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

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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.
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Number of characters in title: 118

Abstract Word count: 0

Word count of main text: 155

References: 2

Figures: 1
Supplemental: Patient consent


Acknowledgements: We would like to thank Editage (www.editage.com) for English language editing.

Study Funding: The authors report no targeted funding

Disclosures: All the authors report no disclosures relevant to the manuscript.
Case Summary:

A 72-year-old woman was clinically diagnosed with atezolizumab-induced encephalitis.\textsuperscript{1}

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,\textsuperscript{2} 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>
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<tr>
<th>Name</th>
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<tbody>
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</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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Haruo Nishijima, Tomoya Kon, Yusuke Seino, et al.
Neurology published online November 19, 2021
DOI 10.1212/WNL.0000000000013091

This information is current as of November 19, 2021

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