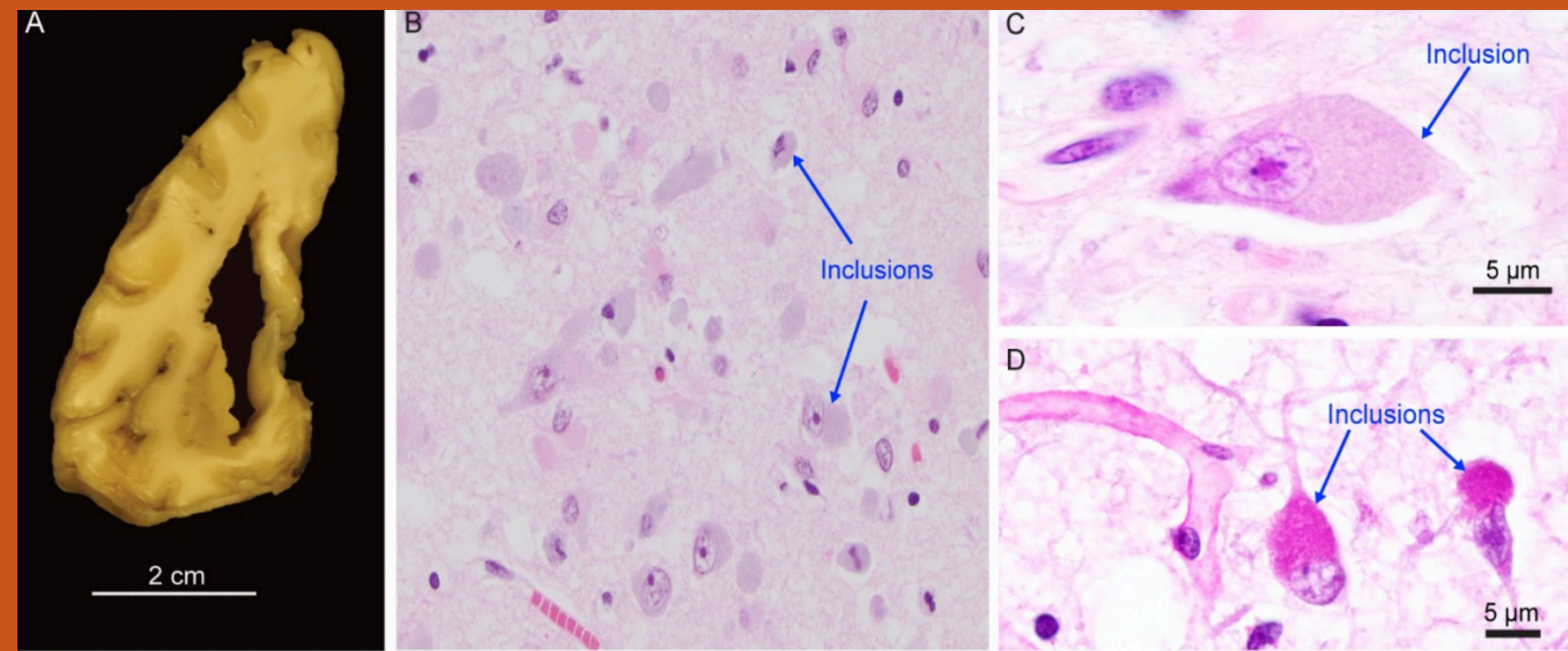
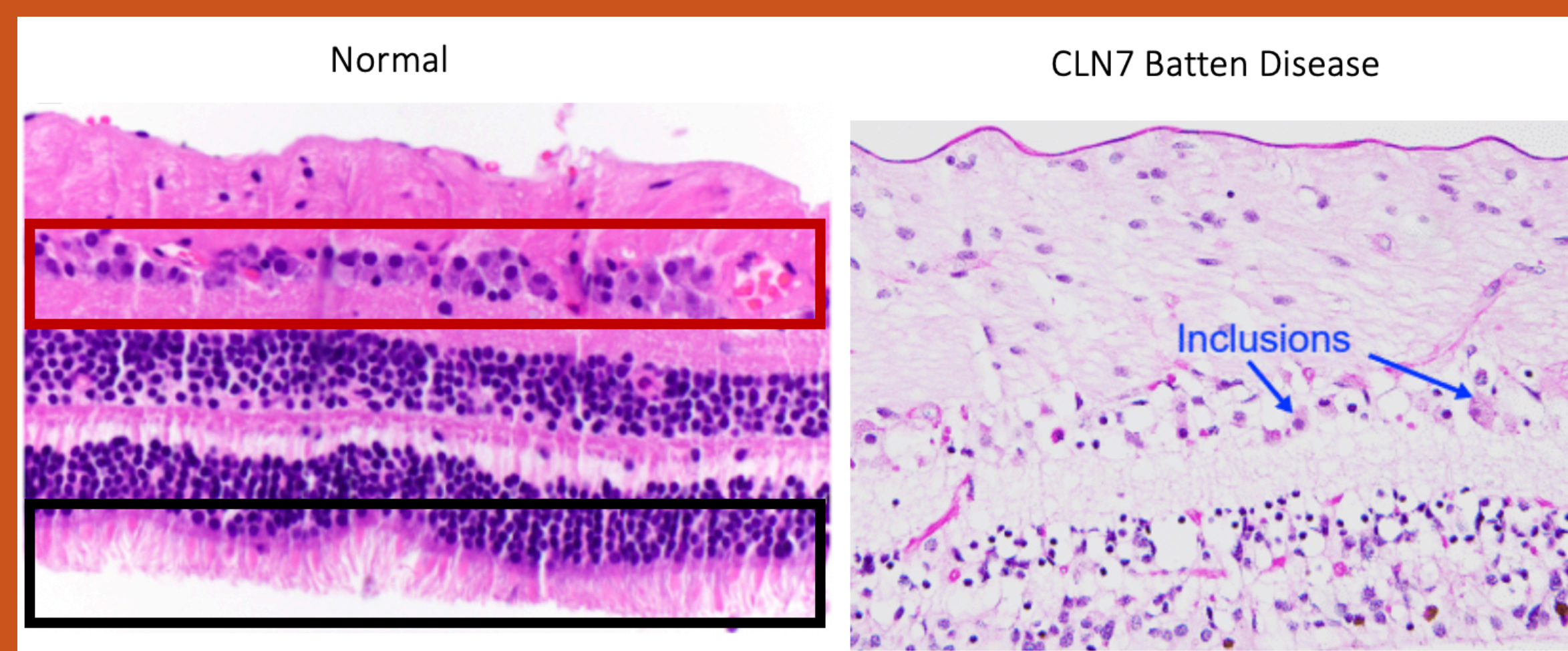


Neuropathology Findings



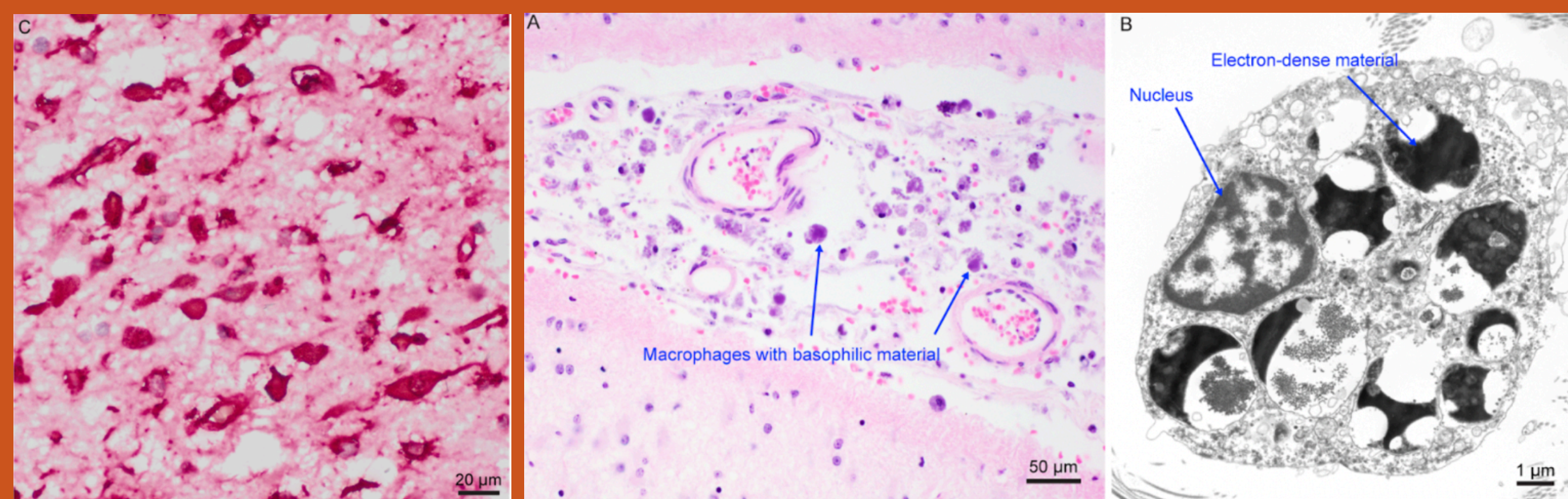
Brain Pathology Findings

- Left, formalin-fixed, coronal hemisphere (A)
- Neurons with intracytoplasmic inclusions in basal forebrain (B) and occipital cortex (B,D)



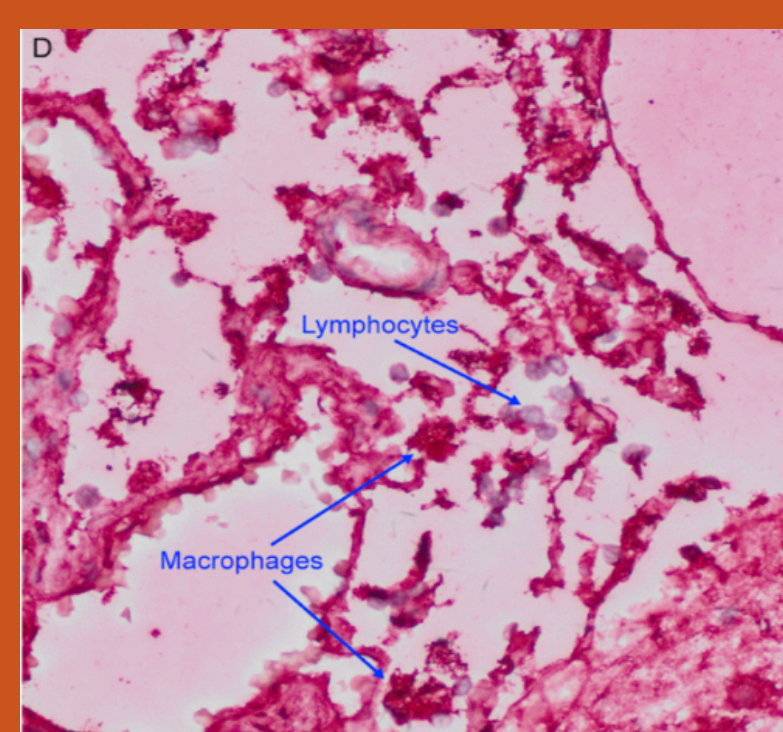
Retinal Pathology Findings

- Disorganization of retinal layers
- Scarring of the retina
- Loss of photoreceptor cells (black)
- Loss of ganglion cells (red) and ganglion cell inclusions



ASO-specific Findings

- miRNAscope staining demonstrated presence of ASO treatment in the brain parenchyma and leptomeninges
- Accumulation of macrophages with basophilic material in leptomeninges, correlated with electron-dense material on EM



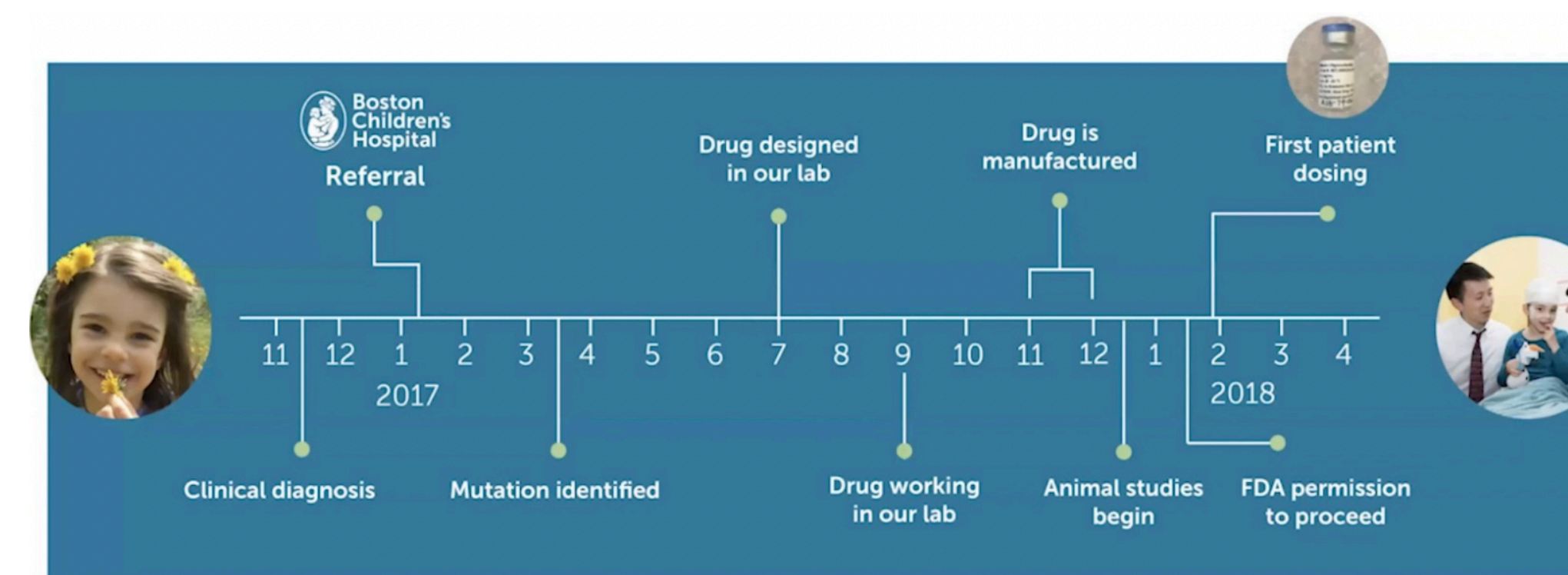
ASO Treatment of CLN7 Batten Disease: Neuropathology of Unique N=1 Trial

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University of California
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Background: Patient Case

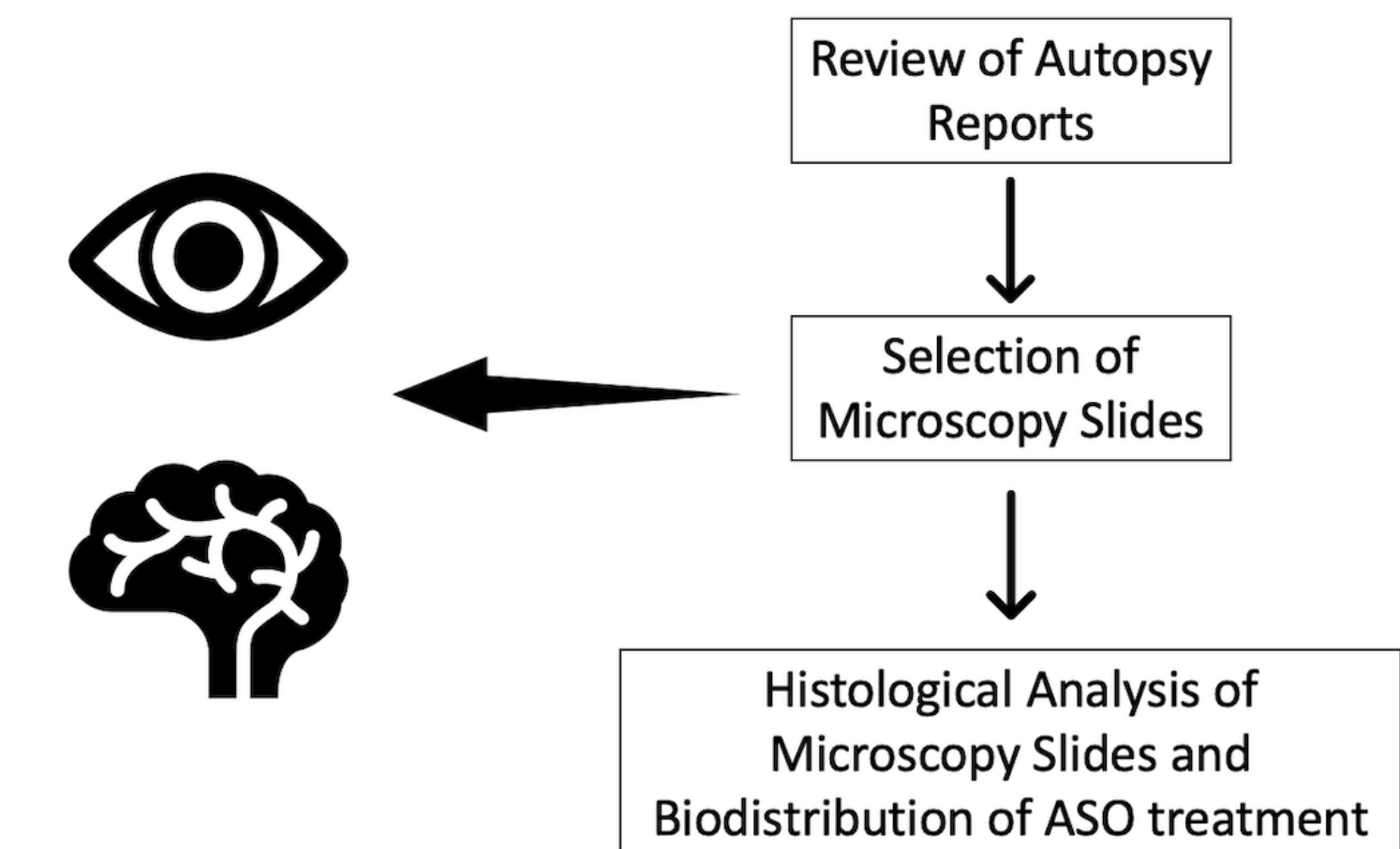


- This project is focused on a patient case of CLN7 Batten disease for which a patient-customized ASO therapy, *milasen*, was developed.
- CLN7 Batten disease arises from mutations in the MFSD8 gene.

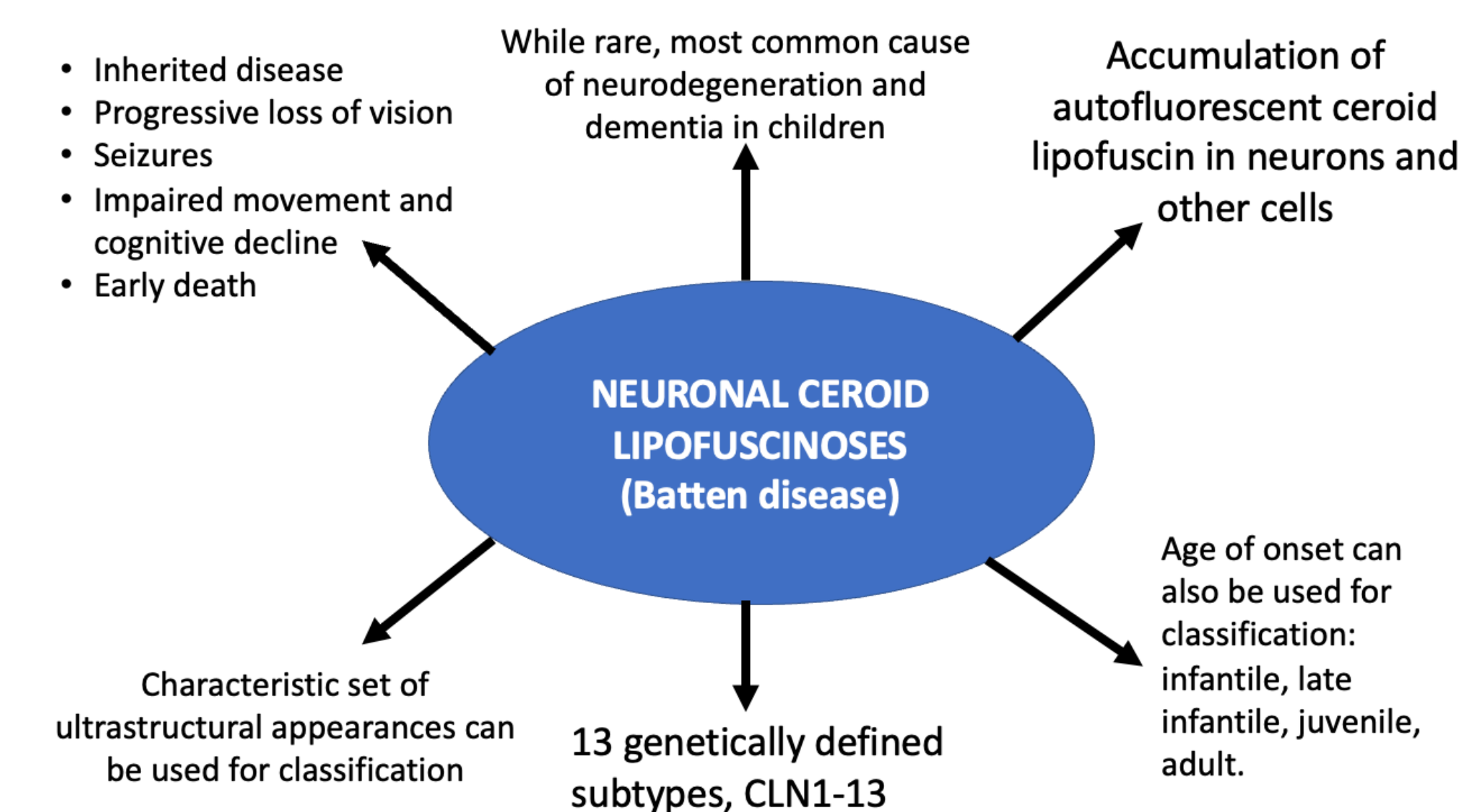
Reference: N Engl J Med 2019;381:1644-52. DOI: 10.1056/NEJMoa1813279

Objective and Methods

Objective: To describe the neuropathology (including eye pathology) of this case of CLN7 Batten Disease in the setting of novel and patient-centered treatment.



Background: Batten Disease



References: <https://www.ninds.nih.gov/health-information/disorders/neuronal-ceroid-lipofuscinosis-batten-disease>
Front Neurol. 2022 Mar 11;13:811686. doi: 10.3389/fneur.2022.811686.

Results/Discussion

- Extensive documentation of CLN7 neuropathology findings, including retina (important for understanding this rare disease)
- Demonstration of biodistribution of novel ASO *milasen* in brain parenchyma (important for understanding ASO therapeutic activity)
- Demonstration of ASO-associated macrophage accumulation in leptomeninges

Acknowledgements: BWH mentor: Michael B. Miller, M.D., Ph.D. UCSF mentor: Marta Margeta, M.D., Ph.D. BWH Post-Sophomore Fellowship Program. Raga Ramachandran, M.D., Ph.D. UCSF Dept. of Pathology