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Dental findings of gastroesophageal reflux disease and treatment planning

Gastroözefageal reflü hastalığı ile ilişkili dental bulgular ve tedavi planlaması

To the Editor:

Gastroesophageal reflux (GER) is one of the most common digestive disorders known, and it effects approximately 40% of the general population (1). Excess amounts of gastric juice reflux into the esophagus, which subsequently induces symptoms with or without associated esophageal mucosal injury (esophagitis). Vomiting, heartburn or retrosternal burning discomfort, and oral regurgitation of bitter gastric contents are the most common symptoms of GER. Other than these symptoms, GER also has harmful effects on oral health (1). Long-term gastric reflux can bring about dental erosion, in particular, erosion of the posterior teeth, and the severity of which is related to the duration of GER, frequency of reflux, pH, type of acid, and the quality/quantity of saliva. Saliva protects the teeth because of its diluting and buffering role (2).

A 23 year old female who complained about sensitive gums and dental caries was seen at our clinic. According to patient's past medical history, it was noted that she was suffered from painful breasts, stomach problems, and a significant cough at night. Upon oral examination, there was noted demineralized places on the vestibule cervical region of her teeth (Figure 1A-C). Panoramic radiography showed that some restorations needed to be renewed, and dental caries was also diagnosed. Moreover, in several teeth, initial carious lesions were determined and at that time it was decided to follow these teeth until the beginning of restoration process. Before the restorative process, saliva flow rate, buffering capacity, and Streptococci mutans and/or Lactobacilli bacterial load counts were determined using an appropriate kit.

During restorative treatment, older restorations in the lower molars were restored with amalgam. Older composite restorations were changed with amalgam. Restorations were completed in three weeks time. Finally, fluoride application were performed on sensitive areas. Before releasing the patient to follow up, oral hygiene education was given to patient and necessary changes noted for her diet (limitations regarding fatty and spicy meals, avoidance of bedtime eating, avoidance of alcohol, caffeine, soft drinks, citrus and hard candy) were told.

Figure 1. Demineralized regions on teeth in a patient affected by gastroesophageal reflux disease. **A.** Front view. **B.** Right lateral view. **C.** Left lateral view.

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GER, especially its effect on dental erosions as well as the diseases slightly effect dental caries, is significant (3). Insufficient amounts of saliva may cause both dental caries and erosion. Protection of the oral cavity depends on a needed sufficient amount of saliva (4,5). The buffering capability of saliva may also be very important for preventing dental caries. In addition, salivary flow rate is accepted as an important factor for preventing both dental caries and erosion (4,6). According to the results of our analysis, stimulated salivary flow rate was found to be low, however buffering capacity was normal. Salivary streptococci mutans and Lactobacilli levels were measured, and both were noted to be higher than 10^5 CFU/ml.

If the salivary flow rate of the patient is diminished and regurgitation of gastric contents occurs at night time, the potential for damage to the teeth increases significantly (7). It is claimed that risk for development of cervical lesions is significantly elevated in patients with low unstimulated flow rates of saliva. Because saliva has a capability to buffer the acids on tooth surfaces, low salivary flow rates bring about initiation of dental erosion (7). It is proved by observing low salivary flow rates and cervical erosion regions in our patient.

We followed and applied all the needed treatments necessary for our patient of three years who was suffered from GER. After six months, symptoms of GER was reduced related to the treatment which was recommended by her gastroenterologist. Panoramic radiography was again taken and it was determined that there were no problems in regards to her fillings except for an unimportant dental erosion, however initial caries lesions were seriously expanded. Six months later after the continuing to follow this patient, it was reported that there were no problems with her fillings, whereas caries was expanded and new initial caries lesions appeared. During the one year follow up period, although we continued to apply preventative treatment, there were suprisingly no problems with the observed surfaces of the amalgam fillings, whereas we found caries in surfaces of teeth which were not applied any restoration. Nevertheless, both the dental and medical treatments were performed succesfully and as a result both reflux symptoms as well as the new caries problems were nearly resolved.

In the treatment of GER, the primary reason of the illness must be eliminated, and in order to accomplish this there needs to be close cooperation with a gastroenterologist. Furthermore, the patient's mouth must be followed closely, and development of damage must be prevented by using appropriate restorative materials. Successful treatment of this medical condition is necessary before the initation of the dental rehabilitation.

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