Perspective
Volume 16:01, 2026

Journal of Clinical Case Reports

ISSN: 2165-7920

Open Access

Neglected Achilles Ruptures: Gait, Function, and Outcomes

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Introduction

This report details a unique case of a neglected Achilles tendon rupture in a pediatric patient, highlighting the diagnostic challenges associated with chronic tears in this age group. The prolonged gait instability and pain experienced by the patient were initially attributed to other musculoskeletal issues, which delayed the recognition of the primary Achilles injury [1].

Chronic Achilles tendinopathy and partial ruptures can present with subtle gait disturbances, making diagnosis difficult, particularly in the absence of a clear history of trauma. This review explores the diagnostic challenges and biomechanical consequences of chronic Achilles injuries in active individuals [2].

The sequelae of neglected Achilles tendon ruptures can include persistent pain, weakness, and an altered gait pattern characterized by reduced ankle dorsiflexion and increased forefoot loading. This article examines the functional impact of untreated Achilles tendon injuries, emphasizing how prolonged non-operative management can lead to irreversible changes in muscle architecture and tendon elasticity [3].

Pediatric Achilles tendon injuries, although less common than in adults, can occur and may be misdiagnosed or managed conservatively with suboptimal outcomes. This study reviews the incidence, etiology, and management of Achilles tendon ruptures in children and adolescents [4].

Chronic gait instability following a neglected Achilles tendon rupture can significantly impact a patient's functional mobility and quality of life. This observational study investigates the long-term biomechanical adaptations in gait for individuals with untreated or inadequately treated Achilles tendon injuries [5].

The differential diagnosis for chronic ankle pain and gait disturbances in children is extensive. This article provides a comprehensive overview of common pediatric ankle pathologies, stressing the importance of a thorough history and physical examination to identify rarer but significant conditions like neglected Achilles tendon ruptures [6].

Surgical reconstruction of chronic Achilles tendon ruptures aims to restore the length and strength of the musculotendinous unit. This study evaluates the outcomes of delayed surgical repair for neglected Achilles tendon injuries, focusing on functional recovery, return to activity, and complication rates [7].

Gait analysis serves as a valuable tool for objectively assessing the functional deficits associated with chronic Achilles tendon ruptures. This research employs three-dimensional motion capture to quantify gait parameters in patients with neglected Achilles tendon injuries, comparing them to healthy controls [8].

The long-term functional outcomes of pediatric Achilles tendon ruptures, particularly those that are neglected, are not yet well-defined. This retrospective study aims to assess the long-term functional status, including gait and participation in physical activities, of pediatric patients who sustained Achilles tendon ruptures and were managed non-operatively or with delayed surgical intervention [9].

The pathophysiology of chronic Achilles tendon injuries involves degenerative changes and scar tissue formation, which can lead to persistent pain and functional deficits. This review discusses the histological and biochemical alterations that occur in chronically injured Achilles tendons and how these changes contribute to impaired healing and altered biomechanical properties [10].

Description

This case report highlights a unique presentation of a neglected Achilles tendon rupture in a pediatric patient, emphasizing the diagnostic difficulties in identifying chronic tears within this age group. The patient exhibited persistent gait instability and pain, symptoms often misattributed to other musculoskeletal issues, thus delaying the accurate diagnosis of the Achilles injury. The report underscores the necessity of maintaining a high index of suspicion for tendon injuries in children presenting with ongoing gait abnormalities and recognizes that delayed diagnosis can result in significant functional deficits. Furthermore, it explores management strategies for such neglected ruptures in pediatric populations, considering both surgical and non-surgical interventions and their long-term implications on biomechanics and quality of life [1].

Chronic Achilles tendinopathy and partial ruptures can manifest as subtle gait disturbances, posing diagnostic challenges, especially when there is no recollection of past trauma. This review delves into the diagnostic hurdles and biomechanical consequences of chronic Achilles injuries in active individuals. It stresses the importance of meticulous clinical examination and advanced imaging techniques to differentiate between tendinopathy, partial tears, and complete ruptures, particularly when symptoms are long-standing. The review also addresses management considerations for chronic Achilles pathology, with a focus on functional recovery and the athlete's return to sport [2].

The functional consequences of neglected Achilles tendon ruptures can include chronic pain, muscle weakness, and an altered gait pattern characterized by diminished ankle dorsiflexion and increased reliance on the forefoot. This article investigates the functional impact of untreated Achilles tendon injuries, highlighting how prolonged non-operative management can precipitate irreversible changes in muscle architecture and tendon elasticity. It accentuates the critical importance of timely intervention to restore optimal biomechanics and prevent long-term disabil-

ity [3].

Achilles tendon ruptures, though less prevalent in children than in adults, can occur and are susceptible to misdiagnosis or conservative management that yields suboptimal outcomes. This study provides a comprehensive review of the incidence, etiology, and management of Achilles tendon ruptures in pediatric and adolescent populations. It emphasizes that a delayed diagnosis of a chronic rupture in a young, active patient can lead to persistent gait instability and an elevated risk of re-rupture if not adequately addressed. Surgical reconstruction is frequently considered for chronic cases to effectively restore ankle function [4].

Chronic gait instability resulting from a neglected Achilles tendon rupture can profoundly affect a patient's functional mobility and overall quality of life. This observational study meticulously examines the long-term biomechanical adaptations in gait patterns observed in individuals with untreated or inadequately treated Achilles tendon injuries. The findings suggest the presence of compensatory mechanisms, such as an increased reliance on the forefoot and altered stride length, which may ultimately lead to secondary musculoskeletal issues. The study strongly advocates for early and effective management to mitigate these long-term detrimental effects [5].

The differential diagnosis for chronic ankle pain and gait disturbances in pediatric patients is broad, encompassing a range of potential conditions. This article offers a detailed overview of prevalent pediatric ankle pathologies, underscoring the significance of a thorough patient history and a comprehensive physical examination to identify rarer yet critical conditions, such as neglected Achilles tendon ruptures. It elucidates how prolonged, undiagnosed Achilles injuries can precipitate adaptive gait changes and increase the likelihood of functional impairment if not promptly addressed [6].

Surgical reconstruction for chronic Achilles tendon ruptures is primarily aimed at restoring the length and strength of the injured musculotendinous unit. This study critically evaluates the outcomes associated with delayed surgical repair for neglected Achilles tendon injuries, with a specific focus on functional recovery, the patient's return to activity, and the incidence of complications. The authors emphasize that while surgical intervention can indeed improve gait and alleviate pain, the extent of functional recovery is frequently contingent upon the chronicity of the rupture and the degree of muscle atrophy and fibrosis present at the time of surgery [7].

Gait analysis represents a highly valuable tool for the objective assessment of functional deficits associated with chronic Achilles tendon ruptures. This research utilizes three-dimensional motion capture technology to quantify specific gait parameters in patients diagnosed with neglected Achilles tendon injuries, comparing these findings against those of healthy control subjects. The study successfully identifies distinct kinematic and kinetic alterations that contribute to the observed gait instability, including reduced push-off power and increased knee flexion during the stance phase. These quantified findings strongly support the necessity for developing and implementing targeted rehabilitation strategies [8].

The long-term functional outcomes following pediatric Achilles tendon ruptures, particularly those that are neglected, remain incompletely defined. This retrospective study seeks to meticulously assess the long-term functional status, encompassing gait mechanics and participation in physical activities, of pediatric patients who experienced Achilles tendon ruptures and subsequently underwent nonoperative management or delayed surgical intervention. The gathered evidence indicates that chronic gait instability and limitations in physical function are common sequelae, thereby reinforcing the critical importance of timely and appropriate treatment interventions [9].

The pathophysiology underlying chronic Achilles tendon injuries involves a complex interplay of degenerative changes and the formation of scar tissue, which collectively contribute to persistent pain and functional deficits. This review thoroughly discusses the histological and biochemical alterations that manifest in chronically injured Achilles tendons and elucidates how these pathological changes result in impaired healing processes and compromised biomechanical properties. A comprehensive understanding of these underlying pathophysiological processes is paramount for the development of effective therapeutic strategies for neglected ruptures and, ultimately, for improving patient outcomes [10].

Conclusion

This collection of research focuses on neglected Achilles tendon ruptures, particularly in pediatric and adult populations, and their significant impact on gait and function. Chronic ruptures present diagnostic challenges due to subtle symptoms and can lead to persistent pain, weakness, and altered biomechanics. Delayed diagnosis in children can result in long-term functional deficits, necessitating careful clinical evaluation and advanced imaging. Management strategies, including surgical reconstruction, aim to restore tendon length and strength, although outcomes can be influenced by the chronicity of the injury and the extent of tissue degeneration. Gait analysis provides objective measures of functional impairment, guiding rehabilitation efforts. Understanding the underlying pathophysiology of chronic injury is crucial for developing effective treatments to improve patient outcomes and quality of life.

Acknowledgement

None.

Conflict of Interest

None.

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How to cite this article: Al-Zahra, Fatima. "Neglected Achilles Ruptures: Gait, Function, and Outcomes." *J Clin Case Rep* 16 (2026):1705.

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Received: 01-Jan-2026, Manuscript No. jccr-26-188951; **Editor assigned:** 05-Jan-2026, PreQC No. P-188951; **Reviewed:** 19-Jan-2026, QC No. Q-188951; **Revised:** 22-Jan-2026, Manuscript No. R-188951; **Published:** 29-Jan-2026, DOI: 10.37421/2165-7920.2026.16.1705