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# Fatal Disseminated Powassan Virus Infection in Transplant Recipient, Pennsylvania, USA

## Appendix

**Appendix Table 1**. Laboratory results of CSF and peripheral blood tests

| Sample | Test | Result |
|---|---|---|
| CSF (HD 12) | Opening pressure | 21 cm $H_2O$ |
| | Red blood cell count | 2 (tube 1), 24 (tube 4) |
| | Total nucleated count | 127 (tube 1), 72 (tube 4) |
| | Neutrophils | 1% |
| | Lymphocytes | 82% |
| | Monocytes/macrophages | 17% |
| | Protein level | 117 mg/dL |
| | Glucose level | 49 mg/dL |
| | Culture | No growth |
| | Gram stain | No bacteria seen, moderate leukocytes |
| CSF (HD 7) | Opening pressure | 13 cm $H_2O$ |
| | Red blood cell count | 138 (tube 1), 44 (tube 4) |
| | Total nucleated count | 44 (tube 1), 205 (tube 4) |
| | Neutrophils | 82% |
| | Lymphocytes | 11% |
| | Monocytes/macrophages | 7% |
| | Protein level | 86 mg/dL |
| | Glucose level | 96 mg/dL |
| | Culture | No growth |
| | Gram stain | No bacteria seen, many leukocytes |
| | CSF metagenomics (Delve Bio) | No DNA viruses, RNA viruses, bacteria, fungi, or parasites detected |
| Peripheral blood (HD 7) | White cell count | 38.3 ($\times 10^3/\mu L$) |
| | % Segmented neutrophils | 81.3% |
| | % Band neutrophils | 1.9% |
| | % Metamyelocytes | 2.8% |
| | % Metamyelocytes | 2.8% |
| | % Lymphocytes | 3.7% |
| | % Monocytes | 7.5% |

HD, hospital day.

**Appendix Table 2.** Summary of antemortem and postmortem rabies testing

| Sample | Test | Result | Comment |
|---|---|---|---|
| Antemortem serum | Rabies IgG IFA | Positive | The general population is not vaccinated against rabies and is expected to be negative by IFA for IgG in serum and CSF specimens. |
| Antemortem serum | Rabies IgM IFA | Inconclusive* | No rabies IgM detected* |
| Antemortem serum | Rabies RFFIT | Positive (titer 1:390), rabies virus neutralizing antibodies detected | The general population is not vaccinated against rabies and is expected to be negative by RFFIT in serum and CSF. |
| Antemortem CSF | Rabies IgG IFA | Positive | The general population is not vaccinated against rabies and is expected to by negative by IFA for IgG in serum and CSF specimens. All persons (including vaccinated persons) are expected to be negative by IFA in CSF specimens. |
| Antemortem CSF | Rabies IgM IFA | Inconclusive* | No rabies IgM detected* |
| Antemortem CSF | Rabies RFFIT | Positive (titer 1:10), rabies virus neutralizing antibodies detected | The general population is not vaccinated against rabies and is expected to be negative by RFFIT in both serum and CSF. All persons (including vaccinated persons) are expected to be negative by IFA in CSF specimens. |
| Antemortem tissue (nape of neck) | Rabies antigen DFA | Inconclusive* | No rabies virus antigen detected* |
| Antemortem tissue (nape of neck) | Rabies qRT-PCR | Inconclusive* | No rabies virus RNA detected* |
| Antemortem saliva | Rabies qRT-PCR | Inconclusive* | No rabies virus RNA detected* |
| Postmortem brain | Rabies antigen DFA | Negative | No rabies virus antigen detected |
| Postmortem brain | Rabies qRT-PCR | Negative | No rabies virus RNA detected |
| Postmortem liver | Rabies qRT-PCR | Negative | No rabies virus RNA detected |
| Postmortem brain | Rabies IHC | Negative | |
| Postmortem lung | Rabies IHC | Negative | |
| Postmortem kidney | Rabies IHC | Negative | |
| Postmortem donor liver | Rabies IHC | Negative | |

DFA, direct fluorescent antibody; IFA, indirect immunofluorescence antibody; RFFIT, rapid fluorescent focus inhibition test.
*Condition of sample = antemortem serum, CSF, skin tissue (nape of neck), and saliva samples sent to CDC for rabies testing were initially lost in transit and were received thawed with no remaining dry ice after 5 d in transit. The results of negative tests were therefore reported as inconclusive.