and may also have influenced the observed response. The available case data do not contain sufficient neurological, range of motion, or functional examination findings to quantify this influence. This issue should therefore remain an explicit limitation rather than being treated as a controlled confounder.

The unchanged FPI 6 score indicates that the recorded foot posture values did not change during the observation period. This does not establish that the intervention had no effect on foot structure, because a four-session period may be insufficient to alter structural alignment and FPI 6 is only one clinical measure of foot posture. The total scores of 0 on the right and +2 on the left should be interpreted using the category system specified by the FPI 6 method. No causal conclusion regarding foot posture should be drawn from the absence of change in this single case.

The Windlass Test and Talar Tilt Test require separate interpretation. The Windlass Test is relevant to plantar fascia related clinical assessment, whereas the Talar Tilt Test primarily assesses ankle ligament stability¹⁰. The change in Talar Tilt Test status should therefore be described as a change in the recorded clinical stability finding and should not be used as evidence of reduced plantar fascia irritation or tissue healing. The available data do not establish why either test changed over time.

Several alternative explanations remain possible. Plantar fasciitis symptoms may improve naturally over time, particularly in a patient with a short symptom duration of two weeks.¹ Repeated measurement may also influence performance on the BBS, MMT, and 10MWT. The patient reported home exercise adherence, but adherence was not quantified independently. Insole use was not fully controlled, and the source manuscript does not provide sufficient information about medication or other co interventions. These factors reduce confidence in attributing the observed changes specifically to the combined physiotherapy program.

The main strengths of the report are the inclusion of multiple outcome domains, description of progression across four sessions, and reporting of both positive and unchanged findings. The principal limitations are the single case design, absence of a comparator, short observation period, absence of long term follow up, potential natural recovery, repeated testing, possible examiner variability, unquantified home exercise adherence, incomplete control of insole use, and the pre-existing contralateral dorsiflexor weakness. Patient perspective is also unavailable in the source material. These limitations should be addressed before publication according to CARE reporting requirements.⁶

Overall, the case provides a clinically useful description of multimodal physiotherapy management and the temporal changes observed in one adult with plantar fasciitis and dynamic balance impairment. The findings may inform clinical observation and hypothesis generation, but they should not be interpreted as evidence of treatment effectiveness. Future studies should use controlled designs, standardized intervention dosing, quantified adherence, consistent measurement procedures, and longer follow up to determine whether similar changes are reproducible and clinically meaningful.

Conclusion

In this single case, changes were observed in pain intensity, recorded ankle muscle strength, balance performance, and walking speed during a four-session physiotherapy period that included therapeutic ultrasound and progressive exercise. The BBS score increased from 25 to 44 and 10MWT speed increased from 0.71 to 1.10 m/s, while FPI 6 total scores remained unchanged. The Windlass Test and Talar Tilt Test also changed from positive to negative at the final recorded session, although these findings require separate clinical interpretation. Because the case had no comparator, a short observation period, no long term follow up, and several potential sources of confounding and measurement variability, the observed changes cannot be attributed causally to the combined intervention. The case should therefore be viewed as a descriptive clinical report that may support further investigation rather than as evidence of treatment effectiveness.

Author Contribution

Adam Surya Fajar Rahmatullah: Conceptualization; Methodology; Investigation; Data curation; Formal analysis; Writing, original draft.
Diah Rosyida Maulidina: Conceptualization; Methodology; Supervision; Validation; Writing, review and editing.
Rizka Asna Rahmawati: Methodology; Validation; Supervision; Writing, review and editing.

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Conflict of Interest Statement

The authors declare that they have no conflict of interest.

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Ethics Statement

This case report was based on clinical physiotherapy management and the retrospective use of clinical data for scientific reporting. Written informed consent for participation and the use of relevant clinical information was obtained from the patient. However, the availability of formal ethical approval or an institutional exemption could not be confirmed from the available manuscript and supporting documents. Therefore, the name of the ethics committee, institution, and approval or exemption number should be added if applicable. Consent for publication of the case report should also be verified before submission.

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