

BACKGROUND

Surgery for refractory epilepsy has been proven to be effective in achieving seizure control in 3/4 of patients, allowing seizure freedom in a subset of patients. Patients who do not respond well to epilepsy surgery usually have seizure focus extending beyond the temporal lobe. Currently, there is no single diagnostic approach that allows the detection of a seizure site; instead, a combination of techniques is used.

OBJECTIVES

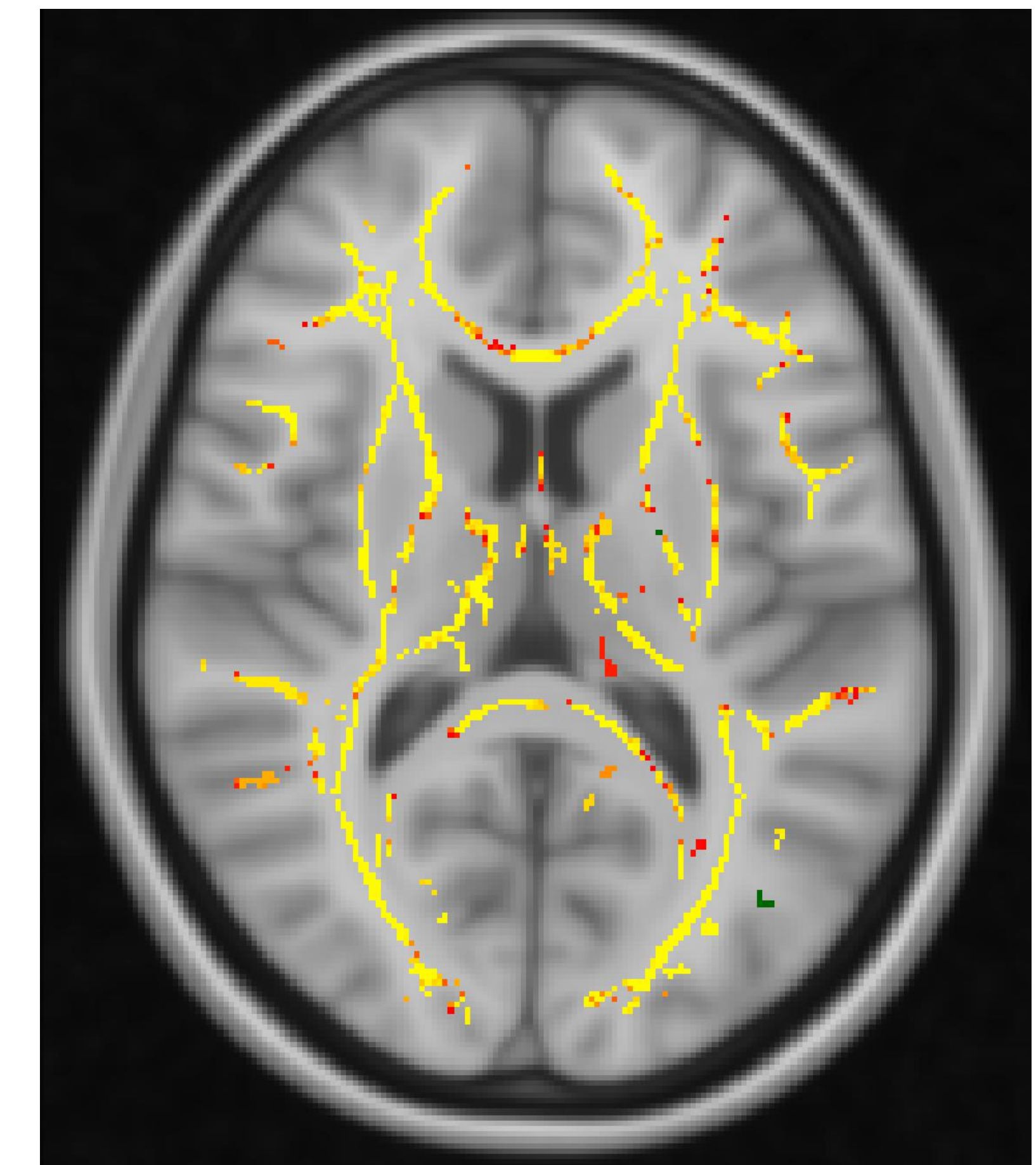
To evaluate if clinically sourced diffusion tensor imaging (DTI) allows the discrimination of temporal epilepsy amenable for lobectomy versus other epilepsy foci using computational MRI postprocessing.

METHODS

This is a case-control study of subjects with refractory epilepsy and normal routine imaging who are undergoing presurgical work-up with DTI. Imaging will be processed using tract-based spatial statistics to compare white matter integrity between patient groups to differentiate temporal epilepsy patients. If the effect size in the study population is too small to determine a difference, an open-source healthy control sample will be used to increase power.

RESULTS

47 charts were reviewed, and 24 subjects meeting inclusion criteria were identified. Following a stereo-EEG evaluation, 13 subjects underwent a temporal lobectomy. DTI imaging is available for all subjects. The institutional review board approved the study.



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