

■ ILAE Neuroimaging Task Force Highlight

Epileptic Disord 2022; 24 (1): 1-8

Imaging characteristics of temporopolar blurring in the context of hippocampal sclerosis

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Epileptic
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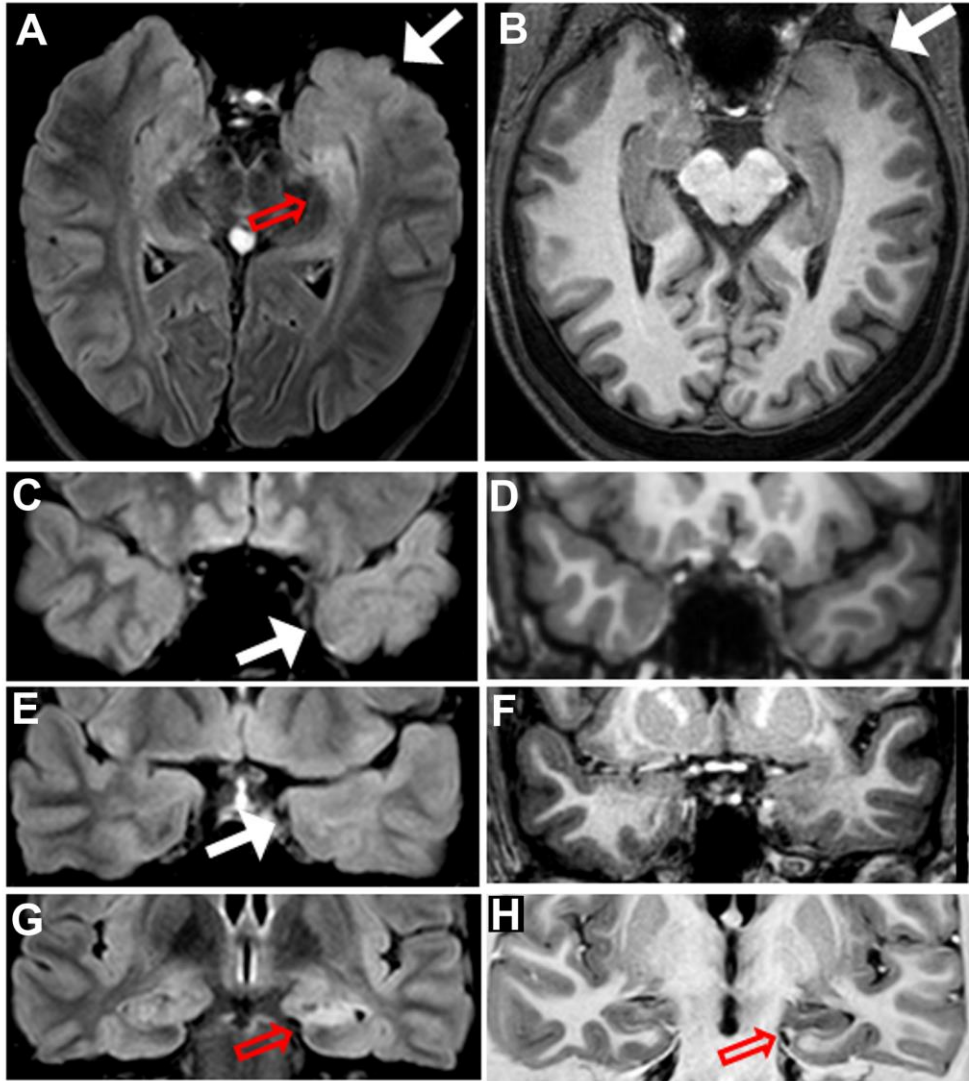
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Imaging characteristics of temporopolar blurring in the context of hippocampal sclerosis (HS)

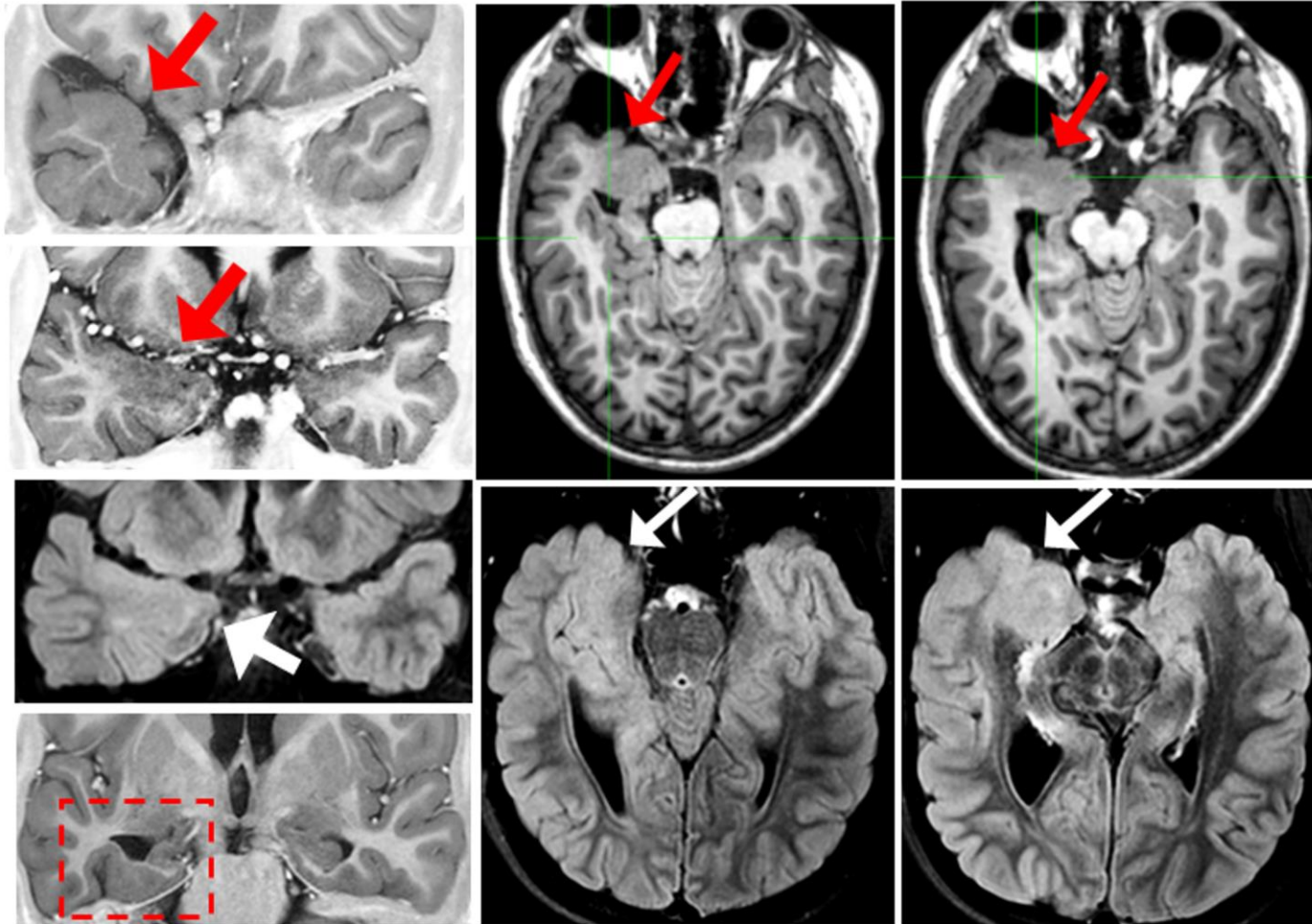
- The frequency of temporal pole signal abnormalities in TLE-HS varies from 28% up to 66%.
- These abnormalities were always ipsilateral to the HS and defined as loss of gray-white matter differentiation, associated with abnormal signal on T2 and FLAIR sequences.
- The apparent temporal pole cortical thickening is due to delayed myelination and arrest of white matter development related to seizures before or near the age of two.

Temporopolar blurring associated with hippocampal sclerosis (HS)



The blurring of the left temporal pole is pronounced on the FLAIR sequences (A,C,E,G). Although there is a subtle signal change in the white matter, the cortical-subcortical transition is relatively well-demarcated and the cortical thickness in the affected temporal pole is similar to that of the contralateral hemisphere (closed arrows). MRI signs of HS: open arrows.

Focal cortical dysplasia (FCD) in the anterior temporal lobe



Blurring of the gray-white matter transition in the right temporal pole (red arrows) with a hyperintense FLAIR signal (white arrows) extending to the right parahippocampal and fusiform gyrus. The right hippocampus is atrophic and has an abnormal shape (dotted square). There is also an arachnoid cyst in the anterior temporal region. The cortical thickening in the FCD lesion is clearly visible on the T1-weighted and FLAIR images.

Imaging characteristics of temporopolar blurring in the context of hippocampal sclerosis (HS)

- The blurring of the temporal pole is related, at least in part, to imaging resolution and partial volume effect of FLAIR images on 1.5 or 3 T scans. Higher-resolution T1-weighted images are helpful to differentiate blurring caused by white matter developmental changes due to true increased cortical thickness.
- The seizure semiology, EEG changes and surgical outcome are similar between TLE-HS patients with or without temporopolar blurring.