The ependymal "dot-dash" pattern of very early multiple sclerosis

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Purpose:
Using 2 mm thick sagittal fluid-attenuated inversion recovery (FLAIR) images, the finding of "subcallosal striations" has been shown to correlate highly with the diagnosis of multiple sclerosis1,2. Using the same MR technique, we describe a "dot-dash" pattern of the hyperintense ependyma and correlate this finding in patients with early multiple sclerosis.

Materials & Methods:
Sagittal Fast FLAIR images were performed using the following technique: 2D FSE IR: 8,800/130/2,200 (TR msec/echo time msec/inversion time msec), 2-mm-thick sections (1 mm gap), 192 x 256 matrix, 22 cm field of view in 70 patients. Thirty-five of these patients had clinically suspected MS and 35 were age-matched controls. All studies were filmed from a workstation, cropping out all white matter except the corpus callosum and underlying ependyma. These were numbered and blindly reviewed by an experienced neuroradiologist for the presence or absence of the "dot-dash" pattern. The clinical diagnosis in each case was determined from the presenting history or by follow-up call to the referring neurologist.

Results:
As shown in Table I, the correlation between the "dot-dash" pattern and clinical symptoms of multiple sclerosis was highly correlated (p<.001).

Conclusion:
The finding of a "dot-dash" pattern to the ependymal hyperintensity on thin slice sagittal FLAIR is an early marker for multiple sclerosis.

<table>
<thead>
<tr>
<th>Diagnosis of MS</th>
<th>&quot;dot-dash&quot; pattern</th>
<th>No &quot;dot-dash&quot; pattern</th>
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<tbody>
<tr>
<td>Diagnosis of MS</td>
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<td>3</td>
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<tr>
<td>Age matched controls</td>
<td>13</td>
<td>22</td>
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References