

# CELIAC DISEASE AND ITS ORAL MANIFESTATIONS

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## INTRODUCTION:

Living with celiac disease traditionally means a wheat free diet. Celiac disease or sprue is a permanent intolerance to gluten (a protein present in wheat, rye and barley) that results in damage to the small intestinal mucosa caused by an autoimmune mechanism in those who are genetically susceptible to the disease. It is a hereditary disease. (1). It is a chronic enteropathy autoimmune disorder that affects both gender at any age, but has a female prevalence of the sex ratio. (2). Celiac symptoms are mostly various: diarrhoea, failure to gain weight (in young children), reduction of adipose tissue, irritability are the most common symptoms, though other signs and symptoms be clinically suggestive of celiac disease. Among the most characteristic symptoms there are migraine, iron deficiency anaemia, hypertransaminasemia, hepatosteatorrhea, meteorism.

It is now widely recognized that the mouth and teeth can be affected in celiac disease. Dental enamel defects and aphthous ulcers are the most common and well-documented oral manifestations, and several studies have confirmed the occurrence of these lesions in both children and adults with celiac disease. (3-9) Since this disease affects the Gastro intestinal system celiac teeth are more prone to decay. Immune mediated damage is suspected to be the primary cause. Calcium deficiency due to malabsorption may also play a role. (10) Stimulation of lymphocytes by gluten in the oral cavity has also been hypothesized as a reason for oral manifestations in celiac disease. (11) Detailed information on this topic can be found in a recent review by Pastore and colleagues (12)

## ORAL MANIFESTATIONS:

Celiac disease can develop at any age when solid foods are introduced into the diet. These defects are seen most commonly in the permanent dentition and tend to appear symmetrically and chronologically in all 4 quadrants, with more defects in the maxillary and mandibular incisors and molars. (13) Common oral and dental manifestations of celiac disease include the following:

- Enamel defects
- Recurrent aphthous ulcers
- Delayed eruption
- Cheilosis
- Oral lichen planus
- Atrophic glossitis
- Sjogren disease
- Dermatitis Herpetiformis
- Dental Enamel Hypoplasia
- Dry mouth syndrome

Enamel Defects and recurrent aphthous ulcer are the common oral manifestations seen in celiac patients

## ENAMEL DEFECTS:

Enamel defects include pitting, grooving and sometimes complete loss of enamel. A classification of these defects in celiac disease was developed by Aine and colleagues (14)

Dental enamel defects tend to occur symmetrically and chronologically in all four sections of dentition, with more defects seen in the maxillary and mandibular incisors and molars. Both hypoplasia and hypomineralization of the enamel can occur. A band of hypoplastic enamel is common, often with intact cusps. A break in the enamel and dentine formation can occur at a developmental stage which corresponds with the onset of gastrointestinal symptoms. The overall prevalence of systemic dental enamel defects in celiac disease patients with mixed or permanent dentition ranges from 9.5% to 95.9% (mean 51.1%); in patients with deciduous teeth, prevalence is 5.8% to 13.3% (mean 9.6%). (15)

## RECURRENT APHTHOUS ULCER:

Recurrent Aphthous Stomatitis (RAS) results to be the most frequent pathological expression where burning sensation occurs and progressively the affected sites become erythematous and evolves in erosive lesions. (16)

There are three different clinical forms of RAS: minor recurrent aphthous ulcer, major recurrent aphthous ulcer and herpetiform recurrent aphthous ulcers. (17)

## ORAL LICHEN PLANUS:

Oral Lichen Planus is a mucocutaneous disease, that affect both skin and mucosal sites as oral cavity, vagina penis esophagus. Lichen Planus can affect also scalp and hair follicles. It can also involve all the surfaces of the oral cavity specifically the cheek mucosa, bilaterally, tongue and gums. Possibly celiac disorders and Lichen Planus have the same auto immune etiopathogenetic mechanisms. (18)

**DENTAL ENAMEL HYPOPLASIA:**

Enamel Hypoplasia is a qualitative and quantitative alteration of dental hard mineralized tissues, due to an altered mineralization process of the dental enamel matrix.(19) The determining factor for the onset of enamel demineralization defects in celiac patients is unknown but the most likely hypothesis is either the hypocalcemia related to calcium malabsorption in the small bowel portion of the intestine during amelogenesis or the autoimmune mediating lymphocyte response versus the enamel organ.(20-22)

**DIAGNOSIS:**

Oral signs and symptoms (tooth enamel hypoplasia, oral mucosa ulcers, pain or burning of the tongue) in celiac patients are of fundamental importance as diagnostic aids for this disease (23) The main serologic markers described are antigliadin (AGA), antireticulin (ARA) and antiendomysium (EmA) antibodies. EmA antibodies have shown a high degree of specificity and sensitivity at various stages of the disease, and are at present considered the best tracer test (24) Histologic evaluation shows abnormal proximal small intestine mucosa with atrophied or absent villusities, increased crypt lengths and number of intraepithelial lymphocytes (25)

**TREATMENT:**

The treatment of Celiac disease is basically dietary, based on excluding gluten from the diet throughout life, both in symptomatic and asymptomatic individual and nutritional requirements must be met in accordance with the patient's age. In addition to diet, the celiac patient must pay attention to the composition of medications prescribed for them, since there may be gluten present in capsules, pills or oral suspensions (26)

**CONCLUSION:**

"Dentists says it is from fluoride , that the mother took tetracycline or that there was an illness early on " said Peter HR Green , director of celiac disease centre at the Columbia university ."Celiac disease isn't on the radar screen of dentists in the world" . Dentists should be made aware of these manifestations. Increased awareness of this disorder, along with careful questioning about other symptoms, family history, serologic screening tests and appropriate reference can help to establish a timely diagnosis and prevent complications of untreated celiac disease. The diagnosis of celiac disease can sometimes be made from a smile.

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