

Self-Injurious Behaviour in Children with Special Health Care Needs: a Report of Three Cases

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ABSTRACT

Self-Injurious behaviours are repetitive acts that result in physical damage to the individual. They are associated with intellectual and developmental disabilities, autism spectrum disorders and some syndromes. In the maxillofacial region these behaviours include variable degrees of lip sucking and biting, tongue biting, cheek and digit biting and bruxism. This paper presents three cases of self-injurious behaviours with lip biting, bruxism and tongue avulsion.

Important clinical findings included bleeding, ulcers, tissue tenderness, mutilation and loss. Though some researchers have tried to establish a standard management protocol, management of these behaviours require an individualization of cases using simple devices and procedures as the health conditions of the patients and their characteristic oral lesions differ.

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Introduction

Self - injurious behaviour (SIB) is any harmful behaviour that an individual inflicts upon himself or herself and is usually one of the many challenges faced in the management of individuals with developmental disorders or mental retardation (Barrera, Violo and Graver, 2007; Murphy et al,1999). SIB is an injurious act on oneself that causes destruction or alteration of body tissue without the individual having the intention of dying in the process (Favazza and Rosenthal, 1993).

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This phenomenon of self-harm has been described with multiple names such as self-injury, self-mutilation, deliberate self-harm, deliberate self-injury, self-abuse, self-inflicted violence, non-suicidal self-injury, self-cutting, self-mutilative behaviour and parasuicide (Klonsky et al, 2011). Several hypotheses such as social, behavioral, pharmacological and environmental factors have been linked to the development of SIB and the treatment for SIB is usually based on these hypotheses (Mahatmya, Zobel and Valdovinos, 2008).

Winchel & Stanley (1991) also reported the involvement of serotonergic, dopaminergic, and opiate neurotransmitter systems in the expression of self-injurious behaviours. Hence the use of pharmacological methods in the management of SIB is tailored towards controlling the deregulation in the dopaminergic, opiate, or serotonergic systems by using dopamine antagonists, serotonin reuptake inhibitors, and opiate antagonists (Winchel and Stanley,1991; Ragazzini et al, 2014).

Simeon & Hollander (2001) and Favazza (1996) proposed a simple, comprehensive and clinically useful classification method in dealing with SIB. They included the stereotypic, major, compulsive and impulsive categories. Each category tends to be more prevalent in certain mental disorders. The Stereotypic category includes head banging, self-hitting, lip or hand chewing, skin picking or scratching, self-biting and hair pulling. These are usually seen in cases of mental retardation such as cerebral palsy, autism and syndromes such as Lesch-Nyhan and Prader-Willi syndromes. The major category includes castration, limb amputation, eye enucleation; seen in cases of transsexualism, psychosis and intoxication. The compulsive category includes hair pulling, skin picking, and nail biting as seen in Trichotillomania. The impulsive category includes skin cutting, skin burning, self-hitting which are seen in people with borderline/antisocial personality, post-traumatic stress disorder and eating disorder.

In the oral region, self-injuries can be classified as either organic or functional (Singh et al, 2008). In organic oral SIB, the subjects are affected by genetic syndromes such as Lesch-Nyhan, Cornelia de Lange, Gilles de la Tourette, Munchausen, Familial Disautonomia, congenital insensitivity to pain, and other entities such as autism, mental retardation, hereditary sensory neuropathies, encephalitis, congenital malformations, congenital infectious diseases, and epilepsy (Medina et al, 2003; Compilato, Corsello and Campisi, 2012). In these patients, the injuries are inflicted unconsciously without specific intent to self-harm (Limeres et al, 2013). Conversely, in functional type the lesions are caused consciously, as a response to certain stimuli, in order to seek attention.

The anatomical regions most frequently affected are the head, particularly the oral and perioral tissues, the hands, and the neck (Lucavechi, 2007). According to Briere (2008), about 75% of SIB affect the head and neck region involving oral structures like the tongue, buccal mucosa, periodontal tissues and the teeth.

There are varying methods of managing these self-injuries and these usually concentrate on the hypotheses of its development while successful treatment outcome considers the underlying cause of the behavior (Hall, Oliver and Murphy, 2001).

It is therefore important for dentists (especially paediatric dentists and special care dental specialist) to make early identification and diagnosis of self-inflicted traumatic conditions particularly when it involves the craniofacial regions. Attempts have been made to establish a common

protocol for treatment but it is clear that successful treatment involves developing effective methods for managing the conditions, individualised or customised for individual patients.

This report describes a series of self-injurious behavior seen in 3 female patients with special health care needs who reported with different forms of self-injuries. Different approaches were used in managing these cases.

Case 1

A.F, a 7-year-old comatose female was admitted on the ward under the Paediatric Neurosurgical Unit Lagos University Teaching Hospital on account of Intra-cerebral abscess. The patient was said to have recurrent seizure attacks. During the seizures, she would bite her lower lip and clench the jaws. Examination showed crusted areas on the upper lip, lower lip and commissures. There were bite marks on the lower lip and an ulcer on the left side of the lower lip close to the angle of the mouth (figure 1). A diagnosis of self-injurious behaviours was made.

Oral prophylaxis was carried out at a regular interval of two weeks, alginate impression of the maxillary arch was made and a dental stone cast was prepared. A preformed mouth guard softened in hot water was adapted on the dental stone cast (figure 2) and was later fitted satisfactorily to the patient's mouth. The mother and the nursing staff were instructed to retain the appliance in the mouth except during oral hygiene protocols (figure 3).

Weekly reviews showed satisfactory healing of the lower and upper lip (figure 4). Patient was later lost to follow up as she was discharged against medical advice.



Figure 1: Bite marks on the lower lip and ulcers on the left side of the upper lip, lower lip and close to the angle of the mouth



Figure 2: Shows a preformed mouth guard softened in hot water and adapted on a dental stone cast.



Figure 3: The mouth guard in place inside the mouth



Figure 4: Healing patient's lower lip during a 2-week review

Case 2

O.C, a 12-month-old female with cerebral palsy presented at the Paediatric Dental Unit of the Lagos University Teaching Hospital with intense lower lip biting of two months duration, bruxism involving the anterior teeth, bleeding from the lower lip and recurrent episodes of seizures which aggravated the lip biting. The mother claimed that her daughter had not attended paediatric neurology clinic for six months because she saw no improvement. On examination, the lower lip appeared swollen and pale with areas of erythema and ulceration (figure 5). Teeth numbers 72, 81 were missing and teeth numbers 71, 82 were of grade III mobility. The mother could not give account of the missing teeth which happened three weeks prior to the visitation.

Oral Prophylaxis was carried out and patient was treated with a modification made to her pacifier. This was made by attachment of an elastic band to the wings of the pacifier (figure 6). The elastic attachment was hung on the neck and this allowed the pacifier to be retained in the mouth thereby providing a barrier between the teeth and the lip (figure 7). The mobile teeth 71, 82 were extracted to avoid inhalation or swallowing if they accidentally fall off when not under supervision (figure 8).

Review after four weeks showed satisfactory healing of the lower lip and by the third month, there was complete healing of the lower lip (figures 9 and 10). Patient was discharged to the Burns and Plastic unit of the hospital for lip reconstruction and the paediatric neurologist for continued management.



Figure 5: A clinical photograph showing patient's ulcerated and mutilated lower lip at presentation.



Figure 7: Patient with the modified pacifier in the mouth



Figure 6: Patient's modified pacifier with an elastic tape which was attached to the wings of the pacifier to keep it retained in the mouth.



Figure 8: Healing ulcerated lower lip two weeks after intervention. It also shows mobile teeth 71, 82 (grade 3 mobility) which were later extracted.



Figure 9: Significant healing of the lower lips 4 weeks after the patient has commenced the use of the pacifier



Figure 10: Patient after extraction of mobile teeth 71, 82 and significant healing at 10 weeks after initial visit.

Case 3

KO, a 9-month-old female (a twin) with cerebral palsy presented at the paediatric dental unit of Lagos State Teaching Hospital with avulsion (bifurcation) of the tip of the tongue and traumatized lower lip of two months duration. History of trauma coincided with the eruption of the teeth 71,81 with which she bit her tongue and lower lip frequently. This resulted in intermittent bleeding from the tongue and lower lip, associated with pain. Patient was said to cry but would continue the biting. Examination showed a "V" shaped defect at the tip of the tongue and ulcerated areas on the lower lip

(figures 11 and 12). The lower lip appeared swollen and pale. Teeth present were 71, 72, 81,82 and none was mobile). Oral Prophylaxis was done. The incisal edges of the lower central incisors, 71 and 81 were rounded off with hand piece and bur and 5% Sodium fluoride varnish applied on the teeth. A review of 2 weeks showed satisfactory healing of the tip of the tongue and lower lip. The patient had also stopped the habit (figure 13).



Figure 11: A clinical picture of patient showing avulsed and ulcerated tip of the tongue at presentation



Figure 12: Ulcerated lower lip in relation to the lower central incisors at presentation.



Figure 13: Healing tip of the tongue and lower lip 2 weeks after rounding off teeth with hand piece and bur.

Discussion

In this report, the three cases of oral SIB were in females and they all had some form of mental retardation. However, Limeres et al, (2013) reported that oral self-injurious behaviour is more prevalent in males (2:1) and the sites most frequently affected are the lower lip and the tongue. According to Winchel and Stanley (1991) and Bodfish (1995), SIB is common in individuals with mental retardation ranging from 3% to 46% with the severity of mental retardation correlating with the presence and severity of SIB. Silva and Fonseca, (2003) showed that early detection and intervention of SIB in patients with developmental disabilities influenced the successful outcome of the therapeutic interventions thereby enhancing the patients' quality of life.

Regarding the three cases in this study, their self-injuries were of the organic type and inflicted unconsciously without any intent to self-harm. In addition, they were all individuals with some form of mental retardation and therefore required special health care.

Though Hallett in 1994 tried to establish a common clinical protocol for management of oral self-injuries; the general state of health of the individuals and the specific lesions of the individuals are variable (El Bouihi et al, 2009). Therefore, in the management of SIB, it is important to obtain a detailed description of the person's self-injurious behavior and possible

relationships between the behavior and his/her physical and social environment. Limeres et al, 2013 noted that there is no standardised treatment protocol but that the treatment of oral self-injury should be individualised. Treatment should however be aimed at prevention of further injuries and healing of existing ones. The management protocols include counseling/psychotherapy, behavior modification or therapy, oral appliance therapy, hospitalisation and the use of medications. Dental extraction in primary dentition or odontoplasty could also be done. Regular follow up and reconstruction of lost tissues are also indicated.

In the cases reported above, different methods were employed in their management. Cases 1 and 2 received appliance therapy: a bite block and modification of a pacifier; while case 3 had a conservative therapy of grinding down the mandibular central incisors. Mehta (2015) treated a similar case of bifurcation of the tip of the tongue in a 10-month-old boy by grinding down the mandibular primary incisors to avoid further injury to the tongue.

Several studies (Silva and da Fonseca, 2003; Ansari, 2014; Ragazzini et al, 2014; Mehta, 2015; Sijerria et al, 2017) showed different approaches to preventing self-inflicted oral trauma ranging from grinding down of the mandibular incisors, fabrication of resin mouth guard, modification of Hawley's retainer with lateral shields, cap splint and occlusal guards. Extraction of teeth has also been advocated in severe cases where the lesion is repetitively traumatised and does not show signs of healing (Cameron and Widmer, 2008).

According to recommendations by Hanson, Ogle and Giron (1975) appliances used for management, should be designed to meet some basic requirements such as reflection of the soft tissues away from the occlusal table of standing teeth; permitting the full range of mandibular motion; permitting optimal daily oral care; resistance to breakage and displacement forces over an indefinite period of time; allowing the healing of traumatized oral tissues; ease of fabricated and installation without discomfort or risk to the patient; easy maintenance by the health care providers and those directly caring for the patient. He also suggested that the appliance should not be a potential source of further injury to the patient and that careful consideration of the cause of the condition should be made before selection of the materials and design of the appliance.

In this report, Hanson, Ogle and Giron (1975) recommendations were taken into consideration and appliances used met most of the requirements where

necessary. In addition, the ages of the patients were put into consideration while making choices of appliance hence the use of a modified child pacifier as an appliance (figure 7). Parents and caregivers also played important roles by adhering to the instructions given and making sure the appliances were retained in the mouth for adequate period of time. However, it is of utmost importance that patients are followed up and adequately monitored for a successful treatment outcome and long-term success.

Conclusion

Patients presenting with self - injurious behavior should be evaluated and managed individually with the goal of intercepting tissue damage, malocclusion and skeletal abnormalities. Parents should be counseled and motivated for effective treatment and long-term success. This paper highlights that the management of SIB should be individualized and may not require the use of pharmacological agents.

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