Dental Erosion as an Indicator for Gastroesophageal Reflux Disease

ABSTRACT

Warfighter readiness is predicated on maintaining the optimal management of systemic health. A vital component of systemic health is oral health, both intrinsically and through the identification of oral manifestations of holistic disease processes. One such example, is the erosive effect of gastric acid on the dentition. Such an erosive change is readily identifiable via non-invasive dental examination and may be indicative of worrisome gastrointestinal problems. While there is evidence that dental erosion (DE) is often caused by Gastroesophageal Reflux Disease (GERD), the extent of DE and its relationship to the patient's current symptoms and proper medical management of GERD is not clearly understood. The purpose of this study was to evaluate the association between dental erosion and Gastroesophageal Reflux Disease.

Eighty subjects received a Basic Erosive Wear Examination (BEWE) for dental erosion and completed a Patient-Reported Outcome Measurement Information System (PROMIS) GERD survey. Patients with observed erosive patterns were referred for gastroenterological evaluation. The association between erosion and GERD was assessed using multiple regression. The extent of dental erosion was positively associated with GERD symptoms (B=0.585 CI: 0.21-0.96) in subjects not currently diagnosed with gastroesophageal reflux disease, as measured by the PROMIS survey. Of the 80 patients, the GI department evaluated 28 patients with more severe dental erosion and diagnosed 27 with GERD, 9 of which denied a past history of GERD. Of these patients, 20 patients underwent upper endoscopy, with 6 having positive esophageal findings - 5 with erosive esophagitis and 1 with Barrett's Esophagus (See Figure 1).

Patients presenting with clinically identified dental erosion may benefit from further medical evaluation and management of GERD. For a subset of patients, dental erosion may be the only clinical indication of untreated or undertreated GERD that could lead to developing serious esophageal changes. Dentists should consider referring dental erosion patients to Primary Care Managers or Gastrointestinal specialists to ensure patients' systemic conditions are identified and managed appropriately. Timely screening and referral management of DE patients has the potential to achieve earlier intervention to address the root cause of the disease process leading to less severe gastroesophageal outcomes and more predictable success with dental rehabilitation.

Figure 1: 65 year old male (BEWE 14, PROMIS 47) with erosion depicted here on maxillary arch (top left) and teeth #30-31 (bottom left), and esophageal erosions of LA Grade B (top right) and LA Grade D (bottom right).