Bilateral Thalamic Lesions Associated With Atezolizumab-Induced Encephalitis: A Follow-up Report With Autopsy Findings

Author(s):
Haruo Nishijima, MD, PhD1, 2; Tomoya Kon, MD, PhD3; Yusuke Seino, MD, PhD3; Norito Yagihashi, MD, PhD4; Chieko Suzuki, MD, PhD1; Takashi Nakamura, MD1, 2; Hisashi Tanaka, MD, PhD5; Yui Sakamoto, MD5; Koichi Wakabayashi, MD, PhD7; Masahiko Tomiyama, MD, PhD1

Corresponding Author:
Haruo Nishijima
haruonishijima@gmail.com

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Affiliation Information for All Authors: 1. Department of Neurology, Institute of Brain Science, Hirosaki University Graduate School of Medicine, Hirosaki City, Aomori, Japan; 2. Department of Neurology, Hirosaki University Hospital, Hirosaki City, Aomori, Japan; 3. Department of Neurology, Hirosaki National Hospital, Hirosaki City, Aomori, Japan; 4. Division of Pathology and Clinical Laboratory, Hirosaki National Hospital, Hirosaki City, Aomori, Japan; 5. Department of Respiratory Medicine, Hirosaki University Graduate School of Medicine, Hirosaki City, Aomori, Japan; 6. Department of Neuropsychiatry, Hirosaki University Graduate School of Medicine, Hirosaki City, Aomori, Japan; 7. Department of Neuropathology, Institute of Brain Science, Hirosaki University Graduate School of Medicine, Hirosaki City, Aomori, Japan.

Contributions:
Haruo Nishijima: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data; Study concept or design; Analysis or interpretation of data
Tomoya Kon: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data; Study concept or design; Analysis or interpretation of data
Yusuke Seino: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data
Norito Yagihashi: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data; Analysis or interpretation of data
Chieko Suzuki: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data
Takashi Nakamura: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data
Hisashi Tanaka: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data
Yui Sakamoto: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data
Koichi Wakabayashi: Drafting/revision of the manuscript for content, including medical writing for content; Study concept or design; Analysis or interpretation of data
Masahiko Tomiyama: Drafting/revision of the manuscript for content, including medical writing for content; Study concept or design; Analysis or interpretation of data

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Case Summary:

A 72-year-old woman was clinically diagnosed with atezolizumab-induced encephalitis. HER CLINICAL FEATURES WERE PREVIOUSLY DESCRIBED IN THIS JOURNAL AND HERE WE PRESENT THE AUTOPSY FINDINGS. She had been treated with atezolizumab, an immune check-point inhibitor (ICPI), due to a metastatic non-small cell lung cancer diagnosis. She received her final atezolizumab injection three weeks after encephalitis onset, and cancer therapy ceased. Although the bilateral thalamic lesions shrank after steroid pulse, intravenous immunoglobulin, and long-term oral steroid, the patient died due to aspiration pneumonia seven months after encephalitis onset. An autopsy revealed no evidence of cancer recurrence. Brain histological analyses revealed lymphocytic infiltration only into the thalamus, without infection or metastasis (Figure). Both B and T cell infiltration was identified accompanied by neuronal loss and thalamic gliosis. The T-cell infiltration was in-agreement with previous work describing ICPI-induced encephalitis, suggesting mechanistic-overlap with encephalitis/encephalopathy caused by paraneoplastic syndromes. Additionally, this case indicates that B-cells also contribute to inflammatory process.
### Appendix 1: Authors

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haruo Nishijima, MD, PhD</td>
<td>Hirosaki University Graduate School of Medicine, Hirosaki, Japan</td>
<td>Design and conceptualized study; patient care and acquisition of data; analyzed the data; drafted the manuscript for intellectual content</td>
</tr>
<tr>
<td>Tomoya Kon, MD, PhD</td>
<td>Hirosaki University Graduate School of Medicine, Hirosaki, Japan</td>
<td>Design and conceptualized study; patient care and acquisition of data; analyzed the data; revised the manuscript for intellectual content</td>
</tr>
<tr>
<td>Yusuke Seino, MD, PhD</td>
<td>Hirosaki National Hospital, Hirosaki, Japan</td>
<td>Patient care and acquisition of data; revised the manuscript for intellectual content</td>
</tr>
<tr>
<td>Norito Yagihashi, MD, PhD</td>
<td>Hirosaki National Hospital, Hirosaki, Japan</td>
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<td>Hirosaki University Graduate School of Medicine, Hirosaki, Japan</td>
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</tr>
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<td>Institution</td>
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</tr>
<tr>
<td>Yui Sakamoto, MD</td>
<td>Hirosaki University Graduate School of Medicine, Hirosaki, Japan</td>
<td>Patient care and acquisition of data; revised the manuscript for intellectual content</td>
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<td>Koishi Wakabayashi, MD, PhD</td>
<td>Hirosaki University Graduate School of Medicine, Hirosaki, Japan</td>
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</tr>
<tr>
<td>Masahiko Tomiyama, MD, PhD</td>
<td>Hirosaki University Graduate School of Medicine, Hirosaki, Japan</td>
<td>Interpreted the data; revised the manuscript for intellectual content</td>
</tr>
</tbody>
</table>
Figure Legend:

Histological brain findings

(A) Atrophy with myelin pallor in the right thalamus (arrows; Klüver–Barrera stain). (B) Perivascular lymphocyte infiltration (arrowhead) and marked neuronal loss and gliosis (asterisk; Hematoxylin stain). (C,D) Infiltrating lymphocytes were immune-positive for CD3 (C) and CD20 (D). Bars = 5 mm (A), 100 µm (B-D).
References


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