

Gingivitis Artefacta—A Case Report of a Patient Undergoing Orthodontic Treatment

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Refereed Paper

Introduction

Self-injurious behaviour (SIB) may be defined as that which results in the infliction of physical damage and, perhaps, pain upon oneself. Self-inflicted injuries are not uncommon (Ayer and Levin, 1974), and range in severity from simple nail-biting to more extreme forms of mutilation, with oral trauma sometimes being the only presenting manifestation. Although the typical clinical features of oral SIB are well documented (Stewart, 1976; Blanton *et al.*, 1977; Pattison, 1983), they often present a difficult diagnostic problem for the clinician and, even when recognized, the method of their development and their management are not clearly understood.

Although many cases of self-inflicted oral injuries have been reported since Neil (1958) first reported a case involving self-mutilation of the tongue, there do not appear to be any reports of factitious oral injuries in a patient undergoing orthodontic treatment. The following case report describes gingivitis artefacta in a patient undergoing orthodontic treatment.

Case Report

An 11-year-old girl (L.K.) was assessed with a view to undertaking orthodontic treatment. Her medical history was uncomplicated. Her dental history, however, revealed that she had been referred to the department of paediatric dentistry at the age of 5 years, 6 months for the management of recession affecting the gingivae in the upper incisor region. At this time examination revealed that she had a healthy and intact dentition, except for an absent $\underline{1}$, but had severe gingival recession affecting the labial aspects of her remaining deciduous upper incisors. There were no signs of inflammation or ulceration, and initial management was conservative. Follow-up a few weeks later showed that the permanent upper central incisors had erupted with a healthy gingival attachment except for an area of ulceration affecting the palatal aspect of the $\underline{1}$. This lesion was thought to be traumatic in origin and SIB was suspected. The patient, however, denied this and the parents were unaware of any form of habitual trauma. This area of ulceration resolved in due course and there were no further episodes noted at her 6-monthly review appointments over the next 6 years.

Orthodontic assessment revealed that the patient presented in the permanent dentition with a Class I incisor relationship on a mild Skeletal III base. The $\underline{2}$ was absent with $\underline{3}$ and $\underline{1}$ in contact. There was a 3-mm midline diastema, and the buccal segment relationship was Class I on the left and Class II on the right. There was a left-sided unilateral crossbite, but no functional displacement. Radiographs confirmed the absence of $\underline{2}$ and all four third molars (Figure 1).

It was decided to recreate the space for the absent $\underline{2}$. Treatment was started with a removable appliance incorporating an expansion screw to simultaneously correct the crossbite and distalize $\underline{654}$, supported with combination pull headgear. Compliance was good and treatment progressed uneventfully.

Subsequently, a Quad-helix was fitted to continue the upper arch expansion. This was used in conjunction with upper and lower pre-adjusted Edgewise fixed appliances to localize space for the absent $\underline{2}$ and detail the occlusion. Three months after the placement of the fixed appliances, a saucer-shaped area of ulceration affecting the labial gingival margin of the $\underline{1}$ was observed, which appeared to be traumatic in origin (Figure 2). Upon questioning, the patient readily admitted traumatizing her gingivae with her fingernail, and claimed that ever since the fixed appliances had been fitted she had an 'itchy' feeling in the area involved and had an uncontrollable urge to scratch the area to gain some relief. The area of ulceration was shown to the patient. Her parents were also made aware of the problem and instructed to intercept any signs that she was continuing this habit.

At review, 1 month later, it was noted that she had diverted her attention to the $\underline{2}$, where there was a keyhole-shaped lesion at the gingival margin with some associated recession (Figure 3). The patient was, again, shown the damage she was causing and requested to stop. During this appointment, space opening was commenced between the $\underline{1}$ and $\underline{3}$ to allow for the replacement of $\underline{2}$.

At review 4 weeks later, the gingival tissues around the $\underline{2}$ had healed, albeit with some localized recession, but the patient continued to display SIB and was now damaging the area around the distal aspect of the $\underline{1}$ (Figure 4). This area had been attacked more vigorously than the other areas and there it was seen that 3 mm of cementum had been exposed. Advice was sought from the Department of Periodontology, and the patient was advised to carefully clean around this area with Corsodyl gel and to try wearing

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FIG. 1 Pretreatment photograph.

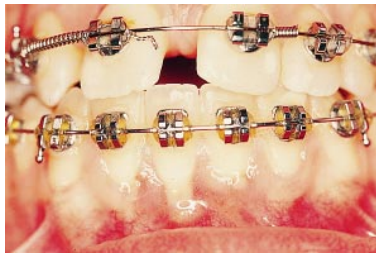


FIG. 2 Lesion 1.



FIG. 5 Lesion 1 at the time of removal of fixed appliances.

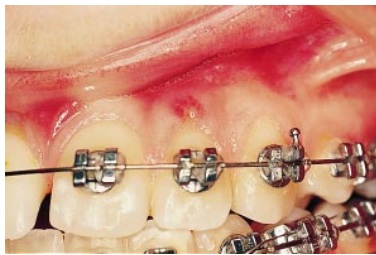


FIG. 3 Lesion 2.



FIG. 6 Patient after placement of resin retained bridge 2.



FIG. 4 Initial lesion 1.

gloves to bed in an attempt to stop this habit. The push coil in place (3-1) was not reactivated in an attempt to minimize the forces acting on this tooth, in case this was the aggravating factor. Despite this, over subsequent appointments, the recession around this tooth worsened (Figure 5) and this was associated with a degree of sensitivity, which only served to perpetuate the situation.

Following fixed appliance removal, an upper removable retainer was fitted to maintain the space for the 2. After 4 months, a resin-bonded bridge was fitted to replace the absent 2, but due to poor communication, the patient did not re-attend to have her retainer adjusted, which allowed some relapse of the rotation previously affecting the 1.

(Figure 6). When the patient attended for the adjustment of her retainers she was not only traumatizing the 1, but also the 1. Later during the retention period, her attention turned to the 3 and the patient admitted that this was occurring during school lessons. The fact that these episodes had continued well into the retention period, when no active tooth movement was being undertaken, meant that it was felt that this behaviour was perhaps more deep-seated than originally thought. However, an assessment with a clinical psychologist was declined and at the next review, 3 months later, the trauma was seen to have stopped. The patient is still under long-term review.

Discussion

A review of the literature reveals that self-inflicted oral injuries are not uncommon and since the late 1950s there have been more than 55 reported cases. Although the gingivae is the most commonly targeted tissue, no structure in the oral cavity is immune from the effects of this type of behaviour. Amongst the more extreme examples reported are auto-extraction (Plesset, 1959; Altom and DiAngelis, 1989) and a fractured mandible (Goldstein and Dragon, 1967). Oral self-mutilation is a well recognized feature of

certain neurological conditions, most notably Lesch-Nyhan Syndrome, but also De George's Syndrome, autism, and congenital indifference to pain (LaBanc and Epker, 1981)

Most case reports suggest that the method of producing injury is by 'picking' or 'scratching' the tissues with fingers or fingernails. Other objects have also been reported to have been used including knives, toothpicks, and even hair (Golden and Chosak, 1964; Blanton *et al.*, 1977; Groves, 1979), although this case appears to be the first where this type of behaviour has been diagnosed in a patient undergoing orthodontic treatment. In the case reported by Beckett *et al.* (1995), although the habit was apparently active during orthodontic treatment, this was not recognized until some time after treatment had been completed.

Stewart (1976) has divided self-injurious behaviour affecting the gingival tissues into gingivitis artefacta minor and major. Gingivitis artefacta minor was recognized as being more common and thought to be provoked by a pre-existing locus of irritation. In this form, the habit was claimed to respond readily to simple treatment that removed the underlying source of irritation. In contrast, the injuries suffered in gingivitis artefacta major were said to be more widespread, so that several areas of the mouth could be affected simultaneously. This type of behaviour also differed in being more resistant to conventional forms of treatment and was probably associated with an emotional disorder.

In the present case, it seems almost certain that the gingival recession noted when the patient was 5½ years old was the result of self-inflicted trauma. Stewart (1976) has previously reported gingivitis artefacta associated with exfoliating primary teeth and found that the habit ceased once the offending tooth had been removed, presumably indicating that the exfoliating tooth was the source of irritation that triggers the traumatic habit. This first episode of self-injury ceased with the eruption of the permanent incisors.

Upon the placement of fixed orthodontic appliances, however, the patient resumed the habit. She claimed that her gums felt itchy and she therefore scratched them to obtain some relief, a description previously reported by other authors (Golden and Chosack, 1964; Hasler and Schultz, 1968). She eventually concentrated her efforts on the gingival margin at the distal aspect of the 11, where a significant amount of orthodontic tooth movement was occurring to open space for the replacement of the absent lateral incisor. It may therefore be reasonable to hypothesize that the orthodontic forces acted as a source of irritation which led to the re-establishment of her SIB. In the case reported by Beckett *et al.* (1995) the patient had the habit of inserting the sharp end of a pin into the gingival crevice on the palatal aspect of an upper incisor tooth during orthodontic treatment and it is therefore possible that orthodontic treatment may act as trigger to this sort of behaviour in susceptible patients.

Should a patient demonstrate such behaviour, the orthodontist is faced with a difficult problem not normally encountered during other types of conventional dental treatment. The clinician must weigh up the advantages of completing treatment with the potential disadvantages of abandoning treatment midway and so lessening any impact of SIB. If it is decided to continue treatment, there is also a

dilemma between the need for regular appointments for appliance adjustments and the need to almost ignore SIB. It is believed that patients exhibiting SIB crave attention and the regular visits necessary for appliance adjustments may only serve to reinforce the pattern of behaviour (Ayer and Levin, 1974; Rodd, 1995).

In the case presented here, the initial gingival recession associated with the exfoliating deciduous incisors was localized and resolved once the teeth were shed naturally, and so may reasonably have been classified as a case of gingivitis artefacta minor. When the condition reappeared, many factors pointed to this also being another episode of gingivitis artefacta minor. The lesions were known to be of traumatic origin, were associated with a locus of irritation, and did not appear simultaneously. However, the fact that the lesions varied in location and continued to appear after orthodontics had ceased, and that the condition had reappeared some 6½ years after the first episode, suggests that this type of behaviour is perhaps deeply entrenched, and may be a case of gingivitis artefacta major. It is therefore difficult to definitely classify this patient's condition as either gingivitis artefacta minor or major at this time, and the patient will therefore be kept under long-term review to monitor her for any further signs of similar behaviour. Despite the fact that the chance to be referred to a clinical psychologist was refused, it is not the role of the clinician to try and explore the reasons for such behaviour as they do not have the necessary training or skills (Rodd, 1995).

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