proceedings

Abstract

Anatomical and Clinical Integration in the Diagnosis of Piriformis Syndrome: A Systematic Review and Cadaveric Findings †

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† Presented at the 6th International Congress on Health Innovation—INOVATEC 2025, Hybrid, 21–23 November 2025.

Keywords: piriformis syndrome; variations; dissection

Introduction: Piriformis syndrome (PS) is a compressive neuropathy caused by sciatic nerve irritation due to its relationship with the piriformis muscle. Anatomical variations, such as early sciatic nerve division or its passage through the muscle, may predispose individuals to compression and characteristic symptoms. This study reviews anatomical and clinical evidence on PS, emphasizing the integration of anatomical findings, diagnostic methods, and therapeutic strategies. **Methodology**: A systematic review was performed using Google Scholar, SciELO, and PubMed databases to identify studies on sciatic-nerve anatomical variations, electromyography (EMG), and imaging in PS. Fifteen articles published between 2019 and 2025 were selected. Additionally, cadaveric dissection of the gluteal region was conducted, with photographic documentation, to establish anatomical–clinical correlations with the literature findings. The study was approved by the Medical Ethics Committee for the use of cadaveric material (Opinion No. 7.318.071), Faculty of Medicine, University of Brasília. **Results**: The reviewed studies describe distinct sciatic-nerve pathways relative to the piriformis muscle, the most common being its course inferior to the muscle, as verified in dissection. This configuration is susceptible to compression within the narrow anatomical corridor. EMG correlates with the anatomical and functional data, revealing delayed H-reflex and reduced amplitude in compression cases. Magnetic resonance imaging and ultrasonography enhance anatomical assessment, detecting muscle hypertrophy, nerve-signal alterations, and excluding differential diagnoses. **Conclusions**: Diagnosis of PS requires anatomical–clinical integration. Cadaveric dissection demonstrates sciatic nerve variants, improving diagnostic accuracy and supporting safer, more effective treatment strategies.

Academic Editors: Andreanne Vasconcelos, Amílcar Damazo and José Roberto Leite

Published: 21 February 2026

Author Contributions: Conceptualization, S.C.d.S. and C.N.A.; methodology, S.C.d.S.; investigation, S.C.d.S., A.C.F.L., I.D.S.V.P., L.H.A.T., L.G. and M.G.C.S.; data curation, S.C.d.S.; writing—original draft preparation, S.C.d.S.; writing—review and editing, A.C.F.L., I.D.S.V.P., L.H.A.T., L.G., M.G.C.S. and C.N.A.; supervision, C.N.A.; project administration, C.N.A. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Review Board of Faculty of Medicine, University of Brasília (Universidade de Brasília) (Opinion No. 7.318.071, approved on 25 December 2024).

Informed Consent Statement: Patient consent was waived because the study involved cadaveric specimens with no identifiable personal data, and consent for their use had already been granted and documented as part of the approved ethical protocol.

Data Availability Statement: The data presented in this study are available upon request from the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

https://doi.org/10.3390/proceedings2026137015