Neurological disorder in celiac patient after third molar extraction: is there a relation?

Trastorno neurológico en un paciente celíaco después de la extracción de terceros molares: ¿existe relación?

Abstract

Celiac disease is an immune-mediated gluten-dependent systemic disorder characterized by a specific profile associated with small intestinal lesion. Some of the classical symptoms observed in patients with this condition are nutrient malabsorption, diarrhea, abdominal pain, fatigue and, more recently, neurological symptoms were associated with the disease. Therefore, the objective is to inform an unusual case of a patient with celiac disease that developed severe permanent paresthesia in the superior and inferior gingiva, tongue and palate after tooth extraction and to discuss the relation between both things.

Descriptors: Nervous System Disease; Celiac Disease; Molar, Third.

INTRODUCTION

Celiac disease is an immune-mediated gluten-dependent systemic disorder associated with a wide range of symptoms, mainly gastrointestinal. Some authors also defend the association between celiac disease and neurological disorders. Concerning oral manifestation, an association with a delay in dental eruption, decreased salivary flow, recurrent stomatitis, angular cheilitis and dental enamel defects in both dentitions have been associated. The prevalence of celiac disease in the healthy population is at least 1% and there are no accurate estimates of the prevalence of neurological manifestations, although some studies reveal a range between 10 and 22.5%. Therefore, the objective is to inform a case of a patient with celiac disease that developed severe permanent paresthesia in the superior and inferior gingiva, tongue and palate after tooth extraction.

CLINICAL CASE

Female patient, 33 years old, was referred to the Department of Oral and Maxillofacial Surgery at Erasto Gaertner Hospital needing the extraction of her third molars due to recurrent episodes of pericoronitis. The patient reported that she had a late diagnosis of celiac disease at 30 years old, confirmed by an intestine biopsy and presence of circulating antibodies, and at the present moment she was on a gluten-free diet. The patient related other medical conditions such as osteoporosis, epilepsy, depression, fibromyalgia, esophagitis, and lactose intolerance, treated with medication. An intraoral examination revealed the presence of permanent dentition with the lack of some teeth and a severe enamel defect, with brown and brittle teeth (Figure 1).

Teeth 18, 28, 38 and 48 were present, the last two being partially covered by gingival tissue. X-rays showed tooth 38 in a vertical position, near the area of the mandibular channel, and tooth 48 in a horizontal position (Figure 1). The extraction of the 4 teeth was performed with no intercurrences, but later the patient developed paresthesia on the right side, in the region innervated by the posterior superior alveolar nerve, major palatine nerve, lingual nerve, inferior

Figure 1: Panoramic X-ray showing tooth 38 in a vertical position, near the area of the mandibular channel, and tooth 48 in a horizontal position.
alveolar nerve and buccal nerve. Treatment with laser therapy and physical therapy was proposed without success. A MRI was done to investigate brain tumour, but no alterations were found (Figure 2). Laboratory exams ruled out the possibility of malnutrition or a vitamin deficiency. Another possibility considered was neurotransmitters release dysfunction as cause of the paresthesia, but both dopamine and serotonin exams were within normal limits. One year after the surgery, the patient continues the follow up and still has paresthesia and cannot distinguish temperatures or textures on the affected site, even when poked with needles.

Figure 2: MRI scan in an axial view showing normality.

DISCUSSION

The estimated prevalence of persistent paresthesia (lasting at least 6-9 months) after third molar extraction ranges from 0 to 0.4%, a very small percentage. When there is a visual resection of the nerve, it is possible to consider the surgical repair, which was not indicated in the case reported in this paper, since the nerves were not exposed during surgery. No literature about paresthesia of palatal and posterior superior alveolar nerve was found. The current understanding of the pathogenesis of neurologic findings in patients with celiac disease is limited. Nutritional deficiencies may play a role in the development of neurological deficits, especially in those patients with a proved malabsorption of nutrients such as vitamin B-12, vitamin E, calcium and folic acid and that does not adhere to the correct diet. The patient in the case presented had a late diagnosis of celiac disease, meaning that she lived a long period with implications of the systemic disorder. She presented other conditions that might have been potentialized by long term gluten intolerance, even though, she currently follow a gluten-free diet and has normal laboratory exams, without the lack of the nutrients mentioned above. A study by Chin et al. with a sample of 20 patients with neuropathy and biopsy-confirmed celiac disease found that all of the patients experienced burning, tingling, sensory loss and numbness in their distal extremities and 45% had diffuse paresthesias involving the face, trunk and lumbosacral region. Alaedini et al. tested 27 patients looking for the presence of antiganglioside antibodies, which are associated with autoimmune neuropathies. Neurological examinations in the six patients who tested positive revealed the presence of distal sensory loss, consistent with the diagnosis of peripheral neuropathy. Clinical tests showed that the same six had numbness or paresthesias with sensory loss in their hands and feet. Three of them suffered from neuropathic pain. Electromiography and nerve conduction studies showed discrete abnormalities in two of them, corresponding to what had been previously described by Oh et al. as a possibility. In one of the patients, who was prescribed a nerve biopsy, chronic axonopathy was observed. None of the patients were found to have a nutritional deficiency or other possible causes of neuropathy.

CONCLUSION

Therefore, based on the available literature, the accurate incidence of neuropathy in celiac disease remains unclear and this diagnosis may be neglected if the patients are not properly and fully evaluated. Thereby, patients with celiac disease that present neurological symptoms should receive special attention to avoid further complications. The professional should be aware of this possible outcome when deciding for an oral surgery.

REFERENCES


CONFLICTS OF INTERESTS
The authors declare no conflicts of interests.

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