

A case report of patient practising yoga leading to dental erosion

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The article presents the case of a patient who was practising Yoga (Kunjali kriya) which led to dental erosion. Dental erosion can be due to extrinsic or intrinsic causes. The intrinsic causes include vomiting due to anorexia nervosa, regurgitation due to abnormality in gastro-intestinal tract or rumination. A 38-year-old male patient presented with a rare aetiology of dental erosion. He had practiced kunjali kriya one of the yogic exercises described in ancient India. In kunjali kriya the patient vomits on an empty stomach in order to clean his or her gastro-intestinal tract. The patient had practiced this form of exercise for over 12 years which had led to severe dental erosion. A proper case history should be evaluated for every patient so that they can be counselled for any factors that could be detrimental to dental health. Early diagnosis is paramount in recognising the aetiology of dental erosion so that detrimental effects on the dentition can be prevented.

Key words: Tooth erosion, acid reflux, yoga

The term dental erosion describes the process of gradual destruction of teeth by chemical processes that do not involve bacteria^{1,2}. Dental erosion can have extrinsic or intrinsic causes, the former including acidic foods, such as citrus fruits and acidic beverages³⁻⁵ and some medicines such as effervescent vitamin C preparations⁶ and iron tonics⁷. Exposure to extrinsic acid can also be associated with leisure activities such as frequent swimming in chlorinated pools¹.

Intrinsic causes include recurrent vomiting as a result of psychological disorders such as anorexia⁸ and bulimia nervosa or regurgitation of gastric contents because of some abnormality in the gastro-intestinal tract⁹. One further factor in dental erosion is low salivary flow, which results in inadequate rinsing and buffering of demineralising acids on tooth surfaces¹⁰. Apart from the aetiological factors of dental erosion stated above there can be several others that can lead to loss of tooth material.

Yoga is a Hindu spiritual discipline a part of which including simple meditation, breathing exercises and specific body positions is widely practiced for health and relaxation in India. Shatkarma (Shat – six; karma – action) or the six-cleansing processes are described in Hatha yoga. The shatkarmas are said to be secret practices as one must be personally instructed to do them, and taught how to perform them. They are

thought to specifically increase the vital capacity of the practitioner¹¹.

Vaman Dhauti or Vyaghra Kriya is one of the six shatkarmas in which vaman stands for vomit and vyagra for tiger. Just as a tiger regurgitates its food from the stomach three hours after a meal, the practitioner also vomits the food from the stomach three hours after the meal. If the practitioner finds it difficult he is supposed to drink a glass or two of warm saline water and then tickle the back of the throat with first two fingers to induce vomiting. There is one more practice called Kunjali Kriya identical to Vyaghra Kriya, except it is performed on an empty stomach¹¹. The acids regurgitated/ vomited from the stomach act on the teeth and erode them. The daily practice of such activity would lead to a considerable amount of tooth substance loss and could lead to severe sensitivity of the teeth.

Case report

A male patient aged 38 years reported to the Department of Prosthodontics, SDM College of Dental Sciences and Hospital, complaining of sensitivity of his upper anterior teeth. The patient was also concerned about his worn out teeth and their appearance. On examination it was found that the palatal surface of upper anterior teeth had been worn with the typical picture of

erosion. All the potential causes of dental erosion were considered and a detailed case-history was recorded. The patient presented with the history of practice of Yoga for the previous 12 years, practising Kunjal Kriya in the morning. This practice of vomiting the gastric contents into the mouth had led to severe dental erosion, graded as score 3 according to Tooth Wear Index (TWI) of Smith and Knight¹².

The patient was counselled regarding his practice of Yoga (Kunjal Kriya), the harmful effects of the acidic gastric contents on the teeth were explained and the patient was advised to discontinue the habit. Diagnostic impressions were made, study casts prepared and treatment planned for the patient.

The teeth were prepared to receive Porcelain Fused to Metal (PFM) crowns, shade selection was done and temporary crowns were cemented. At the next appointment the patient's teeth were restored with the crowns and the patient expressed himself quite happy with his restored dentition and smile.

Discussion

Dental erosion has been reported with varying prevalence in the population and may be as high as 42%¹³. The palatal surfaces of the maxillary incisors and the occlusal surfaces of molars are common sites of erosive tooth wear¹⁴. The association between palatal erosion



Figure 1. Extra oral view of the patient before treatment

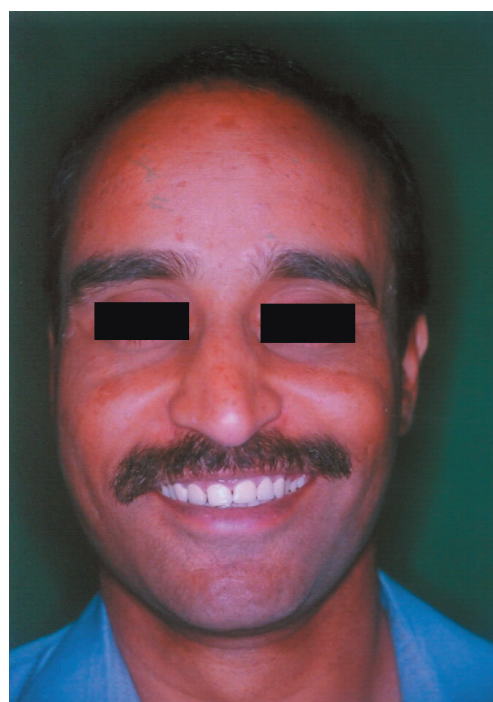


Figure 3. Extra oral view of the patient after completion of treatment with PFM crowns

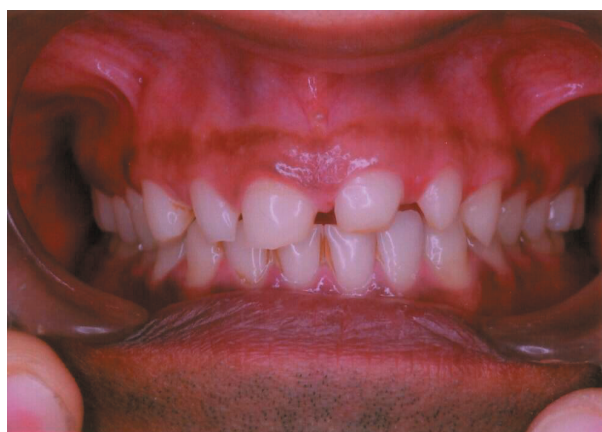


Figure 2. Intra oral view of the patient before treatment



Figure 4. Intra oral view of the patient after treatment

and regurgitated acid has long been established⁹. The development of palatal erosion although not definitive may lead to suspicion that the cause is from intrinsic acid sources of gastric origin which enter the mouth from gastric reflux, vomiting or rumination.

Rumination is an uncommon condition in which people deliberately induce reflux of a small amount of gastric contents and chew it before reswallowing¹⁵. Vomiting is the propulsion of the stomach contents, co-ordinated by a centre in the brain and triggered by a well recognised pattern of physiological mechanisms¹⁶. Regurgitation on the other hand is the passive movement of gastric juice from the stomach into the mouth. If there is evidence or suspicion of gastric reflux or vomiting activity then contact should be made with patient's general medical practitioner outlining the problem. The patient should be referred to a gastroenterologist for investigation and treatment may be instituted at the earliest opportunity⁹.

If acid from the stomach repeatedly enters the patient's mouth they should be advised to rinse out with water or sodium carbonate and avoid tooth cleaning at this time. A hard acrylic occlusal guard may be used at night, if there is evidence of parafunctional activity causing attrition combined with reflux activity at night. Patients with significant erosion and dentine exposure may complain of tooth sensitivity. The use of fluoride mouthrinses and fluoride varnishes may be helpful but they must be used frequently and regularly. A high fluoride content toothpaste, 1,450ppm, can be prescribed as long as it is not highly abrasive¹⁷. In patients with refractory sensitivity, dentine bonding agents can help to alleviate the symptoms. In extreme cases pulp extirpation is necessary.

The presence of erosive lesions warrant the evaluation of a proper case history to note and know the specific reason, so that further damage can be halted and proper precautionary measures can be taken at the earliest opportunity. It is essential that the aetiology of erosion be identified as the clinical management of the patient is based on the management of aetiological factors.

Conclusion

Early diagnosis is important so that possible aetiological factors can be identified and intervention provided at the right time. Preventive programmes must remain the cornerstone in the management of dental erosion. Treating eroded teeth without addressing the aetiological factors could merely disguise the situation.

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