

CASE REPORT

Migraine as the Sole Manifestation of Non-Coeliac Gluten Sensitivity

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ABSTRACT

BACKGROUND

Migraine is a well-known extra-intestinal symptom of non-coeliac gluten sensitivity (NCGS). To date, it has been always associated with the gastrointestinal signs and symptoms of NCGS.

CASE PRESENTATION

Here, we report on two patients with a long history of migraine as the sole manifestation of NCGS. Their response to a gluten-free diet was excellent.

CONCLUSION

In conclusion, clinicians should be aware that migraine can be the sole manifestation of NCGS patients. Given the growing prevalence of NCGS, these findings raise the question of whether all migrainous patients should be screened for NCGS.

KEYWORDS

Migraine, Non-coeliac gluten sensitivity, Gastrointestinal signs

INTRODUCTION

Non-coeliac gluten sensitivity (NCGS) corresponds to a recently characterized set of relatively mild gastrointestinal and extra-intestinal symptoms induced by gluten-containing food in people who are not affected by coeliac disease (CD) or wheat allergy and who respond to the introduction of a gluten-free diet. Neurological disorders (such as headache) have often been associated with the gastrointestinal and other systemic signs and symptoms of NCGS in general [1].

Here, we report on two patients with a long history of headache that met the International Classification of Headache Disorders, 3rd Edition (ICHD-3) criteria for migraine [2] as the sole manifestation of NCGS; their response to a gluten-free diet was excellent.

CASE PRESENTATION

Case 1

A 62-year-old man was suffering from migraine without aura, as defined by the ICHD-3 criteria. According to the patient, the first migraine attack had occurred at the age of 20. He had been taking medication for hypercholesterolemia for many years, and also reported chronic fatigue. The headache had prompted several examinations (including a neurological examination) but the findings were normal. The responses to propranolol, oxetorone and topiramate were poor. Brain neuroimaging did not reveal any occipital or parieto-occipital calcification. Sensitivity to gluten was suspected, and a gluten-free diet was recommended. After two months on the diet, the patient observed a marked reduction in fatigue and disappearance of the migraine. He also reported the recurrence of headache soon after consuming small amounts of gluten. The gastroscopy results and screens for anti-transglutaminase and anti-endomysium antibodies (used to rule out coeliac disease) were normal.

Case 2

A 67-year-old woman had suffered from migraine without aura since the age of 16. She presented with chronic fatigue but no gastrointestinal symptoms. The patient had a history of autoimmune hypothyroidism and a family history of migraine. In the previous 6 months, the severity of the migraine had forced her to limit her activities of daily living and stay in bed. She had consulted several neurologists. Her brain CT findings were normal. She was reluctant to take medication and decided (on her own initiative) to start a gluten-free diet. Six months after starting the diet, all the symptoms had disappeared.

DISCUSSION AND CONCLUSIONS

Clinicians readily and systematically screen for NCGS in people with migraine-like headache if other symptoms suggestive of NCGS (and especially gastrointestinal manifestations) are present. The two cases reported here emphasize the fact that migraine can be the sole manifestation of NCGS - complicating the diagnosis.

Previous studies have revealed a close relationship between migraine and gastrointestinal disorders (including Crohn's disease (CD) and NCGS). Indeed, the prevalence of migraine is higher among patients with CD (30%) and patients with NCGS (50%) than among healthy controls (15%) [3]. Accordingly, a case-control study found that the prevalence of coeliac disease was higher among 90 migraine patients (4.4%) than in blood donor controls (0.4%) [4].

The mechanisms through which the gut and the brain may interact in migraine patients have not been well characterized. However, the elevated gut permeability observed in gastro-intestinal disorders might accentuate gluten-induced inflammatory and immune responses, with higher levels of calcitonin gene-related peptide and histamine [5]. Indeed, a recent study showed a strong relationship between low serum levels of diamine oxidase (an enzyme that degrades histamine) activity and the presence of NCGS [6].

In conclusion, clinicians should be aware that migraine can be the sole manifestation of NCGS patients. Given the growing prevalence of NGCS, these findings raise the question of whether all migraine patients should be screened for NGCS.

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