

## Letter to the Editor

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# Pontine small capillary telangiectasias: Serious potential consequences of MR misinterpretation

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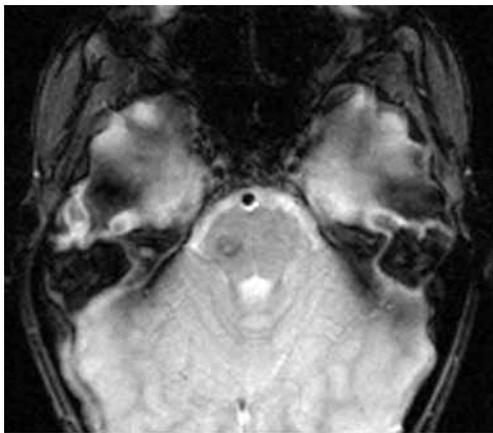
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Capillary telangiectasia is a cluster of dilated vessels without smooth muscle or elastic fibers. These vessels are separated by normal brain parenchyma and usually measure less than 30 microns in diameter. Capillary telangiectasia is almost always an asymptomatic entity causing no clinical complications, like bleeding or seizures, compared to other neurovascular malformations [1–4]. However, this benign vascular abnormality may, due to misinterpretation, create serious potential consequences. We herein report three case examples. The first patient was an 11-year-old boy with a history of somnolence and confusion three weeks after head trauma. On a magnetic resonance (MR) examination performed elsewhere, a small hypointense lesion was noted in the pons on the T2-weighted (T2W) sequence, and confirmed by the gradient-echo T2W sequence (TR = 800 ms, TE = 26 ms, and flip angle = 20 degrees) in this institution on a 1.5-Tesla MR imaging unit (Siemens Magnetom SP63 4000), and was inter-

preted as posttraumatic hemorrhagic injury. Clinical condition of the child gradually improved. A contrast enhanced MR study done 5 months later revealed that the lesion enhanced with a slight brush-like pattern, typical for a capillary telangiectasia (Fig. 1a and 1b). The second patient was a 65-year-old man with a cystic neoplastic lesion of the left cerebral hemisphere. On an MR examination performed elsewhere, a small nodular lesion was additionally detected in the pons on the T2W sequence, and was interpreted as metastasis. Since multifocal malignant disorder of the brain is treated differently, the patient was called back. The lesion was hypointense on gradient-echo T2W sequences, and enhanced with the typical pattern for a capillary telangiectasia, and no time-related size increase was evident. Therefore, surgical intervention was indicated for the cystic neoplasia of the left cerebral hemisphere, and chemotherapy was avoided. The third patient was a 39-year-old woman with the history of breast cancer. On an MR examination performed elsewhere, a nodular enhancement in the pons was interpreted as a metastatic focus. There was no time-related size increase, and a slight brush-like pattern was evident typical for a capillary telangiectasia.

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(a)



(b)

Fig. 1. An 11-year-old boy. (a) Gradient-echo T2-weighted image reveals a small hypointense lesion in the pons. It contains a smaller high-signal focus. (b) Contrast-enhanced T1-weighted image reveals a slight brush-like pattern, typical for capillary telangiectasia.

The etiology of capillary telangiectasia is not completely understood. This disorder might be congenital or develop after low-dose whole brain radiation. It might also be an acquired entity related to venous outflow restriction. Capillary telangiectasia is most frequently detected in the pontine base, and size of the

central part of the malformation is usually below 1 cm. On post-contrast T1-weighted images a prominent brush-like appearance of multiple small vessels is the typical imaging finding [1–3]. In the absence of such a prominent pattern, the diagnosis may be problematic like in the patients presented herein. According to Lee et al. [4] capillary telangiectasia has mild contrast material enhancement but is otherwise undetectable on conventional MR images. It lacks the “hemosiderin rim” of cavernous angioma and demonstrates increased susceptibility only on gradient-echo T2W images, likely owing to blood oxygen-level-dependent contrast. The gradient recalled echo sequence is essential in diagnosing brain capillary telangiectasia, which could otherwise be misdiagnosed as neoplasia, subacute infarction, or demyelination [4]. In the light of these data a small capillary telangiectasia should appropriately be diagnosed by the radiologist. Presence of a brush-like pattern, even if it is not prominent, should especially be looked for in the MR images. Misinterpretations, particularly after head trauma, may create severe troubles from the legal point of view. Also, clinical indications of harmful over treatment like surgery or chemotherapy might be created. On the other hand, a small capillary telangiectasia should not be confused with demyelination, inflammation, artifacts, and a spectrum of other conditions, to avoid potential serious consequences [5].

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