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RESEARCH ARTICLE

INNOVATIVE APPLIANCE THERAPY FOR SELF INJURIOUS TONGUE BITING HABIT IN A CHILD: A CASE REPORT

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ABSTRACT

Background: Self-injurious behaviour (SIB) is defined as deliberate harm to one's body without suicidal intent. SIB is commonly seen in individuals with psychotic problems, character disorder, mental retardation, coma and genetic syndromes. These injuries may manifest as factitial ulcers, gingivitis, periodontitis and self extraction. Hence, the recognition and understanding of these injuries are indispensable for effective clinical management in dentistry. **Method:** This article presents a case of self - injurious behaviour in a 13 – year old child with ADHD having severe ulcerations on the tongue due to insistent tongue biting habit. As a part of multidisciplinary approach to deal with self-injurious behaviour, a custom tongue protective appliance was fabricated to prevent the tongue biting, hence, facilitating the healing of lesion and habit control. **Result:** The use of a custom tongue protective appliance facilitated complete healing of the lesions within three months. In addition to mechanotherapy; behaviour therapy, pharmacological support, and parental counselling significantly contributed to the overall success of management. **Conclusion:** The present case shows that although diagnosing such cases can be very challenging, but once diagnosed, via proper treatment plan, thorough knowledge and appropriate appliance, these conditions can be managed effectively.

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INTRODUCTION

Self-injurious behaviour (SIB), also termed masochistic habits or self-mutilation, refers to deliberate destruction or alteration of body tissue without suicidal intent. It occurs in association with psychotic disorders, developmental anomalies, and genetic syndromes (1). Prevalence in the general population is estimated at 750 cases per 100,000 individuals, but rates are markedly higher among persons with intellectual disabilities, with studies reporting occurrence in nearly 81% (2). Beyond intellectual impairment, SIB is linked to psychiatric and neurological conditions including psychotic disorders, personality disturbances, coma states, and genetic syndromes (3,4). Common repetitive acts include head hitting, lip and finger biting, skin laceration, and mutilation of oral, ocular, or genital structures. Approximately 75% of factitial injuries are localized to the head and neck region, underscoring their relevance in dental practice. Intraoral manifestations involve gingiva, teeth, periodontal tissues, lips, and mucosa, often presenting as ulcers, gingivitis, periodontitis, or self-extraction (5). SIB can be categorized as organic or functional. Organic forms occur compulsively without conscious intent, often linked to hereditary or neurobiological disorders such as Lesch–Nyhan disease, congenital toxoplasmosis, congenital insensitivity to pain, Tourette's syndrome, Cornelia de Lange syndrome, schizophrenia, and stereotypic movement disorder. Functional self-mutilation arises in response to external or internal stimuli and may serve behavioural purposes. It is subdivided into:

- **A:** self-injury maintained by secondary gain
- **B:**factitial or neurotic excoriations
- **C:** self-mutilation during psychotic episodes (6).

CASE REPORT

A 13-year-old male patient presented with his parents with the chief complaint of insistent habit of biting his tongue leading to ulceration on the lower left side of tongue for the past 6 months. At the time of clinical examination, the patient had a healthy appearance but seemed a little anxious. He was below average in his studies since 1 year according to his parents. Socio-economic status revealed that parents were from middle class background leading a happy contented life. When parents were asked about any unusual habits that involved child's

mouth, they told that the child had the habit of biting his tongue insistently since 6 months which led to the ulcerative lesions and bleeding. He was given oral and topical medications earlier but as he was not able to control his habit, there was no improvement. He was referred to a psychologist due to his habit and was diagnosed with Attention Deficit Hyperactivity Disorder(ADHD). A detailed family history was taken to rule out the history of deleterious habits running in the family. All were negative and unsupportive of the cause. A detailed intra-oral examination was performed in which there was evidence of an irregular ulcero-proliferative lesion on the dorsolateral and ventrolateral surface of tongue predominantly on the left side measuring 3cm*2cm (Figure 1,2).

Figure 1. Pre-treatment- ventral surface of tongue

Figure 2. Pre-treatment – lateral surface of tongue

The lesion had irregular margin with white necrotic slough. The base of the lesion was erythematous with spontaneous bleeding points present. Induration was seen to some extent. Tenderness was present on palpation but tongue movement was not restricted. Crowding was present with respect to lower anteriors and bilateral class I molar relationship was seen. Based on history and detailed examination of the patient, it was concluded that severe ulcerations on the tongue was primarily the result of self-injury/deletrerious habit of biting tongue. As a primary treatment modality, decision was made to deliver a habit breaking appliance. For immediate relief, upper and lower impressions were made on the same day and soft occlusal splint was fabricated and inserted in patient's mouth to prevent the lesion from progressing further. For symptomatic treatment, topical steroids and anaesthetic gel were prescribed.

A Multidisciplinary action plan was made by a team which comprised of a dentist, a paediatrician and a psychologist. Treatment included

- **Behaviour therapy:** Habit reversal training and positive reinforcement.
- **Mechano-therapy:** Customised habit breaking appliance to protect the tongue.
- **Pharmacological support:** Medication for ADHD to be continued under paediatric supervision.
- **Parental counselling:** Monitoring, encouragement and stress reduction.

Behaviour therapy: The technique used for behaviour modification included- positive reinforcement while self-mutilative responses were absent and withdrawal of positive reinforcement upon self-mutilation (7). At each consultation, the patient was given instructions regarding the importance of habit interruption for the maintenance of oral health until total removal of the appliance (8).

Mechano-therapy: After delivering upper and lower occlusal splints in the initial visit, follow-up was done after 1 week and it was observed that patient compliance with the occlusal splint was very poor and results were not satisfying. So, decision was made to fabricate a custom made tongue protecting appliance (Figure- 3,4)

Figure 3. Habit Breaking Appliance – Anterior aspect

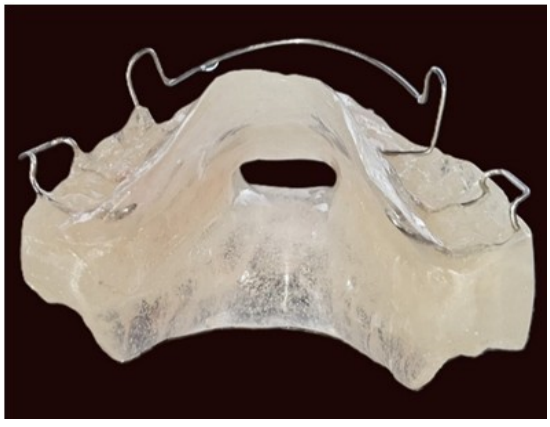

Figure 4. Habit Breaking Appliance – Posterior aspect

Aims of appliance therapy

- The appliance was constructed with a vertical dimension slightly exceeding the vertical dimension at rest, so it would act as a painful reminder to stop the habit and preventing the tongue from resting on the occlusal table.
- The appliance was also extended lingually so as to avoid the contact between tongue and teeth.

The primary principle guiding its design was the elimination of tongue-tooth contact during rest, which facilitated habit control in patients exhibiting impulsivity and hyperactivity. Ideally, the principal aim of any appliance therapy is to achieve adequate bite opening to disengage the occlusion, while ensuring that the vertical dimension remains within the patient's physiological resting capacity. In this case, however, the appliance was employed in a punitive context, so the vertical opening was deliberately set beyond the freeway space.

Overall, the intervention was directed towards preventing tongue biting and ensuring effective management through precise appliance construction. The design of the appliance was inspired by concepts derived from the oral screen and the bio-nator. Basically, it was a mono-bloc appliance that covered the occlusal, palatal and lingual surface of upper and lower dentition with retentive components in the upper arch. An opening was given in the anterior region to facilitate breathing for the patient. Patient was instructed to wear the appliance for minimum 16-18 hours/day (Figure – 5).

Figure 5. Intraoral view demonstrating appliance insertion within oral cavity

Initially, the patient experienced pain associated with excessive mouth opening; however, adaptation occurred over time period of 7-10 days. Then, the patient was kept on 2 week followup (Figure – 6), 1 month follow-up (Figure – 7,8) and 3 months follow-up (Figure – 9,10). On 3rd month follow-up, we could see a clear reduction in lesion size, improved tissue colour and a healthier, healing surface. Inflammation was reduced and overall contour of tissue showed positive therapeutic response.

For pharmacological support, the patient continued the medications for ADHD as prescribed by the pediatrician and remained under regular psychological counseling. Once all the lesions were healed, wearing time of appliance was reduced from 16-18 hours/day to 10 hours/day to wearing at night time only.

Figure 6. Intraoral view following 2 weeks of appliance therapy

Figure 7. Intraoral view following 1 month of appliance therapy

Figure 8. Intraoral view following 1 month of appliance therapy

Figure 9. Follow-up intraoral view showing healed tongue after 3 months of therapy

Figure 10. Follow-up intraoral view showing healed tongue after 3 months of therapy

DISCUSSION

Management of SIB presents significant challenges for clinicians, with accurate diagnosis often proving difficult. Oral manifestations compromise tissue form and function, necessitating dental intervention as part of a multidisciplinary approach (7). In the present case, diagnosis was established through clinical observation and corroborated by parental history. Appliance design for tongue biting is complex due to muscular strength and interference with occlusion (8). Persistent biting can cause soft tissue, vascular, and lymphatic damage, leading to edema and repeated trauma (9,10). Effective management requires maintaining tongue position and preventing dentition contact (11). ADHD, the most common behavioural disorder in school-aged children, has a prevalence of ~8% (12). It is classified into inattentive, hyperactive-impulsive, and combined subtypes (13). The present patient exhibited the hyperactive-impulsive subtype, with impulsivity contributing to tongue biting.

Stewart and Kernohan classified factitial oral lesions into three types:

- **A:** lesions superimposed on pre-existing pathology
- **B:** lesions from identifiable habits
- **C:** lesions of complex or unknown etiology (14).

This patient was Type B. Management combined behavioural strategies, pharmacological support, and appliance therapy. Literature describes various intraoral and extraoral devices, including acrylic horseshoe appliances, shields, mouthguards, thermoplastic devices, chin cups, facemasks, and lip separators (5). Success depends on appliance design, parental involvement, and consistent follow-up.

CONCLUSION

Self-injurious behaviour presents a complex challenge, particularly when oral structures are involved. Its multifactorial etiology requires careful diagnosis and multidisciplinary management. Dental practitioners play a critical role in recognizing oral manifestations, preventing trauma, and designing protective appliances. This case demonstrates the importance of individualized appliance therapy, behavioural modification, pharmacological support, and parental involvement. Regular follow-up and collaboration across specialties are essential for long-term success.

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Glossary of abbreviations

ADHD: Attention Deficit Hyperactivity Disorder
SIB: Self Injurious Behaviours

REFERENCES

1. Saemundsson SR, Roberts MW. Oral self-injurious behavior in the developmentally disabled: Review and a case. ASDC J Dent Child 1997;64(3):205-9, 228.
2. Silva DR, Da Foncica MA. Self injurious behaviour as a challenge for the dental practice: A case report. Paediatr Dent. 2003;25(1):62-66.
3. Winchel RM, Stanley M. Self-injurious behavior: A review of the behavior and biology of self-mutilation. Am J Psychiatry 1991;148(3):306-17.
4. Liang-Ru C, Jeng-Fen L. Successful treatment of self inflicted oral mutilation using an acrylic splint retained by a head gear. Paediatr Dent. 1996;18(5):408 10.
5. Medina AC, Sogbe R, Gómez-Rey AM, Mata M. Factitial oral lesions in an autistic paediatric patient. Int J Paediatr Dent. 2003;13:130-37.
6. Altom RL, DiAngelis AJ. Multiple autoextractions: Oral self-mutilation reviewed. Oral Surg Oral Med Oral Pathol 1989;67(3):271-4.
7. John JB, Praburajan V, Stalin A, Krishnan M. Masochistic habits in a child patient: a case report and its management. Int J CritIllnInj Sci. 2013 Jul Sep;3(3):220 2.
8. DenBestent PK, Mciver FT. Oral Self-Mutilation in a child with congenital toxoplasmosis: A clinical report. Pediatr Dent 1984;6:98-101.
9. Razmus TF. Tongue ulcerated by trauma: report of case. J Am Dent Assoc1992;123:82-6.
10. Saah D, Braveman I, Elidan J, Nageris B. Traumatic macroglossia. Ann OtolRhinolLaryngol1993;102:729-30.
11. Pigno MA, Funk JJ. Prevention of tongue biting with a removable oral device: a clinical report. J Prosthet Dent. 2000;83(5):508 10.
12. Young S, Adamo N, Ásgeirsdóttir BB, et al. Females with ADHD: An expert consensus statement taking a lifespan approach providing 1808 Williams et al. Annals of Medicine & Surgery (2023) guidance for the identification and treatment of attention-deficit/ hyper activity disorder in girls and women. BMC Psychiatry 2020;20:404.
13. Salvi V, Migliarese G, Venturi V, et al. ADHD in adults: clinical subtypes and associated characteristics. RivPsichiatr2019;54:84–9.
14. Stewart DJ, Kernohan DC. Self-inflicted gingival injuries: Gingivitis artefacta, factitial gingivitis. Dent Pract Dent Rec 1972;22:418-26.

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