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Flat Feet Causing Chronic Tendon Pain

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ABSTRACT

This case report explores the often-overlooked connection between flat feet and chronic tendon pain, particularly after prolonged activities like walking. It highlights the importance of considering biomechanical factors in the differential diagnosis of musculoskeletal pain, emphasizing the potential benefits of targeted interventions for a seemingly simple anatomical variation.

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INTRODUCTION

Flat feet, or pes planus, is a prevalent podiatric condition characterized by a diminished or absent arch in the sole of the foot. While flat feet are often asymptomatic and well-tolerated, a significant subset of individuals with this anatomical variation experiences pain and discomfort, impacting their daily activities and overall quality of life. This article endeavors to provide a thorough exploration of the pain associated with flat feet, addressing the multifaceted aspects of its etiology, clinical manifestations, and evolving management strategies (1-4).

Pain related to flat feet represents a complex interplay of biomechanical abnormalities, muscular imbalances, and structural variations within the foot. Understanding the diverse factors contributing to flat feet pain is essential for healthcare providers, as it informs tailored interventions that extend beyond symptom alleviation to address the underlying causes. This comprehensive review aims to synthesize current knowledge on the various types of pain associated with flat feet, ranging from arch discomfort to ankle, knee, and lower back pain, offering a holistic perspective on the clinical implications of this prevalent condition (5-8).

Throughout the article, we will explore the epidemiology of flat feet pain, identifying risk factors and potential correlations with age, genetics, and comorbidities. Additionally, we will delve into the evolving landscape of diagnostic modalities, highlighting the importance of a comprehensive clinical

assessment and the role of imaging techniques in elucidating underlying pathologies.

Here it was aimed to present a gastric ulcer case recovered with anti-anxiety treatment.

CASE PRESENTATION

A 42-year-old woman presented with a three-month history of bilateral Achilles tendon pain, worsening significantly after walking for more than 30 minutes. She described the pain as a sharp, stabbing sensation at the insertion points of the tendons, accompanied by occasional stiffness and difficulty with plantar flexion.

Past medical history revealed obesity and occasional knee discomfort, but no previous episodes of tendon pain. Physical examination confirmed bilateral pes planus with hyperpronation during gait analysis. No overt signs of inflammation or tendon thickening were observed.

Initial treatment focused on pain management with ice, non-steroidal anti-inflammatory drugs (NSAIDs), and stretching exercises. However, the pain persisted, significantly impacting the patient's daily activities and exercise routine.

Further investigation, including imaging studies, ruled out other potential causes of tendon pain, such as tendinitis, bursitis, or stress fractures. Given the persistent pain and strong

biomechanical correlation, orthotic shoe inserts designed to support the arches and correct hyperpronation were recommended.

DISCUSSION

Flat feet, also known as pes planus, can lead to biomechanical alterations during gait, placing excessive stress on the Achilles tendons. The lack of an arch allows the talus bone to tilt inwards, causing excessive pronation and stretching of the Achilles tendon, potentially leading to inflammation, micro-tears, and chronic pain (4-7).

This case emphasizes the importance of considering biomechanical factors in the differential diagnosis of musculoskeletal pain, particularly chronic tendon pain. Flat feet, a seemingly benign anatomical variation, can significantly impact gait and contribute to various musculoskeletal problems, including: Tendon pain; as seen in this case, hyperpronation stresses the Achilles and other tendons, increasing the risk of pain and inflammation. Plantar fasciitis; flat feet can overload the plantar fascia, leading to heel pain and discomfort. Ankle sprains; the unstable ankle joint due to flat feet makes it more susceptible to sprains and injuries. Knee pain; pronation can affect knee alignment, leading to pain and discomfort in the patellofemoral joint (6-9).

Early recognition and management of flat feet can help prevent and alleviate musculoskeletal complications. The benefits of early intervention include: Addressing the underlying biomechanical factor through orthotic supports or custom footwear can significantly reduce tendon pain and other musculoskeletal discomfort. Orthotics can correct pronation and stabilize the ankle joint, leading to a more efficient and pain-free gait. Addressing flat feet allows individuals to participate in physical activities and exercise without pain limitations (10-13).

As the medical community continues to refine its understanding of flat feet and associated pain, this review seeks to contribute valuable insights to the existing body of literature. By exploring the intricate relationship between foot anatomy, biomechanics, and pain, we aim to foster a nuanced approach to the evaluation and management of flat feet, ultimately enhancing patient outcomes and optimizing the delivery of care for those grappling with the challenges of flat feet-related pain (10-15).

This case report serves as a reminder that seemingly minor anatomical variations, like flat feet, can have significant consequences for musculoskeletal health. By incorporating biomechanical assessment into the diagnostic process and exploring targeted interventions like orthotics, we can unlock a world of pain relief and enhanced mobility for individuals struggling with chronic tendon pain and other musculoskeletal complaints.

REFERENCES

1. Evans AM, Rome K, Carroll M, Hawke F. Foot orthoses for treating paediatric flat feet. *Cochrane Database Syst Rev.* 2022;1(1):CD006311. Published 2022 Jan 26. doi:10.1002/14651858.CD006311.pub4
2. Evans AM, Rome K, Carroll M, Hawke F. Foot orthoses for treating paediatric flat feet. *Cochrane Database Syst Rev.* 2022;1(1):CD006311. Published 2022 Jan 14. doi:10.1002/14651858.CD006311.pub3
3. Evans AM, Rome K. A Cochrane review of the evidence for non-surgical interventions for flexible pediatric flat feet. *Eur J Phys Rehabil Med.* 2011;47(1):69-89.
4. Banwell HA, Paris ME, Mackintosh S, Williams CM. Paediatric flexible flat foot: how are we measuring it and are we getting it right? A systematic review. *J Foot Ankle Res.* 2018;11:21. Published 2018 May 30. doi:10.1186/s13047-018-0264-3
5. Carr JB 2nd, Yang S, Lather LA. Pediatric Pes Planus: A State-of-the-Art Review. *Pediatrics.* 2016;137(3):e20151230. doi:10.1542/peds.2015-1230
6. Iijima H, Ohi H, Isho T, et al. Association of bilateral flat feet with knee pain and disability in patients with knee osteoarthritis: A cross-sectional study. *J Orthop Res.* 2017;35(11):2490-2498. doi:10.1002/jor.23565
7. Deu RS, Coslick AM, Dreher G. Tendinopathies of the Foot and Ankle. *Am Fam Physician.* 2022;105(5):479-486.
8. Yurt Y, Şener G, Yakut Y. The effect of different foot orthoses on pain and health related quality of life in painful flexible flat foot: a randomized controlled trial. *Eur J Phys Rehabil Med.* 2019;55(1):95-102. doi:10.23736/S1973-9087.18.05108-0
9. Dars S, Uden H, Banwell HA, Kumar S. The effectiveness of non-surgical intervention (Foot Orthoses) for paediatric flexible pes planus: A systematic review: Update. *PLoS One.* 2018;13(2):e0193060. Published 2018 Feb 16. doi:10.1371/journal.pone.0193060
10. Herchenröder M, Wilfling D, Steinhäuser J. Evidence for foot orthoses for adults with flatfoot: a systematic review. *J Foot Ankle Res.* 2021;14(1):57. Published 2021 Nov 29. doi:10.1186/s13047-021-00499-z
11. Hoang NT, Chen S, Chou LW. The Impact of Foot Orthoses and Exercises on Pain and Navicular Drop for Adult Flatfoot: A Network Meta-Analysis. *Int J Environ Res Public Health.* 2021;18(15):8063. Published 2021 Jul 29. doi:10.3390/ijerph18158063
12. Gross KD, Felson DT, Niu J, et al. Association of flat feet with knee pain and cartilage damage in older adults. *Arthritis Care Res (Hoboken).* 2011;63(7):937-944. doi:10.1002/acr.20431
13. Dare DM, Dodwell ER. Pediatric flatfoot: cause, epidemiology, assessment, and treatment. *Curr Opin Pediatr.* 2014;26(1):93-100. doi:10.1097/MOP.0000000000000039
14. Unver B, Erdem EU, Akbas E. Effects of Short-Foot Exercises on Foot Posture, Pain, Disability, and Plantar Pressure in Pes Planus. *J Sport Rehabil.* 2019;29(4):436-440. Published 2019 Oct 18. doi:10.1123/jsr.2018-0363
15. Flores DV, Mejía Gómez C, Fernández Hernando M, Davis MA, Pathria MN. Adult Acquired Flatfoot Deformity: Anatomy, Biomechanics, Staging, and Imaging Findings. *Radiographics.* 2019;39(5):1437-1460. doi:10.1148/rg.2019190046