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## High-Pass-Filtered Phase Image: Left- versus Right-Handed MR Imaging Systems

T.M. Mehemed and A. Yamamoto

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## High-Pass-Filtered Phase Image: Left- versus Right-Handed MR Imaging Systems

We read with interest the article entitled “Detection of Intratumoral Calcification in Oligodendrogliomas by Susceptibility-Weighted MR Imaging”<sup>1</sup> and would like to comment on the appearance of calcification on the high-pass-filtered phase images.

The authors reported that the paramagnetic (authors wrote “diamagnetic”) hemorrhagic component of the tumor would cause a negative phase shift and appear as dark signal on the high-pass-filtered phase images, while the diamagnetic (authors wrote “paramagnetic”) intratumoral calcifications would cause an opposite positive phase shift and appear as bright signal on the high-pass-filtered phase images. This description is true, but only in the case of right-handed MR imaging systems, while in left-handed MR imaging systems, the complete opposite signal would be seen: Paramagnetic substances would appear bright, while diamagnetic substances would appear dark.<sup>2,3</sup>

In Figs 2D and 3D of the above-mentioned article, the high-pass-filtered phase images are those of a left-handed MR imaging system, evident by the bright signal of the veins (paramagnetic deoxyhemoglobin).<sup>3</sup>

The article showed that high-pass-filtered phase images can depict intratumoral calcification in oligodendrogliomas better

than conventional MR images; this finding has been reported before.<sup>4</sup> Understanding the contrast appearance of high-pass-filtered phase images on left-handed versus right-handed MR imaging systems would make distinguishing diamagnetic calcification from paramagnetic hemorrhage a much easier task and prevent any possible confusion.

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**T.M. Mehemed  
A. Yamamoto**

Department of Diagnostic Imaging and Nuclear Medicine  
Kyoto University Graduate School of Medicine  
Kyoto, Japan

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