I read with interest the Case Challenge by Drs. Bushara, Lukas, and Templer. Because gliomas with isocitrate dehydrogenase-1 (IDH1) mutations tend to occur in women age 20 to 49, presentation during pregnancy unfortunately is not rare and can be clinically challenging to manage. I would like to point out, however, that, contrary to what was stated in the article, gadolinium contrast is not teratogenic, although there are concerns about its retention in multiple tissues and rare long-term effects. In addition, a subset of astrocytomas harboring an IDH mutation will have the “T2-fluid attenuated inversion recovery (FLAIR) mismatch sign,” which is highly specific, although insensitive, for diagnosis of IDH mutation-positive astrocytomas, and does not require contrast administration.

Notably, the image in the published case appears to show this sign, with a hyperintense rim around one of the lesions, although comparison of T2 to FLAIR imaging is required and can be complicated by cysts. If the “T2-FLAIR mismatch sign” is present, contrast is not required, and management decisions can be made more easily in this complex situation.

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Authors’ Response

We thank Dr. Graber for his thoughtful and informative response. First, we acknowledge our conflation of the recommendation that gadolinium should be unquestionably avoided, implying gadolinium carries a known risk of teratogenicity. We appreciate your correction as there is an unknown risk. We also appreciate your commentary on the T2-FLAIR mismatch sign. In a population in which contrast should be minimized, use of such a radiographic sign to aid in diagnosis is quite helpful. Despite high specificity and promise for the T2-FLAIR mismatch sign, however, several limitations exist to use of the T2-FLAIR mismatch sign. First, as it is a relatively newly described sign, interobserver reliability has not been established. Second, although the sign is valuable in determining IDH status, it has limited use for differentiating central nervous system (CNS) tumor grades and utility in determining IDH status is limited to low grade gliomas. The T2-FLAIR mismatch sign, and other radiographic findings, may indeed become more routinely used aspect of diagnosing CNS tumors by neuro-oncologists as further research on their reliability and clinical correlations are conducted.

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Editor’s Note

In consideration of the correspondents’ agreement, the online version of record for the article discussed has been updated to state that it was “Out of concerns for potential fetal harm,” that gadolinium contrast was not used.