Accelerated Return to Sport Following Grade II Medial Collateral Ligament Sprain in a Collegiate Soccer Player

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Abstract

Medial collateral ligament (MCL) sprains are among the most common knee injuries in soccer, yet evidence-based rehabilitation protocols tailored to the demands of collegiate-level competition remain limited. This case report describes the assessment, rehabilitation, and return-to-sport progression of a 21-year-old male collegiate soccer player who sustained a Grade II MCL sprain of the right knee during a competitive match. The patient presented with medial knee pain, localized swelling, and a positive valgus stress test at 30 degrees of flexion, with no evidence of concurrent ligamentous or meniscal pathology on magnetic resonance imaging. A six-week individualized rehabilitation protocol was implemented, comprising three phases: acute pain and swelling management, progressive neuromuscular and strength training, and sport-specific functional reintegration. The patient achieved full return to competitive play at week six, with restoration of symmetric limb strength, single-leg hop performance, and self-reported functional confidence. No re-injury was recorded at twelve-week follow-up. This case illustrates the feasibility of an accelerated, criterion-based return-to-sport approach for Grade II MCL sprains in competitive soccer players and highlights the importance of individualized progression over fixed time-based protocols.

Keywords

medial collateral ligament sprain; knee injury; return to sport; soccer; rehabilitation; neuromuscular training; sports medicine; case report

1. Introduction

Medial collateral ligament (MCL) sprains represent a common injury in soccer, accounting for a significant proportion of time-loss events at both amateur and elite levels [1]. Grade II MCL injuries, characterized by partial ligamentous disruption with resultant joint laxity but preserved structural continuity, typically require several weeks of conservative management before return to full athletic participation [2]. While general rehabilitation frameworks exist, the optimal progression for competitive athletes — particularly at the collegiate level, where both academic and athletic demands are substantial — remains a subject of clinical debate.

Criterion-based return-to-sport (RTS) protocols, which condition athletic reintegration on the achievement of defined functional benchmarks rather than fixed time points, have gained increasing support in the sports medicine literature [3]. This case report describes the application of such a protocol in a collegiate soccer player with a Grade II MCL sprain, with the aim of contributing to the growing body of evidence supporting individualized, criterion-driven rehabilitation in this population.

Informed written consent was obtained from the patient for the publication of this case report and any accompanying data.

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2. Case Presentation

A 21-year-old male collegiate soccer player (height 181 cm, body mass 76 kg) presented to the sports medicine clinic within 24 hours of sustaining a right knee injury during a competitive match. The mechanism of injury involved a non-contact valgus loading event during a cutting maneuver. The patient reported immediate medial knee pain rated 7 out of 10 on the Numeric Pain Rating Scale (NPRS), localized swelling, and inability to continue play.

Physical examination revealed tenderness to palpation along the medial joint line and distal MCL, a positive valgus stress test at 30 degrees of flexion with a firm endpoint, and no laxity at full extension. Anterior drawer, Lachman, and McMurray tests were negative. Magnetic resonance imaging (MRI) confirmed a Grade II MCL sprain with partial fiber disruption and periligamentous edema, with no evidence of anterior cruciate ligament, posterior cruciate ligament, or meniscal pathology.

The patient had no prior history of knee injury and reported an activity level of approximately twelve hours of structured soccer training and competition per week prior to injury.

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3. Rehabilitation Protocol

The rehabilitation program was divided into three sequential phases, with progression contingent upon the achievement of predefined criteria at each stage.

Phase 1 — Acute Management (Days 1–7)

Initial management prioritized pain and swelling control through relative rest, cryotherapy applied for 20 minutes three times daily, and compressive bandaging. Partial weight-bearing with axillary crutches was permitted from day one, with progression to full weight-bearing as tolerated. Range of motion exercises were initiated within the pain-free arc from day two, with a target of full passive extension and 90 degrees of flexion achieved by day seven. Isometric quadriceps and hip abductor strengthening exercises were commenced on day three.

Phase 2 — Progressive Loading and Neuromuscular Training (Weeks 2–4)

Following achievement of Phase 1 criteria, the patient progressed to a comprehensive strengthening program targeting the quadriceps, hamstrings, hip abductors, and calf musculature. Exercises included bilateral and unilateral leg press, Romanian deadlift, Nordic hamstring curl, and side-lying hip abduction, with progressive load increments guided by the principle of pain-free performance. Neuromuscular training incorporating balance board exercises, single-leg stance progressions, and perturbation training was introduced in week three. Stationary cycling and aquatic jogging were used to maintain cardiovascular fitness throughout this phase. Progression to Phase 3 required pain-free completion of all Phase 2 exercises, limb symmetry index (LSI) of ≥80% on single-leg isometric strength testing, and NPRS ≤1 during activity.

Phase 3 — Sport-Specific Reintegration (Weeks 5–6)

Phase 3 involved progressive reintroduction of soccer-specific movements, including straight-line running, change-of-direction drills, passing and receiving under controlled conditions, and ultimately full-contact training. Valgus stress loads were gradually reintroduced through lateral cutting and defensive positioning drills, monitored closely for pain provocation or apprehension. Return to full competitive play was permitted upon achievement of LSI ≥90% on single-leg hop testing, pain-free completion of all sport-specific tasks, and self-reported readiness assessed using the ACL-RSI (Anterior Cruciate Ligament — Return to Sport after Injury) scale adapted for MCL injury.

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4. Outcomes

The patient achieved full return to competitive soccer at six weeks post-injury, meeting all predefined criteria for Phase 3 completion. At the time of RTS clearance, LSI was 94% for single-leg hop distance and 91% for triple hop distance. NPRS during sport-specific activity was 0. Self-reported functional confidence, assessed using the adapted ACL-RSI scale, was 87 out of 100.

At twelve-week follow-up, the patient reported no recurrence of knee pain or instability, had completed the remainder of the competitive season without further injury, and rated his overall satisfaction with the rehabilitation process as 9 out of 10.

5. Discussion

This case demonstrates that a structured, criterion-based rehabilitation protocol can facilitate safe and timely return to competitive soccer following a Grade II MCL sprain within six weeks of injury. The outcome achieved in this case is broadly consistent with existing literature reporting RTS timelines of four to eight weeks for isolated Grade II MCL injuries managed conservatively [4, 5], while underscoring the value of individualized progression over fixed time-based approaches.

The integration of neuromuscular training in Phase 2 is noteworthy, given the established role of proprioceptive deficits in the pathogenesis of recurrent knee injury in soccer players [6]. By addressing neuromuscular control alongside strength restoration, the protocol aimed to reduce re-injury risk during the high-demand movements characteristic of competitive play.

Several limitations of this report should be acknowledged. As a single case, the findings cannot be generalized to all patients with Grade II MCL sprains, and outcomes may differ in individuals with concurrent injuries, greater baseline limb asymmetry, or different positional demands. Prospective cohort studies and randomized controlled trials incorporating criterion-based RTS protocols for MCL injuries in soccer are warranted to strengthen the evidence base in this area.

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6. Conclusions

This case report describes a successful accelerated return to competitive soccer following Grade II MCL sprain using an individualized, criterion-based rehabilitation protocol. The patient achieved full RTS at six weeks with high functional symmetry and self-reported confidence, and remained injury-free at twelve-week follow-up. These findings support the feasibility of criterion-driven rehabilitation approaches for this injury in collegiate soccer athletes and highlight the importance of neuromuscular training as a component of MCL rehabilitation.

Ethics Statement

Informed written consent was obtained from the patient prior to the preparation of this case report. No ethics committee approval was required for the reporting of a single clinical case under applicable institutional guidelines.

Conflict of Interest Statement

The author declares no conflict of interest.

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Data Availability Statement

All relevant data are contained within this case report.

AI Use Statement

No artificial intelligence tools were used in the preparation of this manuscript.

Author Contribution

D.P. was responsible for clinical assessment, rehabilitation planning, outcome measurement, and manuscript preparation.

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