A 43-year-old woman presented with right optic neuritis. Brain MRI showed multiple periventricular and juxtacortical demyelinating lesions and cerebrospinal fluid (CSF) analysis showed positive oligoclonal IgG bands. She was treated with intravenous methylprednisolone and fully recovered. A follow-up brain MRI showed one new lesion and she was diagnosed with clinically definite multiple sclerosis MS according to McDonald’s criteria (1). Treatment with interferon beta 1a was started. In the subsequent five years she was without new symptoms or new lesions on brain MRI. Her current problems started two days earlier with speaking difficulties. Neurological examination revealed transcortical motor aphasia. Brain MRI showed a left periventricular lesion with concentric bands of variable hyperintensity. Post-contrast sequences (Picture D) showed enhancement in alternating rings throughout the lesion. Diffusion-weighted image
(DWI) (Picture E) and apparent diffusion coefficient (ADC) maps (Picture F) showed restricted diffusion in a concentric band surrounding a central nidus of facilitated diffusion (arrow). These findings were consistent with Baló’s concentric sclerosis (BCS). She was treated with steroids and recovered.

Baló’s concentric sclerosis (BCS) is characterized by a lesion consisting of rings of demyelination alternating with rings of intact myelin. Three subtypes of BCS are recognized: a self-limited, monophasic illness; relapsing-remitting demyelination; and primary rapidly progressive disease (2).

There are several proposed mechanisms of BSC based on MRI findings. First, longitudinal imaging has demonstrated that BCS lesions eventually lose their characteristic ring appearance and often evolve into typical demyelinating MS-like lesions (3). Second, diffusion restriction on MRI, indicative of cytotoxic edema and ischemia, has now been demonstrated in a handful of cases of BCS, but also in multiple sclerosis lesions (4). The DWI findings evolve in a similar pattern to that seen in ischemic stroke, although the restricted diffusion remains for a longer period of time (3, 4).

Histopathological studies have shown that underneath one disease - multiple sclerosis, several distinct lesion subtypes exist (5). Therefore it can be argued, as in the present case, that the typical MRI finding of BCS is actually just one of the MRI presentations of multiple sclerosis, rather than a specific disease.

The authors state that they have no Conflict of Interest (COI).

Authors’ contributions
Study concept and design: Barun and Habek. Acquisition of data: Barun, Adamec and Habek. Analysis and interpretation of data: Barun, Adamec and Habek. Drafting of the manuscript: Habek. Critical revision of the manuscript for important intellectual content: Barun, Adamec and Habek. Administrative, technical, and material support: Barun, Adamec and Habek.

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