Teaching NeuroImages: The Motor Band Sign in Amyotrophic Lateral Sclerosis

Authors: Joshua Budhu, MD; Joseph Rosenthal, MD, PhD; Erika Williams, MD, PhD; Tracey Milligan, MD

Joshua Budhu, Brigham and Women’s Hospital, Harvard Medical School, Department of Neurology, Boston, Massachusetts, USA
Joseph Rosenthal, Brigham and Women’s Hospital, Harvard Medical School, Department of Neurology, Boston, Massachusetts, USA
Erika Williams, Brigham and Women’s Hospital, Harvard Medical School, Department of Neurology, Boston, Massachusetts, USA
Tracey Milligan, Brigham and Women’s Hospital, Harvard Medical School, Department of Neurology, Boston, Massachusetts, USA

Neurology® Published Ahead of Print articles have been peer reviewed and accepted for publication. This manuscript will be published in its final form after copyediting, page composition, and review of proofs. Errors that could affect the content may be corrected during these processes.
Counts:

Title: characters 65
Text: 129 words
References: 2
Figures: 1

Search Terms: Motor band sign, amyotrophic lateral sclerosis, magnetic resonance imaging, susceptibility weighted imaging

Corresponding Author: Joshua Budhu, MD, E-mail address: jbudhu@mgh.harvard.edu

Author Disclosures:

Joshua Budhu reports no disclosures.
Joseph Rosenthal reports no disclosures.
Erika Williams reports no disclosures.
Tracey Milligan reports no disclosures.

Funding: No targeted funding
Teaching NeuroImages: The Motor Band Sign in Amyotrophic Lateral Sclerosis

A 71 year-old-woman presented with several months of progressive lower extremity weakness followed by bulbar weakness. On examination she had diffuse muscle atrophy, fasciculations, weakness, and hyperreflexia. A diagnosis of clinically definite ALS was made using El Escorial criteria. At the time of presentation and imaging she had both severe upper and lower motor neuron involvement. Her ALSFRS-R score was 15, indicating advanced disease. Her brain MRI showed increased signal on susceptibility weighted imaging, consistent with superficial siderosis along the central sulcus (figure). This finding has been named the “motor band sign”.\(^1\) The intracellular iron may be from microglial phagocytosis of degenerated neurons in the motor strip.\(^2\) Careful scrutiny of susceptibility weighted imaging should be performed when considering motor neuron disease, as this can be helpful in making the diagnosis.

Figure: MRI Brain without Contrast

Susceptibility Weighted Imaging (SWI) on 1.5 Tesla MRI demonstrating bilateral symmetric hemosiderin deposition along the central sulcus, layering the precentral gyrus
Appendix 1:

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joshua Budhu</td>
<td>Brigham and Women’s Hospital, Harvard Medical School</td>
<td>Conception, writing, critical revision, and final approval of the text and images</td>
</tr>
<tr>
<td>Joseph Rosenthal</td>
<td>Brigham and Women’s Hospital, Harvard Medical School</td>
<td>Critical revision and final approval of all text and images</td>
</tr>
<tr>
<td>Erika Williams</td>
<td>Brigham and Women’s Hospital, Harvard Medical School</td>
<td>Critical revision and final approval of all text and images</td>
</tr>
<tr>
<td>Tracey Milligan</td>
<td>Brigham and Women’s Hospital, Harvard Medical School</td>
<td>Critical revision and final approval of all text and images</td>
</tr>
</tbody>
</table>

Teaching Slides - [http://links.lww.com/WNL/B221](http://links.lww.com/WNL/B221)

References


Teaching NeuroImages: The Motor Band Sign in Amyotrophic Lateral Sclerosis
Neurology published online September 14, 2020
DOI 10.1212/WNL.0000000000010848

This information is current as of September 14, 2020

Updated Information & Services
including high resolution figures, can be found at:
http://n.neurology.org/content/early/2020/09/14/WNL.0000000000010848.citation.full

Subspecialty Collections
This article, along with others on similar topics, appears in the following collection(s):
All Clinical Neurology
http://n.neurology.org/cgi/collection/all_clinical_neurology
Amyotrophic lateral sclerosis
http://n.neurology.org/cgi/collection/amyotrophic_lateral_sclerosis_
Anterior nerve cell disease
http://n.neurology.org/cgi/collection/anterior_nerve_cell_disease
MRI
http://n.neurology.org/cgi/collection/mri

Permissions & Licensing
Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
http://www.neurology.org/about/about_the_journal#permissions

Reprints
Information about ordering reprints can be found online:
http://n.neurology.org/subscribers/advertise

Neurology ® is the official journal of the American Academy of Neurology. Published continuously since 1951, it is now a weekly with 48 issues per year. Copyright © 2020 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.