Review Article

An Update on Oral & Systemic Manifestations of GIT Diseases : A Narrative Review

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It is often said that mouth is the mirror of one's own health. There are several manifestations, which occur in oral cavity specifically for GIT diseases which can be as simple as change in oral or perioral pigmentation, recurrent apthous ulcers, atrophy of tongue, dysguesia, xerostomia, increased dental caries and poor periodontal health. Proper oral examination is must for examining the oral mucosal lesions which are many times indicator for underlying GIT illness to make a suspected diagnosis. A changes in oral mucosa may develop because of complication of or as partial manifestation of underlying GIT disease. These may also occur due to patient's concurrent drug therapy for underlying GIT conditions. Oral cavity provides a window to GIT tract also being a part of 1st cycle of digestion that takes place in oral cavity itself hence by knowing the early signs and symptoms associated with oral cavity can help us to refer the patient to a gastroenterologist which can help the patient in early diagnosis in preliminary stage of disease which will prevent further spread of disease and related complications. Early diagnosis & referral in cases of GIT cancers can be life saving for the patients as initially in these cases there is only GERD leading to erosions on surface of teeth and dentinal hypersensitivity. Hence, proper and detailed examination of oral cavity by a oral or general physician cannot be ignored and should be given primary importance. The oral cavity should be thought to be the window to the GIT tract.

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It is often said that mouth is the mirror of one's own health & also a window to examine the digestive health. The manifestations, which occur in oral cavity for any systemic disease, are due to its embryonic origin[1]. A complete oral cavity examination by a physician as a preliminary triage is of utmost importance as several oral mucosal lesions are many times indicator for underlying systemic illness to make a suspected diagnosis. A number of these may develop because of complication of or as partial manifestation of underlying systemic disease. These may also occur due to patient's concurrent drug therapy for underlying systemic conditions. Although oral lesions and symptoms are typically the outcome of local disease, they can occasionally be the first signs of systemic disease or even its main symptoms in some patients. Oral symptoms can occasionally lead to a diagnosis, but systemic diseases may also call for changes in oral healthcare for the safety of patients or staff. Examination of the mouth and tongue was highly valued even in ancient times[2]. The oral tissues are physically connected to the rest of the body and they are also linked by nerve, blood and lymphatic pathways. A good oral physician plays a significant part in preventive medicine as many GIT diseases have primary oral manifestations. These oral manifestations must be properly recognized if the patient is to receive appropriate diagnosis and referral for treatment. The lesions of the oral mucosa, tongue, gingiva, dentition, periodontium, salivary glands, facial skeleton, extra oral skin and other related structures are caused by some of the more common systemic/GIT diseases[3]. Most of these manifestations are nonspecific but should alert the physician to the possibility of concurrent GIT disease or systemic disease that may develop subsequently.

Editor's Comment :

- It is of utmost importance to do a perfect oral examination of hard and soft tissue of oral cavity to find out the signs and symptoms of indigestion or malabsorption. As early referral to gastroenterologist can be a preventive measure in diagnosing the disease in early stage and will prevent the risk of further complications in oral as well as GI tract.

GIT Diseases

The oral cavity is the portal of entry to the GI tract. Lined by stratified squamous epithelium, the tissues of the mouth are often involved when individuals have conditions affecting the GI system[4]. These may be immune- mediated or chemically mediated processes. GIT diseases will cause following alterations in oral mucosa of patient which can be manifested as —

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Crohn Disease :

Idiopathic Crohn disease can cause transmural inflammation, noncaseating granulomas and fissures across the whole GI tract. The majority of cases of this disease occur in Western nations and white males are significantly more likely to contract it. The second and third decades of life see the highest incidence, with the sixth and seventh decades seeing the second highest prevalence. Intermittent bouts of diarrhoea, constipation, abdominal pain and fever are among the signs of Crohn's disease. Patients might experience malabsorption, which would lead to malnutrition. People with chronic diseases may develop fissures or fistulas. Various oral lesions in Crohn disease will be seen in oral cavity as diffuse labial, gingival or mucosal swelling, cobble stoning of buccal mucosa and gingiva aphthous ulcers, mucosal tags, angular cheilitis, oral granulomas cobble stoning of gut mucosa (Figs 1-3).

Ulcerative Colitis :

An inflammatory disorder called ulcerative colitis resembles Crohn's disease in several ways. However, it only affects the mucosa and submucosa of the colon, sparing the muscularis. Abscesses, regions of haemorrhage and ulcerations are all examples of lesions in the colon. Aphthous ulcerations or superficial hemorrhagic ulcers are two oral manifestations of similar disease. Periods of exacerbation and remission are characteristics of ulcerative colitis and oral lesions typically accompany these episodes of the intestinal disease. Similar ulcerations could develop on the face, thighs, abdomen, and buttocks (Handlers, 1999). Up to 5-10% of patients develop aphthous ulcers or angular stomatitis. When the condition is exacerbating, oral symptoms including aphtous ulceration, superficial hemorrhagic ulcers, angular stomatitis, pyostomatitis vegetans, pyostomatitis gangrenosum[7].

Disease of Hepatobillary System :

Numerous bodily systems are impacted by chronic liver disease. One such system is the pathway for coagulation[9]. Many of the clotting factors required to halt bleeding are produced by the liver. Additionally, for Vitamin K, a fat-soluble vitamin, to be properly absorbed from the intestines, healthy liver function is necessary. Patients with liver disease may experience increased gingival bleeding after minor trauma or petechiae as a result of the decreased hemostasis that results from this. If it does so without inflammation, it is even more suggestive. Because there aren't many clotting factors in the body, serious haemorrhage can arise after any form of surgery, whether it's oral or not.

Oral Manifestation :

Jaundice, a yellow tint caused by bilirubin buildup in the submucosa, is the sole sign of severe liver disease that can be seen in the oral mucosa. Disorders in bilirubin metabolism, synthesis, or secretion can result in jaundice. The rate-limiting phase in the metabolism of bilirubin is affected by hepatocellular injury, which causes conjugated bilirubin to flow out of the cells and into the blood. This water-soluble material is deposited in the mucus membranes all throughout the body and is only loosely attached to albumin. When liver disease is the cause of jaundice, the liver's health is directly reflected by the colour yellow. Serum bilirubin levels that are more than 2.5-3 mg/dL or 2-3 times baseline are indicative of jaundice. The mucosae on the soft palate and sublingual region are thinner because of these regions are often first to reveal a yellow hue. With time, the yellow changes can be visible at any mucosal site. In patients Gastro-esophageal reflux there is decrease of the pH of the oral cavity below 5.5 leads to enamel damage, damage of the dentin which causes hypersensitivity and dental caries (Figs 3,4)[5,6].

Peutz-jegher's Syndrome :

Multiple intestinal polyps throughout the gastrointestinal system, but particularly in the small intestine, are a defining feature of Peutz-jeghers Syndrome. Approximately 10% of people with this disease have been documented to have gastro-intestinal and other body-wide malignancies. This

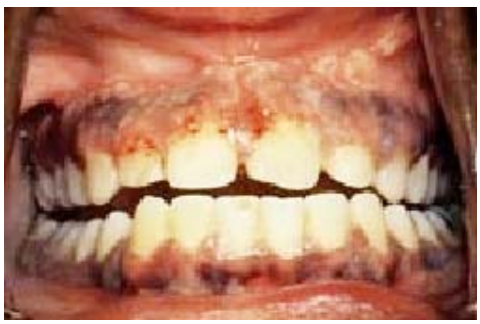

Fig 1 — Pystomatitis vegetans

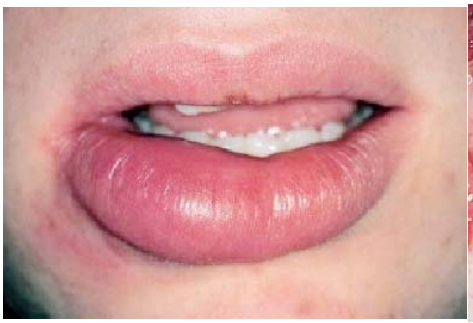

Fig 2 — Chelitis granulomatosa swelling of lower lip

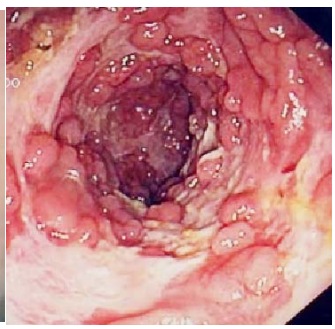

Fig 3 — Cobble stonning of mucosa

syndrome is distinguished by facial, lip and oral cavity pigmentation (present from birth)[12]. It's interesting to note that whereas intraoral mucosal pigmentation lasts throughout life, face pigmentation decreases as we age. No particular oral care is required (Fig 5).

Gardners Syndrome :

Osteomas, fibromas and epidermoid cysts are features of this hereditary disease, which also includes polyposis. Multiple impacted supernumerary (extra) teeth and intestinal polyposis, which reflect premalignant lesions, make up Gardner's syndrome. Few patients with this condition live past the age of 50 without surgical intervention because it is an autosomal dominant illness[15]. Dental radiography, such as pantomography, can give the earliest indication of the presence of this disease process in a young child with a family history of Gardner's syndrome[10].

Plummer-vinson Syndrome :

The majority of cases of Plummer-vinson Syndrome, also known as "hysterical dysphagia," are found in women in their fourth and fifth decades of life. This disease is characterised by dysphagia brought on by oesophageal stricture, which makes many patients fearful of choking[5,6]. Patients may also have spoon-shaped fingernails, koilonychia, splenomegaly, dry skin and a pallor with a lemon hue. Iron deficiency anaemia is the cause of the oral symptoms. Atrophic glossitis with erythema or fissures, angular cheilitis, weakening of the lips' vermilion margins and leukoplakia of the tongue are all oral symptoms. Oral mucous membrane examination will reveal atrophy and hyperkeratinization. These alterations in the mouth are comparable to those that occur in the pharynx and oesophagus. Upper digestive tract carcinoma has been reported in 10 to 30% of patients[11]. Thorough oral, pharyngeal and oesophageal examinations are mandatory to ensure that carcinoma is not present. Artificial saliva may lessen the fear of choking as well as the associated choking feeling[7,8].

Cowden's Syndrome :

Multiple hamartomas and neoplasia syndrome, also known as Cowden's syndrome, is an autosomal dominant condition that is primarily characterised by oral abnormalities, gastrointestinal polyps, breast and thyroid neoplasms and facial trichilemmomas. According to some experts, Cowden's Syndrome is a cutaneous indicator of internal cancers[13]. Numerous fibromas and lesions that resemble pebbly papillomas can be detected all over the oral cavity[14,15].

Pyostomatitis Vegetans :

Oral lesions in mouth, related to inflammatory bowel disease, are termed pyostomatitis vegetans, include deep fissures, pustules, ulcers and papillary projections. The course of these lesions tends to follow that of bowel disease. Most patients with these lesions have ulcerative colitis or Crohns disease. Some have liver disease, Oral lesional biopsy and gastrointestinal investigation are required. Management is with sulphasalazine or systemic corticosteroids (Fig 1).

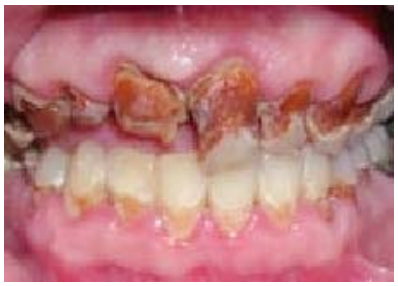

Fig 4 — Severe erosive changes affecting tooth enamel

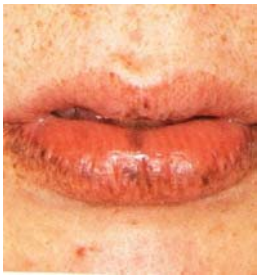

Fig 5 — Peutz-jegher's Syndrome Café-au-lit Pigmentation present on face and lip

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