

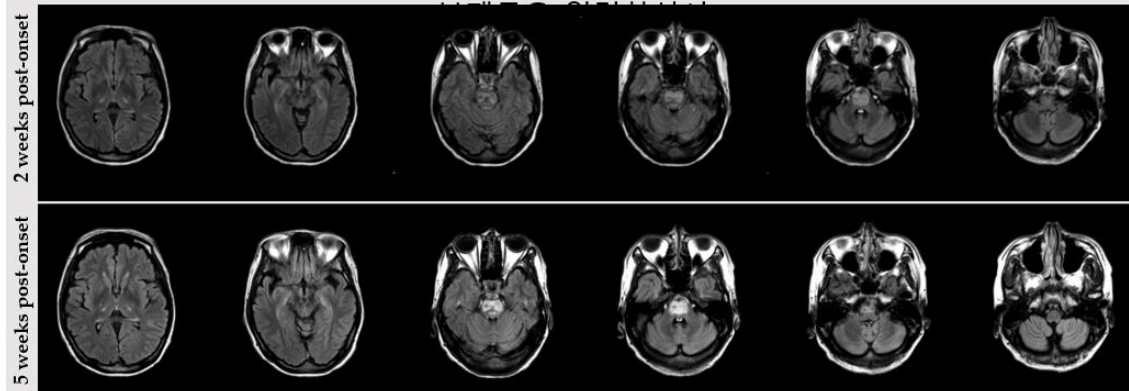


Figure S1. Serial MRI findings at 2 weeks and 5 weeks post-onset. Initial MRI at day 3 was unremarkable (not shown). The T2-weighted and FLAIR images on day 3 post-onset are unremarkable. At 2 weeks and 5 weeks post-onset, the MRI shows a high signal in the entire pons and symmetrical high signals in the posterior limb of the internal capsules and thalamus in both hemispheres, suggesting central pontine and extrapontine myelinolysis.

Abbreviation: MRI, magnetic resonance imaging; FLAIR, fluid-attenuated inversion recovery.

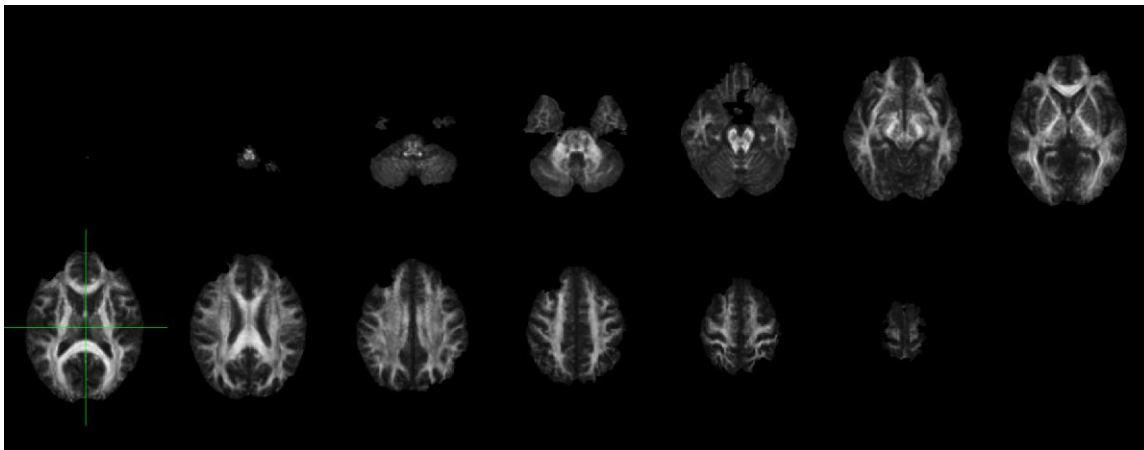


Figure S2. Mean fractional anisotropy (FA) map from the registered diffusion data (quality control). Visual inspection suggests overall anatomical alignment at the pons/brainstem level without obvious gross geometric warping or systematic displacement; however, subtle residual susceptibility distortion cannot be excluded.

Abbreviations: FA, fractional anisotropy.

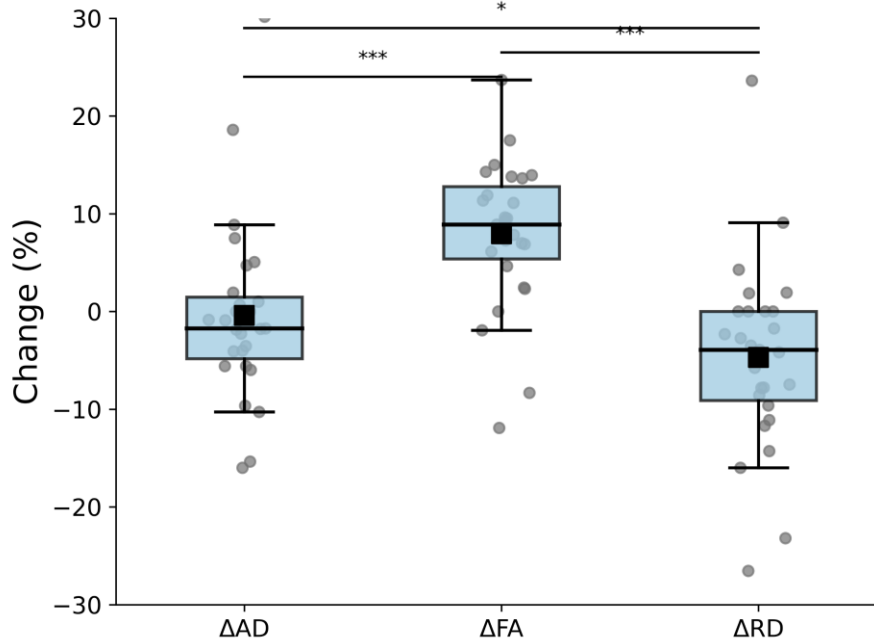


Figure S3. Magnitude of longitudinal changes across diffusion metrics. Percent change for each tract was computed as $\Delta\% = (6 \text{ months} - 7 \text{ weeks}) / (7 \text{ weeks}) \times 100\%$ for AD, FA, and RD ($n = 27$ tracts). Boxplots show the median and IQR, with whiskers extending to $1.5 \times$ IQR; each dot represents one tract, and squares indicate the mean. Because ΔAD , ΔFA , and ΔRD are repeated measures within the same tract units, differences among metrics were assessed using the Friedman test ($\chi^2(2) = 24.69$, $p = 4.35 \times 10^{-6}$), followed by paired Wilcoxon signed-rank tests with Bonferroni correction (FA vs AD: $p = 2.36 \times 10^{-4}$; FA vs RD: $p = 2.04 \times 10^{-6}$; RD vs AD: $p = 0.0176$). Abbreviations: AD, axial diffusivity; FA, fractional anisotropy; IQR, interquartile range; RD, radial diffusivity.

Table S1. Tract-level lesion classification using the directional, dual-threshold criterion at 7 weeks post-onset.

Tract category	AD (d, p, q)	RD (d, p, q)	FA (d, p, q)	Directional lesion (FDR)	Non-lesion deviation ($q \leq 0.05$)
M-cbll-p	-0.17, 0.8855, 0.9563	1.81, 0.1738, 0.3911	-1.35, 0.2862, 0.5201	No lesion	—
Pontine c-f	4.03, 0.0212, 0.1134	9.01, 0.0012, 0.0304	-0.52, 0.6584, 0.8338	Myelin (RD↑)	—
Genu CC	-0.87, 0.4703, 0.6876	3.74, 0.0270, 0.1249	-0.48, 0.6866, 0.8338	No lesion	—
Body CC	3.25, 0.0414, 0.1597	6.97, 0.0031, 0.0418	-0.62, 0.6018, 0.7609	Myelin (RD↑)	—
Splen CC	1.46, 0.2521, 0.4973	11.11, 0.0005, 0.0284	0.03, 0.9761, 0.9848	Myelin (RD↑)	—
Fornix	1.54, 0.2316, 0.4816	0.94, 0.4397, 0.6757	1.84, 0.1675, 0.3911	No lesion	—
CST	-1.81, 0.1733, 0.3911	-0.02, 0.9848, 0.9848	-0.97, 0.4269, 0.6403	No lesion	—
ML	2.02, 0.1387, 0.3605	3.13, 0.0462, 0.1733	-0.25, 0.8292, 0.9221	No lesion	—
Inf-cbll-p	0.74, 0.5341, 0.7609	4.03, 0.0212, 0.1134	-0.98, 0.4227, 0.6403	No lesion	—
Sup-cbll-p	4.92, 0.0109, 0.0790	2.88, 0.0582, 0.2018	-1.13, 0.3601, 0.6209	No lesion	—
Cerb-p	-2.85, 0.0598, 0.2018	6.22, 0.0048, 0.0421	-1.64, 0.2094, 0.4240	Myelin (RD↑)	—
A-IC	1.84, 0.1687, 0.3911	7.82, 0.0020, 0.0324	-0.36, 0.7620, 0.8817	Myelin (RD↑)	—
P-IC	-1.86, 0.1651, 0.3911	5.65, 0.0067, 0.0493	-1.29, 0.3036, 0.5201	Myelin (RD↑)	—
Retlen-IC	1.94, 0.1512, 0.3765	4.07, 0.0206, 0.1134	-0.03, 0.9814, 0.9848	No lesion	—
A-CR	0.80, 0.5065, 0.6954	6.05, 0.0052, 0.0421	-0.21, 0.8540, 0.9476	Myelin (RD↑)	—
S-CR	-1.05, 0.3906, 0.6403	4.81, 0.0117, 0.0790	-1.75, 0.1862, 0.3911	No lesion	—
P-CR	1.73, 0.1890, 0.3911	6.44, 0.0042, 0.0421	-0.99, 0.4178, 0.6403	Myelin (RD↑)	—
P-thala-R	4.13, 0.0196, 0.1134	8.44, 0.0015, 0.0304	-0.61, 0.6058, 0.7609	Myelin (RD↑)	—
Sag stratum	1.55, 0.2290, 0.4816	2.56, 0.0795, 0.2509	-0.51, 0.6644, 0.8338	No lesion	—

Ext-capsule	0.99, 0.4155, 0.6757	2.29, 0.1048, 0.3036	0.41, 0.7293, 0.8817	No lesion	—
Cing gyrus	6.27, 0.0046, 0.0421	0.85, 0.4804, 0.6876	-0.28, 0.8140, 0.9221	No lesion	AD↑
Cing Hip	0.17, 0.8854, 0.9563	2.48, 0.0867, 0.2601	0.99, 0.4171, 0.6403	No lesion	—
For-cres	-0.60, 0.6106, 0.8338	2.12, 0.1249, 0.3354	-1.15, 0.3536, 0.6209	No lesion	—
Sup-L-f	0.13, 0.9129, 0.9734	10.30, 0.0007, 0.0284	-0.71, 0.5537, 0.7609	Myelin (RD↑)	—
Sup-FO-f	-0.09, 0.9387, 0.9734	4.34, 0.0167, 0.1085	-0.72, 0.5451, 0.7609	No lesion	—
Ucni	-0.08, 0.9460, 0.9734	4.41, 0.0158, 0.1085	-1.59, 0.2200, 0.4240	No lesion	—
Tapetum	0.82, 0.4950, 0.6876	2.69, 0.0698, 0.2433	-1.77, 0.1818, 0.3911	No lesion	—

Notes: Directional lesions were defined by a dual-threshold criterion requiring (i) a prespecified directional effect size ($RD_d \geq 2.0$, $AD_d \leq -2.0$, or $FA_d \leq -2.0$) and (ii) Benjamini–Hochberg FDR–corrected Crawford–Howell significance within the 7-week family of tract–metric tests ($q \leq 0.05$). Non-lesion deviation, defined as significant effects (FDR-corrected $q \leq 0.05$) occurring in the non-prespecified direction, is not counted as directional lesions (Cingulate gyrus, $AD_d = 6.27$, $q = 0.0421$). Boldface indicates brainstem-related tracts.

Abbreviations: AD, axial diffusivity; d, standardized difference; FA, fractional anisotropy; FDR, false discovery rate; p, Crawford–Howell p value; q, FDR-adjusted p value; RD, radial diffusivity. The tract abbreviations are defined in the legend of Figure 2.