This online supplement includes 5 figures and 1 video file.

Imaging of Neuromodulation and Surgical Interventions for Epilepsy

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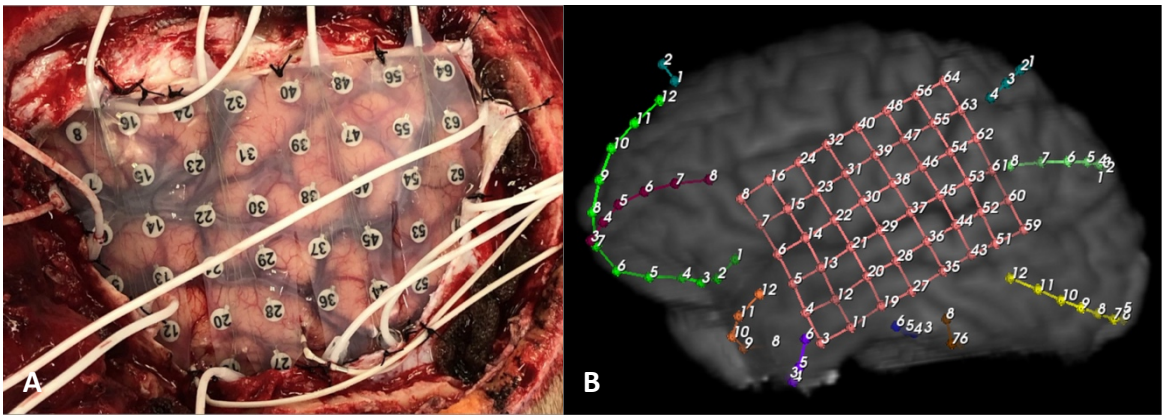
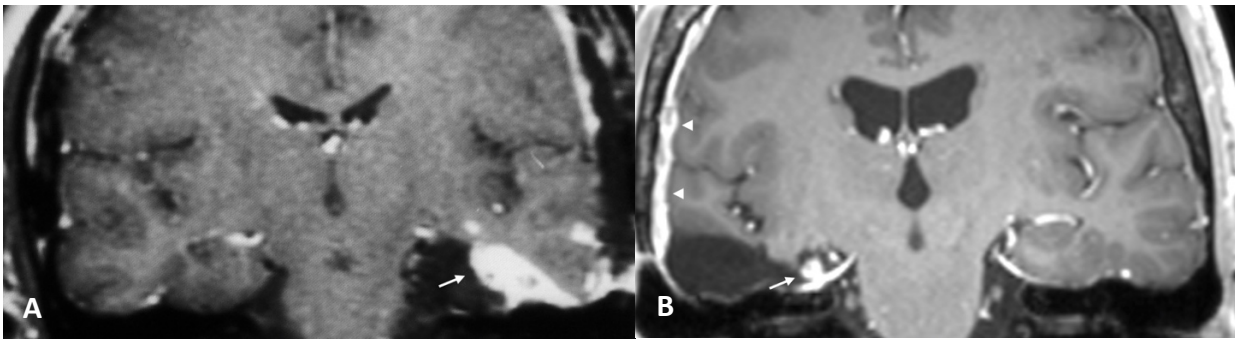


Online Figure 1. Left subdural grid and strip electrodes are required for language and epileptogenic localization. Each electrode in the grid (pink in B) and strips is numbered for surgical placement (A) and in the reconstructed array superimposed on 3D MRI (B).



Online Figure 2. ATL enhancement. (A) Coronal T1 postcontrast imaging shows thick nodular enhancement of parenchymal tissue, present 11 days after surgery. (B) Persistent dural enhancement (arrowheads) and inferior displacement and clumping of the choroidal plexus (arrow) weeks after surgery.

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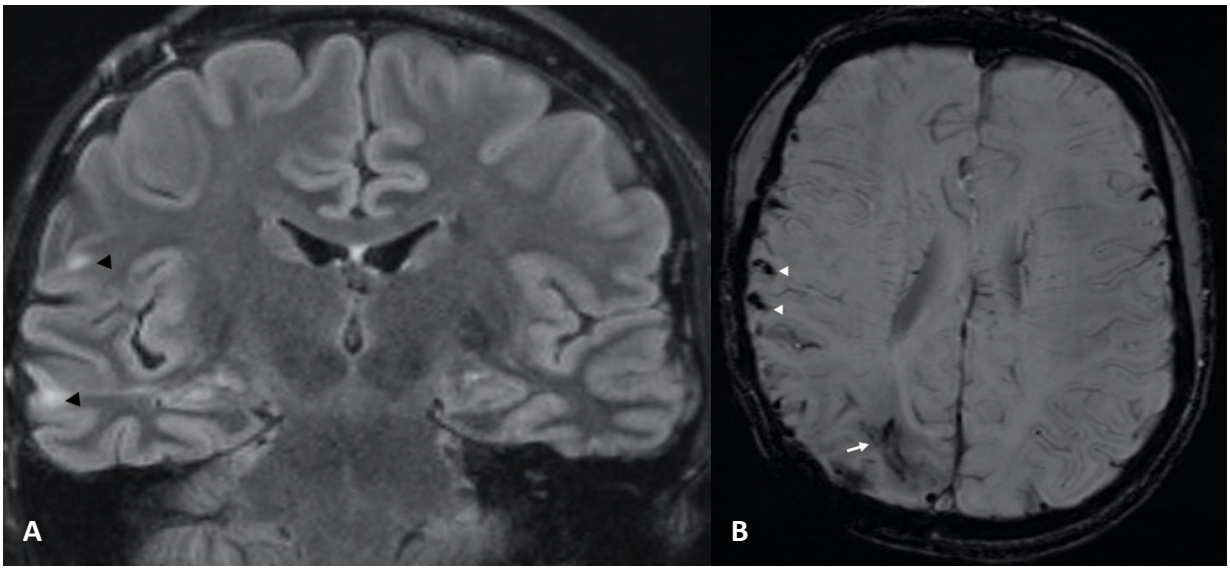

Online Figure 3. MST. A combination of resective surgery (not fully shown, arrow) and MST was performed due to proximity of epileptogenic zone to the eloquent cortex in this patient with MRI negative temporo-parietal epilepsy. Coronal FLAIR (A) shows cortical/subcortical signal changes (black arrowheads), while axial SWI (B) demonstrates subcortical hemosiderin deposition with radial orientations (white arrowheads), findings typically associated with MST.

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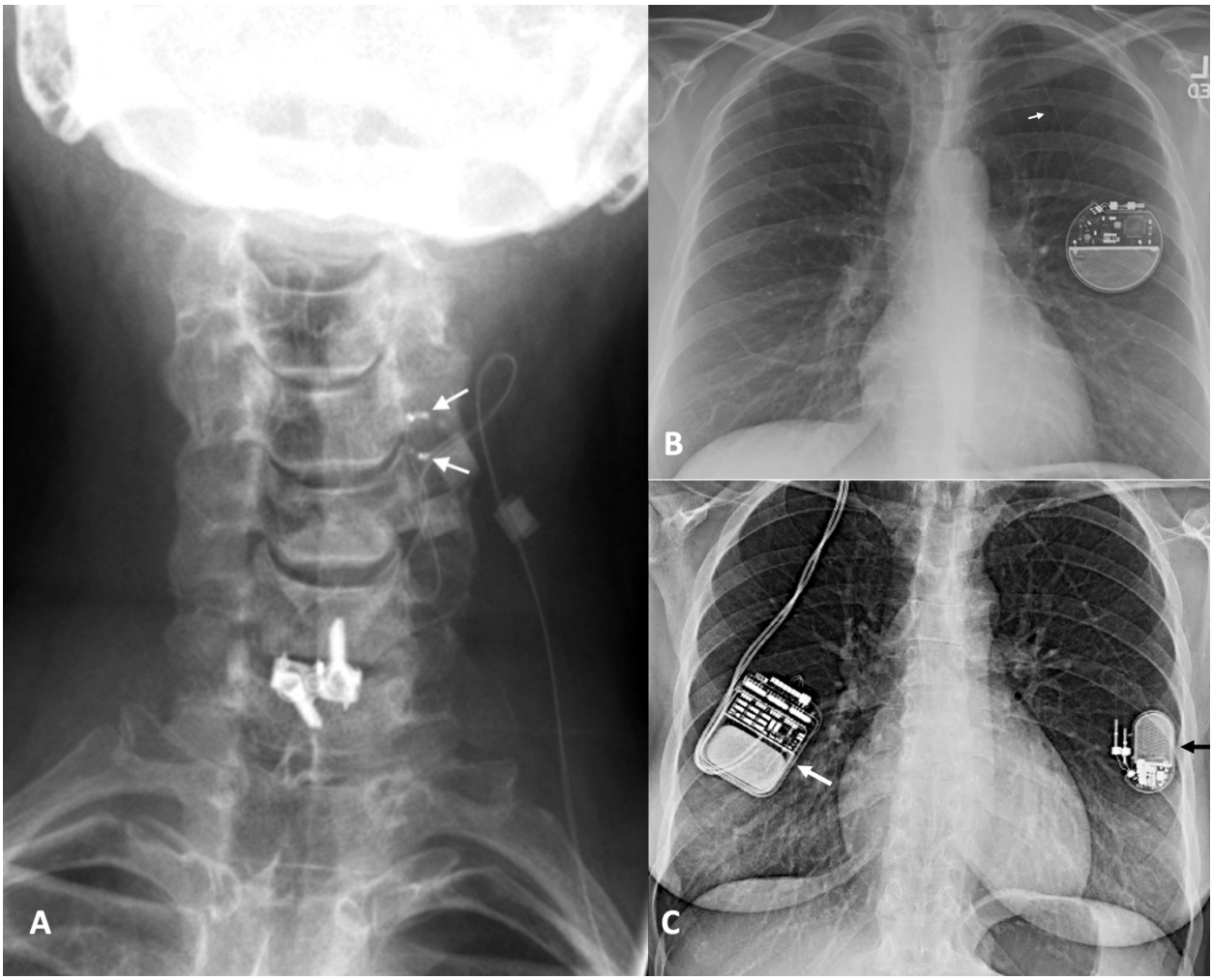

Online Figure 4. VNS and DBS. (A) Arrows point to positive and negative VNS electrodes wrapped around the vagus nerve, which are connected to the round generator (on chest x-ray, B) via the lead wires (arrow). (C) In a different patient, the VNS generator (black arrow) on the left side of the chest was ineffective for controlling this patient's symptoms and abandoned in situ; removing VNS wires around the vagus nerve could damage the nerve. The older oblong shaped VNS generator is no longer produced, having been replaced by a round-shaped device. The patient was next treated with DBS, with placement of the square-shaped generator (white arrow) overlying the right chest.

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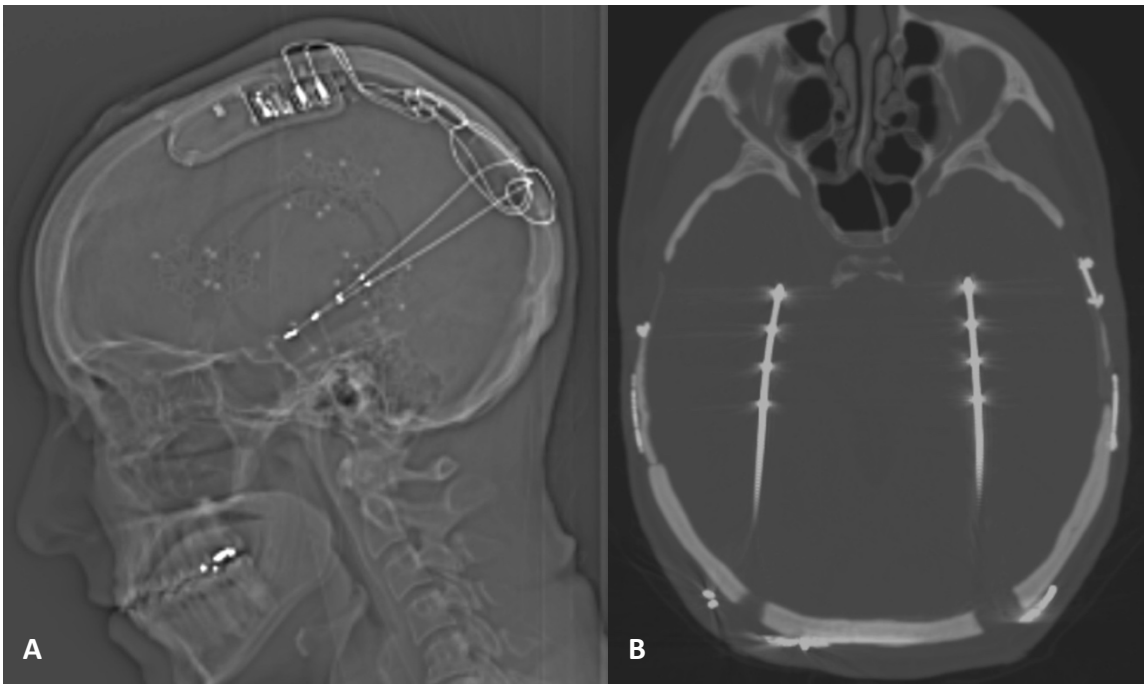

Online Figure 5. RNS. Bilateral independent hippocampal seizures associated with bilateral MTS on MRI. RNS generator and two electrodes are visible on CT scout images (A). Axial oblique CT (B) demonstrates four electrodes in each hippocampal RNS.