Teaching *NeuroImages*: EEG pattern associated with a skull osteolytic lesion in breast cancer

Cullen O’Gorman,
MBBS
Gregory D. Cascino, MD

Correspondence to
Dr. O’Gorman:
ogorman.cullen@mayo.edu

Figure 1 CT head study

Large osteolytic lesion in the right frontal bone. Calcification in the left superior parietal lobe is secondary to prior infarction.

An 84-year-old woman had recurrent spells of right upper limb weakness and numbness. There were prior left parietal and right occipital strokes and metastatic breast cancer with skull involvement (figures 1 and 2). The diagnosis was focal epilepsy. Breach effect is defined as a focal increase in amplitude of α , β , and μ rhythms detected at or near the site

Figure 2 EEG recording

High-amplitude, high-frequency activity confined to the right frontocentral region consistent with breach rhythm.

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From the Mayo Clinic, Rochester, MN.

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of a bony skull defect,¹ usually seen with surgical skull defects but also with osteolytic lesions of the skull.² There is no association with epilepsy, but the EEG alteration may be confused with focal epileptiform discharges.

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REFERENCES

1. Cobb WA, Guiloff RJ, Cast J. Breach rhythm: the EEG related to skull defects. *Electroencephalogr Clin Neurophysiol* 1979;47:251–271.
2. Radhakrishnan K, Silbert PL, Klass DW. Breach activity related to an osteolytic skull metastasis. *Am J EEG Technol* 1994;34:1–5.

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