Celiac Disease Can Have Neurologic Presentation

Patients who have gluten ataxia improve or stabilize within a year of starting a strict gluten-free diet.

BY KATE JOHNSON
Montreal Bureau

NEW YORK — Neurologic dysfunction may be the sole presenting symptom of celiac disease, according to Dr. Marios Hadjivassiliou, a neurologist at the Royal Hallamshire Hospital in Sheffield, England.

Speaking at an international symposium on celiac disease, Dr. Hadjivassiliou reported that his neurology clinic has followed 312 patients with gluten sensitivity who presented with various types of neurologic dysfunction. The majority of the patients had gluten ataxia (n = 147), while others had peripheral neuropathy (n = 116), gluten encephalopathy (n = 31), and gluten myopathies (n = 13).

His previous research has found that gluten ataxia is the single most common cause of sporadic, idiopathic ataxia—accounting for 40% of sporadic, idiopathic ataxias and 21% of all ataxias (Brain 2003;126:685-91). "These patients have limb and gait ataxia, and one-third will also have an enteropathy," he said.

He has also shown that patients with gluten ataxia improve or stabilize within a year of starting a strict gluten-free diet, even in the absence of enteropathy (J. Neurol. Neurosurg. Psychiatry 2003;74:1221-4). "However, the sooner you intervene, the better," he said. "About 60% of these patients will have atrophy of the cerebellum shown on MRI, and there is loss of Purkinje cells, which is not reversible."

With regard to gluten neuropathy, new research by Dr. Hadjivassiliou has shown that it accounts for 26% of all axonal neuropathies and 34% of idiopathic, sporadic axonal neuropathies (J. Neurol. Neurosurg. Psychiatry 2006;77:1262-6). "The prevalence of gluten-sensitive enteropathy is 10 times higher in patients with axonal neuropathy compared to healthy individuals," he said.

He has also recently published evidence showing that patients with gluten-sensitive neuropathy show improvement on a gluten-free diet, while patients who continue to ingest gluten deteriorate further (Muscle Nerve 2006;34:762-6).

However, neuropathies are still common in treated celiac patients, he added. "If you screen adults with established celiac disease, one-quarter of them will have evidence of neuropathy despite a gluten-free diet."

Gluten encephalopathy—episodic headache often associated with confusion and focal neurologic dysfunction, requiring hospital admission—is also a neurologic manifestation of celiac disease, Dr. Hadjivassiliou reported.

Magnetic resonance imaging shows white matter abnormalities associated with focal neurologic deficits, and these are not always reversible even after the patient starts a gluten-free diet. However, the headaches respond well to the elimination of gluten, he said.

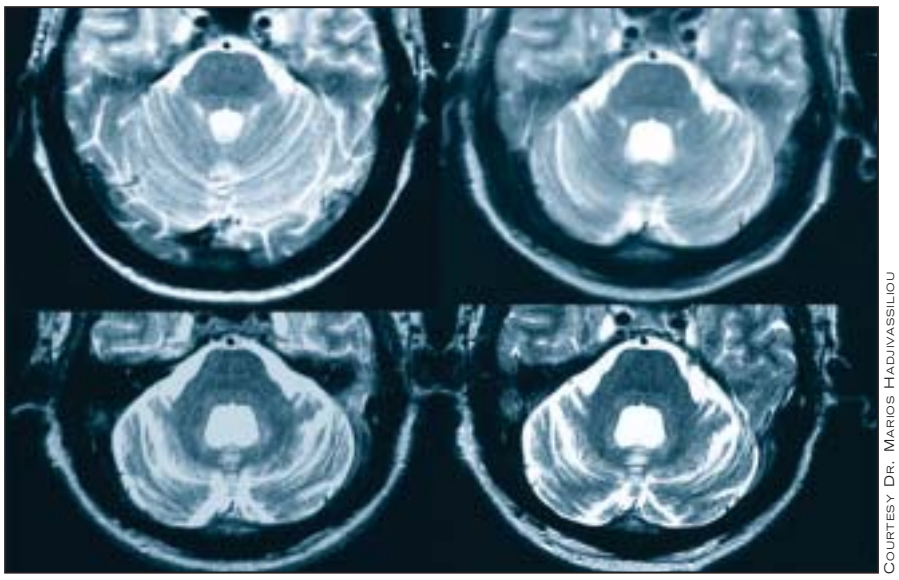
Dr. Hadjivassiliou believes that nutritional deficiencies resulting from malabsorption in the small intestine can now be ruled out as a cause of gluten-sensitive neuropathies.

"The overwhelming evidence is for an immune-mediated mechanism," he said, adding that pathological data mainly from postmortem examinations show evidence of MRI inflammatory changes with perivascular emphasis primarily affecting the cerebellum and brainstem, but also other parts of the brain.

He urged physicians to recognize that celiac disease is a systemic disorder that has diverse manifestations in the body beyond the gastrointestinal system. "There is a historical misconception that gluten sensitivity is solely a disease of the gut," he said. "To recognize the neurologic impact, you have to appreciate it is a systemic disorder."

His experience is that many gluten-sensitive neurologic disorders have an age of onset in the mid-50s. Many patients have no gastrointestinal symptoms, but serologic tests for IgG and IgA antigliadin antibodies are positive.

Endomysial antibodies or tissue transglutaminase antibodies can help identify those patients who may also have an enteropathy; however, only one-third of these patients will have histologic confirmation of this on biopsy. ■



COURTESY DR. MARIOS HADJIVASSILIOU

MRI scans taken over 7 years show progressive cerebellar degeneration in a patient with gluten ataxia who refused to go on a gluten-free diet (earliest scan at upper left to most recent at lower right).

Capsule Endoscopy Shown to Be Helpful in Celiac Disease

BY KATE JOHNSON
Montreal Bureau

NEW YORK — Capsule endoscopy, a promising alternative to upper endoscopy for the investigation and diagnosis of celiac disease, may one day negate the need for endoscopically obtained intestinal biopsies, Dr. Ernest Seidman said at an international conference on celiac disease.

"I don't think that we can yet say that the capsule should replace the biopsy in every case," said Dr. Seidman, who is professor of medicine and pediatrics at McGill University, Montreal, and also a consultant for Given Imaging, which manufactures the only capsule endoscope that has been approved by the Food and Drug Administration.

"The consensus opinion is that capsule endoscopy is equivalent to histology [for the detection of celiac disease], but only in those with severe villous atrophy. More data is required to prove diagnostic equivalence for those with partial atrophy," he said.

Usually, patients with serologic evidence of celiac disease undergo intestinal biopsy to verify the presence of villous atrophy, which is currently the definitive diagnostic finding.

But a consensus of expert opinion from the International Conference on Capsule Endoscopy in Paris last June suggested that the tool may be an alternative for patients who are unwilling or unable to undergo biopsy, for those whose initial biopsy is equivocal, and for patients with confirmed celiac disease who develop alarming symptoms despite adherence to a gluten-free diet (Endoscopy 2005;37:1055-9).

One advantage of capsule endoscopy in the investigation of celiac disease is that it offers unprecedented views of the small bowel in its entirety. "So much of the small bowel has been a black box for us, and with capsule endoscopy, we can see areas that are not accessible with the upper endoscope," Dr. Seidman said.

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Pillcam capsules show promise for use in the diagnosis of celiac disease.

Capsule endoscopy is also state-of-the-art technology for examining the intestinal lining for other small bowel disorders. "We can see target lesions that would not otherwise be detectable by other imaging methods. Moreover, villous appearance can be seen extremely well—the resolution of the camera is extraordinary. We see villi routinely without doing magnification, and when the villi are atrophic or edematous, it's very apparent," he added.

Capsule findings of the intestinal lining that are suggestive of celiac disease include fissuring, scalloping, a mosaic pattern, nodularity, and delayed appearance of villi with a loss of circular folds, Dr. Seidman said.

Although the avoidance of endoscopy and sedation may be particularly attractive when dealing with pediatric patients, children under the age of 8 years are rarely able to swallow the jelly bean–size capsule, he said, adding that getting them to demonstrate with a real jelly bean is a wise idea.

"Otherwise, you run into a situation where you have opened the blister pack, which activates the camera, and you have the child holding it and saying they can't do it. It's an expensive way to get pictures of their face," he said.

There is a delivery device that allows the introduction of the capsule into the small bowel with an endoscope, but this approach negates much of the advantage of the capsule, he said.

Even after they have started a gluten-free diet, patients with celiac disease might face up to a 40-fold increased risk of developing small bowel lymphomas, compared with the risk in people who don't have celiac disease. Consequently, any recurrent or persistent bowel symptoms that occur in diagnosed patients following the adoption of a strict gluten-free diet are to be carefully evaluated and investigated. Capsule endoscopy often reveals abnormalities in such patients, Dr. Seidman said.

"Small bowel tumors are notoriously silent until it's too late—and finding them is extremely difficult. Needless to say, capsule endoscopy is the most proficient way to look for these tumors," he said.

A recent study of capsule endoscopy in 47 celiac patients with abdominal pain or other symptoms suggestive of malignancy found cancer in 5%, ulcerations in 50%, and villous atrophy in 68% (indicating noncompliance with the gluten-free diet), he said (Gastrointest. Endosc. 2005;62:55-61). ■