Multiple Sclerosis and the Radiologically Isolated Syndrome

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Do you have a patient with "radiologically isolated syndrome" -- and, if so, what do you tell your patient?

There have been many times during my 20 years of practice that I have seen patients who were referred for evaluation of an abnormal brain MRI and the possibility that they had MS. The typical patient is a younger woman. The MRI was done for an unrelated reason-- typically a severe headache--and it revealed abnormalities that suggested MS.

For most patients like this, their level of distress and fear is palpable, and they envision a future surrounded by wheelchairs and walkers. Some patients adopt an “ignorance is bliss” stance. An even smaller number come in with mountains of research they have done online.

I can reassure most—after reviewing their MRIs—that the findings are a false alarm, because the few white matter abnormalities seen on the images are located in areas not typical for MS and instead suggest a migrainous syndrome. Many patients remain concerned, but one or two additional clinical visits usually reassure them that their condition is benign.

For a small number, the MRI images will show a pattern that suggests MS. Once the patient's history is thoroughly reviewed, highly suggestive transient symptom complexes are found that strengthen this diagnosis. The harder task then becomes confirming the diagnosis and setting up a treatment course. Interestingly, most patients feel relief that their symptoms are not just “all in their head.” Most neurologists are aware of the “Clinically Isolated Syndrome” (CIS), such as optic neuritis. In the majority of these cases, CIS is the harbinger of MS. CIS in association with an abnormal MRI of the brain leads to a diagnosis of MS.

However, many neurologists are not aware of the “Radiologically Isolated Syndrome” (RIS). RIS remains a controversial entity. I have come across a couple of instances in which abnormalities were found on a patient’s brain and/or spinal cord MRI that suggest MS, but the patient had not experienced any symptoms. Without symptoms, a diagnosis of MS cannot be made.

Studies by Okuda and colleagues1,2 have provided some baseline information about RIS. Last year, this group published a multinational retrospective review of RIS that showed that over a 5 year period, up to 34% of such patients go on to have their first clinical “MS attack” and receive a diagnosis of MS.3 These researchers also provided some characteristics in RIS that suggest a higher risk of future MS: these include lesions in the spinal cord; age younger than 37; and male gender. Stromillo and coworkers3 used MRI spectroscopy to show that there was neuronal damage in these lesions. However, independent confirmation of this and its significance to patient clinical outcome has not been determined.

I had a patient who experienced a similar situation. She had a history of occasional headaches that were rarely migrainous in nature. An unusually severe headache prompted an MRI study of the brain. This showed white matter abnormalities in the corpus callosum and in juxta-cortical and periventricular locations. Her MRI suggested she had MS. Yet, she did not have current symptoms of MS, nor had she had prior symptoms that suggested MS. Her neurological exam was normal. A lumbar puncture revealed clean cerebrospinal fluid. Visual evoked potential study was normal. Her spinal cord MRI was negative for lesions, and followup MRI studies remain unchanged. We discussed the diagnosis of RIS. She agreed that since the diagnosis of MS could not be made, treatment and its possible risks seemed unnecessary.

Does this patient have MS? I am not sure, but I continue to monitor her clinical and radiological condition and look forward to seeing more definitive information on this entity.
MRI FLAIR image suggesting MS. (Dr Frank Gaillard, http://radiopaedia.org)

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