

Transmantle sign

The transmantle sign is an MRI feature of [focal cortical dysplasia](#), almost exclusively seen in type II focal cortical dysplasia (Taylor dysplasia - also known as transmantle cortical dysplasia for this reason). However, it is not always present, seen in ~45% (range 21-72%) of patients with type II FCD.

In addition to being specific for type II FCD it is also associated with excellent post surgical seizure free outcomes

Pathology

The transmantle sign is believed to be related to abnormal function of, or injury to radial glial fibers (which go on to transform into astrocytes) and form the scaffolding over which neurons migrate from the periventricular germinal matrix to the cortex ¹⁾.

Radiographic features

MRI The key feature of the transmantle sign is high T2/FLAIR signal extending from the ventricle to the cortex

It is variably associated with other features of focal cortical dysplasia, such as cortical thickening, blurred grey/white junction and decreased T1 signal.

Differential diagnosis

The main differential is that of radial band sign of tuberous sclerosis.

Outcome

The presence of the transmantle sign in patients with medically refractory partial epilepsy is associated with highly favorable seizure control outcomes after surgical treatment ²⁾.

Case series

Fourteen patients with the transmantle sign underwent epilepsy surgery for medically refractory epilepsy. Thirteen patients underwent resective surgery and 1 underwent multiple subpial transections with vagus nerve stimulator placement. Patient demographics, MRI, electroencephalography, intraoperative electrocorticography (ECoG), and pathology were reviewed. The results of this series were compared with those of 114 previously reported patients with FCD without the transmantle sign.

All patients were found to have childhood seizure onset and concordant MRI and ECoG findings. The primary MRI findings associated with transmantle sign included gray-white junction blurring, appearance of cortical thickening, T2 or FLAIR abnormality, and bottom-of-the-sulcus dysplasia. The

transmantle sign was usually a focal finding, typically confined to 1 or several gyri with well-circumscribed epileptic tissue. Correlation of the transmantle sign with FCD histopathological subtypes was highly variable. Patients who underwent complete resection of MRI and ECoG abnormalities (12 of 13 patients) became seizure free. When compared with 114 FCD patients without the transmantle sign, patients with the transmantle sign showed significantly improved seizure-free outcomes after complete resections ($p = 0.04$).

The presence of the transmantle sign in patients with medically refractory partial epilepsy is associated with highly favorable seizure control outcomes after surgical treatment ³⁾.

¹⁾

Castillo M. The Core Curriculum. Lippincott Williams & Wilkins. (2002) ISBN:0781736641.

²⁾ ³⁾

Wang DD, Deans AE, Barkovich AJ, Tihan T, Barbaro NM, Garcia PA, Chang EF. Transmantle sign in focal cortical dysplasia: a unique radiological entity with excellent prognosis for seizure control. J Neurosurg. 2013 Feb;118(2):337-44. doi: 10.3171/2012.10.JNS12119. Epub 2012 Dec 7. PubMed PMID: 23216463.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

https://neurosurgerywiki.com/wiki/doku.php?id=transmantle_sign

Last update: **2024/06/07 03:00**

