The effect of bevacizumab (Avastin) on neuroimaging of brain metastases.

Mathews MS, Linskey ME, Hasso AN, Fruehauf JP
Department of Neurological Surgery, University of California-Irvine, Orange, CA 92868, USA. mmathews@uci.edu

Abstract

BACKGROUND: Bevacizumab is FDA approved to treat colon cancer and is currently used off label for metastatic breast, kidney, and lung cancers. Bevacizumab is a monoclonal antibody that binds to, and inactivates, VEGF and is believed to be antiangiogenic.

CASE DESCRIPTION: The authors report the case of a 54-year-old woman with metastatic infiltrating ductal breast carcinoma who developed left occipital and right parietal intraaxial contrast-enhancing masses on surveillance magnetic resonance imaging (MRI). After surgical resection, she was placed on bevacizumab for control of systemic disease. Six months later, a nonenhancing right occipital lesion was detected on MRI. After stopping bevacizumab therapy, the patient underwent microsurgical resection of the lesion. Histopathologic examination was consistent with metastatic breast cancer indistinguishable from her previously resected enhancing brain metastasis. Six weeks after stopping bevacizumab therapy and 3 weeks after microsurgical resection, a new contrast-enhancing mass was noted on magnetic resonance in the right temporal lobe.

CONCLUSION: This case is unique in that we have neuroimaging on prebevacizumab, concurrent bevacizumab, and postbevacizumab brain metastases in the same patient with a single cancer primary, thus, assuring that alterations in neuroimaging characteristics are consistent with bevacizumab effect. As an internal control, it provides strong support for the premise that bevacizumab therapy can confound the diagnosis of brain metastases because of its effect on tumor enhancement.

PMID: 18261776 [PubMed - indexed for MEDLINE]