

Clinical-Medical Image

Sonographic Alterations of the Phrenic Nerve in ALS Patients: Correlation with Clinical and Neurophysiological Observations

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Case Study

Phrenic nerve sonography has emerged as a valuable tool for evaluating respiratory function in patients with amyotrophic lateral sclerosis, offering insights that complement clinical and neurophysiological assessments. ALS, a progressive neurodegenerative disease, affects motor neurons, including those responsible for diaphragmatic function, often leading to respiratory complications. Understanding the alterations in the phrenic nerve provides critical information on disease progression and respiratory involvement. Recent studies highlight significant sonographic changes in the phrenic nerve among ALS patients, characterized by reduced cross-sectional area and altered echogenicity. These findings correlate with clinical parameters such as disease duration, respiratory symptoms, and severity of motor impairment. Neurophysiological assessments, including nerve conduction studies and diaphragm electromyography, further validate these observations by demonstrating impaired phrenic nerve conduction and reduced diaphragmatic activity. Combining sonographic and neurophysiological data offers a more comprehensive evaluation of respiratory dysfunction in ALS.

The integration of phrenic nerve sonography into routine ALS management provides several benefits. It serves as a non-invasive, reproducible method to monitor disease progression, particularly in its impact on respiratory muscles. Additionally, sonography can detect early phrenic nerve involvement, even before overt respiratory symptoms appear, enabling timely interventions such as non-invasive ventilation. These insights underscore the potential of sonography to enhance diagnostic accuracy and improve patient care.

In conclusion, phrenic nerve sonography, in conjunction with clinical and neurophysiological findings, offers valuable information on respiratory involvement in ALS. Its ability to detect early alterations and monitor progression positions it as a critical tool in managing this complex disease. Further research is warranted to refine sonographic techniques and explore their prognostic value in larger, multicenter studies, paving the way for more personalized and effective management strategies for ALS patients [1,2].

Keywords: Phrenic nerve; Respiratory dysfunction; Diaphragm electromyography

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None.

Conflict of Interest

None.

References

1. Laucius O, Drūteika J, Balnytė R, Palačionytė J and Ališauskienė, M, et al (2024). Phrenic Nerve Sonography Alterations in Patients with ALS: Insight with Clinical and Neurophysiological Findings. *J Clin Med* 13(21) 6302.
2. Pinto S, Alves P, Swash M and de Carvalho, M (2017). Phrenic nerve stimulation is more sensitive than ultrasound measurement of diaphragm thickness in assessing early ALS progression. *NCCN* 47(1) 69-73.

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