

Celiac Disease from Dentist Perspective

Short Communication

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Abstract

Celiac disease is an immunological responsiveness to ingested gluten contained wheat, rye and barley in genetically susceptible individuals. The disease shows non gastrointestinal symptoms as well as gastrointestinal symptoms. Oral manifestations like dental enamel defects and recurrent aphthous stomatitis are common non gastrointestinal symptoms. So dentists must pay attention for these symptoms and may play an important role on early diagnosis of celiac disease.

Keywords: Dental Enamel Defects; Recurrent Aphthous Stomatitis; Celiac; Oral Manifestations

Introduction

Celiac disease is an immunological responsiveness to ingested gluten in genetically susceptible individuals. It's characterized by intolerance to gluten contained wheat, rye and barley. It's an autoimmune disorder that causes small intestine damages due to gluten and only treatment is lifelong gluten-free diet [1,2].

The diagnosis of the disease depends on serological tests, HLA typing and finally intestinal biopsy [3].

Gliadin; major component of gluten has an important role. Increased serum levels of anti endomysial antibody (EMA), anti-tissue transglutaminase antibody (TTg), antigliadin antibody (AGA) IgA are helpful for the diagnoses [1,3].

HLA typing is used to detect gliadin epitopes by antigen-presenting cells. HLA-DQ2 and HLA-DQ8 are associated with an increased risk for celiac disease. Most celiac patients have these haplotypes [1,3].

The diagnosis of celiac disease can be verified by villus atrophy, cryptic hyperplasia, intraepithelial lymphocyte infiltration and epithelial changes by means of intestinal biopsy [3-5].

Celiac disease shows non gastrointestinal symptoms as well as gastrointestinal symptoms [3]. Chronic diarrhea, abdominal distension, bloating, vomiting, constipation are mostly observed in classical type of celiac disease. Muscle weakness, tiredness, loose stools are characteristic clinical features [1-6]. Delayed puberty, short stature, chronic anemia, dermatitis herpetiformis can accompany oral manifestations. Dental enamel defects and recurrent aphthous stomatitis were related to celiac disease in many studies [2,7-12].

Dentition begin to develop from the dental lamina originated from epithelial cells in the first months of embryonic development. Deciduous tooth buds develop until 7 months in utero and afterwards hard tissues; enamel and dentin begin to form. While permanent incisors begin to develop in 5th month in utero, it continues till 10 months after birth. Permanent molars also continue to develop through the first year of life. Tooth buds are very sensitive to any disturbance while developing. Many factors during dental development can cause damages in dental hard tissues. Genetic factors, immunological responses, composition of saliva, environmental factors, infections

and systemic diseases are common predisposing factors for dental enamel defects [13,14].

Celiac disease has been claimed to have an influence on occurring enamel defects [7-9,11,15,16].

One of the possible reasons is thought to be hypocalcemia due to malabsorption in intestines. Low serum Ca concentrations during enamel maturation was reported by Nikiforuk et al. [17]. Conversely, there are studies reported similar serum Ca levels in the celiac patients with and without enamel defects [9,12].

One other claim is that a specific antigen can cause enamel defects, so genetically structure effects the development of enamel [4,9].

The age of diagnosis can be related to enamel defect formation. So that the crown of permanent teeth continues through 7 years, gluten provocation may affect the enamel formation [20].

Dental enamel defects related to celiac disease were first discovered in 1955 and high prevalence of defects were showed by a Finnish researcher in 1986 [21]. A classification was described typical to celiac. It must be symmetrically and chronologically detectable in all four quadrants of the dentition and called 'systematic'. Many studies with higher prevalence of enamel defects in celiac patients were reported in following years [2,7,12,16,20,22].

Recurrent aphthous stomatitis(RAS) is most common oral mucosal disease in human body. Its etiology could not been explained exactly. Genetic, immunological and microbial factors may play a role in the occurrence of RAS. Local trauma, stress, some drugs, hormonal changes and vitamin can affect RAS [23].

It was thought that immunological and genetical factors affect RAS occurrence in celiac patients. DR7 and DQ alleles were found to be related with RAS occurrence [7,11]. Gluten was found to be the most important factor for RAS stimulation in celiac patients. The complains about RAS were found higher in the period of gluten provocation in celiac patients [7,11,24].

Saliva can be a useful tool for diagnosis of celiac disease. Antibodies specific to CD like AGA IgA and TTG IgA are measurable in saliva and can be used for prediagnosis [25-28]. Salivary IgA AGA was found similar with serum levels in some studies [25,29]. Conversely Patinen et al., couldn't find a significant correlation between serum and salivary levels of IgA AGA [27].

Dentists can play an important role on early diagnosis of celiac disease. Systematic enamel defects and recurrence of aphthous stomatitis are the signs that we must evaluate. A good timing of gastroenterologist consultation quickens the diagnosis and can save quality of life before higher damages

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