Reply:

M. Tosaka

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Reply:

I would like to thank Dr. Diana Quiñones for her supportive comments on our article published in the June 2008 issue of the *American Journal of Neuroradiology*.[1] Diffuse pachymeningeal (dural) hyperintensity on fluid-attenuated inversion recovery (FLAIR) MR imaging (DPMHF) may reflect almost the same dural change as diffuse pachymeningeal enhancement (DPME), but the technique of MR imaging is different. As Dr. Quiñones proposes, if the sign of DPMHF on nonenhanced brain MR imaging, accompanied by other signs of spontaneous intracranial hypotension (SIH; subdural effusions, venous sinus engorgement, brain sagging, etc.), is sufficient to diagnose SIH, the demonstration of DPME by administration of contrast material might not be required.[2] The Table compares the characteristics of DPMHF and DPME. DPMHF has several advantages, such as noninvasiveness and cost, but it is less easily noticed than DPME during the interpretation of MR images. Any observer, including residents and nonspecialists, can detect DPME extremely easily by comparison with the MR imaging before injection of contrast medium. In this case, the detailed MR anatomy of the skull and pachymeninges might be not so important. All other MR signs of SIH, including DPMHF, do not have this ease of detection by image comparison.

SIH can be easily and objectively identified on the basis of DPME, and the number of reports in this field has increased rapidly.[3] This is a result of the ease of detection. Physicians in several fields (neuroradiology, neurology, neurosurgery, anesthesiology, emergency medicine, headache) have distinguished the presence of DPME, and the various symptoms and signs have been proven to be the result of SIH. In contrast, the presence of DPMHF remained unnoticed for a long time.

Diffuse, linear, uninterrupted, and non-nodular pachymeningeal enhancement is characteristic of patients with SIH. The wave-like appearance may be a characteristic finding in patients with SIH in the frontal and temporal base regions.[4] DPMHF occurs adjacent to the hyperintense appearance of subdural effusion or hematomas in most patients with SIH, so the linear DPMHF can be observed in locations not adjoining the subdural effusion or hematomas. Of course, the observer should be thoroughly knowledgeable about the MR anatomy of the skull and pachymeninges. Therefore, the identification of DPMHF may be relatively more difficult than the identification of DPME. However, FLAIR is the most sensitive sequence for the detection of characteristic thin subdural effusion or hematomas in patients with SIH.[1] A skilled observer may be able to identify diffuse pachymeningeal hyperintensity and thin subdural effusion or hematomas with routine FLAIR MR imaging, thus allowing omission of injection of contrast medium. The diagnosis is then easy to confirm by further MR imaging with contrast medium if necessary.

Comparison of pachymeningeal enhancement and pachymeningeal hyperintensity on FLAIR imaging

	DPME	DPMHF
Imaging request	Specific	Routine
Judgment	Very easy	Relatively difficult
Positive finding	Dural enhancement	Dural hyperintensity (with subdural effusion/hematomas)
Risk	Invasive	Noninvasive
Cost	High	Low

Note:—FLAIR indicates fluid-attenuated inversion recovery; DPME, diffuse pachymeningeal enhancement; DPMHF, diffuse pachymeningeal hyperintensity on FLAIR imaging.

References

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M. Tosaka
Department of Neurosurgery
Gunma University Graduate School of Medicine
Maebashi, Gunma, Japan

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