

INTRODUCTION

Self-mutilation (SM) is a behavioral disorder in which an individual intentionally damages a part of the body without a conscious intent to commit suicide. It is most often found as cuts, burns, scratches, blunt injury, bites, and interferences with wound healing. The dentition is perhaps the source with where the patient can easily perpetrate the most damage.<sup>1</sup> Oral structures that are targeted include the gum, the buccal mucosa, the tongue, the periodontal tissues, and teeth.<sup>2</sup> SM has only been reported in the form of case reports, making it difficult to establish standard clinical protocols. Thus, the management and treatment of SM need to be tailored to the special circumstances of the individual case.

ETIOLOGY AND EPIDEMIOLOGY

It has been suggested that any cause of discomfort, such as sinusitis, toothache, or headache, can lead to SM behaviors. However, it is more commonly found in certain diseases, syndromes, and disorders. Dopaminergic, opioid, and serotonergic models have been used to explain SM. Patients with genetic syndromes such as Lesch-Nyhan, Cornelia de Lange, Gilles de la Tourette, Munchhausen, Familial Dysautonomia, and congenital insensitivity to pain may exhibit behaviors of oral SM. About 75% of SM lesions are located in the head and neck region.<sup>3</sup> Oral SM behaviors have also been associated with other neurological disorders such as autism, mental retardation, hereditary sensory neuropathies, encephalitis, congenital malformations, congenital infectious diseases, epilepsy, and resection of brain tumor. The prevalence for SM in the general population has not been fully defined, but it has been said to affect 750 individuals per 100,000.<sup>2</sup>

DIAGNOSIS AND MANAGEMENT

For a lesion to be classified as a non-suicidal SM injury, it must be socially unacceptable, be repetitive, and cause mild to moderate damage.<sup>3</sup> Management of SM behaviors may be classified into four groups: psychological treatment, pharmacological treatment, physical restraints, and surgical procedures. Psychological treatments include behavioral therapies and must usually be combined with other therapeutic approaches.<sup>2</sup> Pharmacological treatments include using agonists, or antagonists of certain chemical substances found in the pathogenesis of SM behaviors. However, most drugs usually have minimal or no effect.<sup>2</sup> Physical restraint is the only method that enables SM to be prevented directly. For oral lesions due to biting, restrictive oral devices are recommended.<sup>1</sup>

Ultimately, in some patients, the severity of SM and the failure of other treatment modalities lead to a need to consider tooth extraction or other surgical procedures. While it is considered a last resort option, it has been shown to be successful in preventing damage to the soft tissues. In children, teeth are extracted simultaneously or in sequence. Enucleation of developing tooth buds may be recommended to reduce anesthesia events.<sup>2</sup>

In this case report, the patient's medical history was significant for the history of a brain tumor, specifically a pilocytic astrocytoma. Near total resection of the pilocytic astrocytoma resulted in several neuropsychiatric symptoms, including extensive oral/facial self-injurious behavior not responsive to medical therapy. Due to the patient's complex medical history and the intensity, frequency, and methods of self-mutilation, several treatment approaches were attempted, and management of this patient was individualized.

CASE REPORT

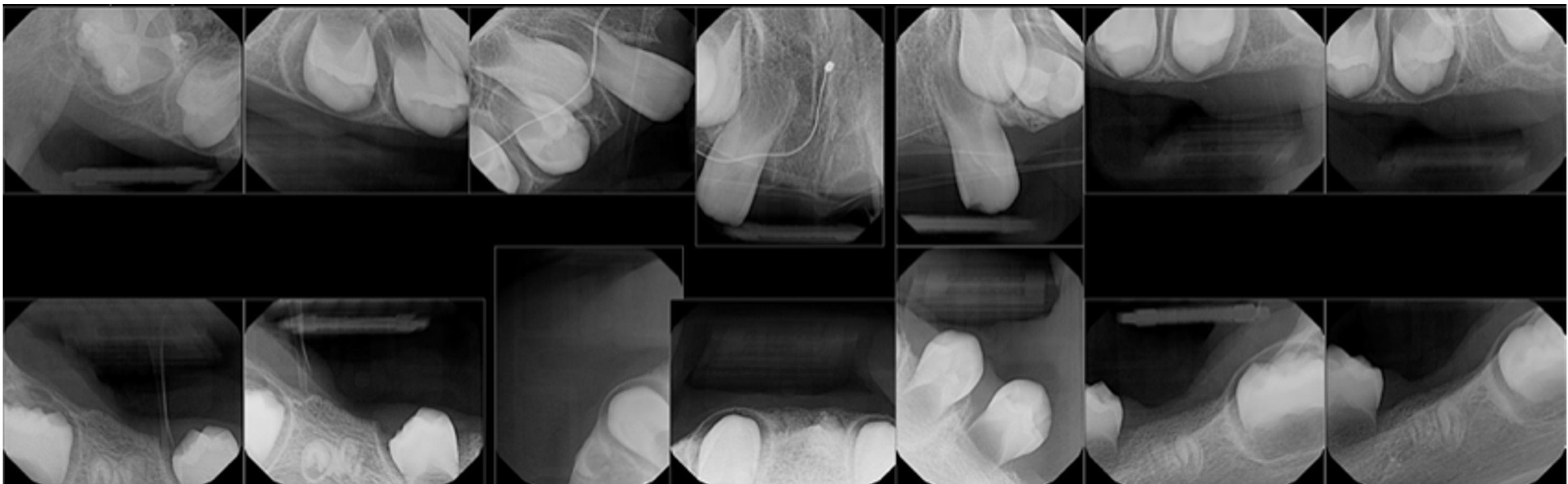
Following near total resection of a pilocytic astrocytoma at the age of 5, this patient experienced severe neuropsychiatric symptoms, including SM behavior not responsive to medical therapy. Postoperative imaging revealed a small amount of residual tumor and evidence of ischemic brain injury. The patient also developed resulting spastic cerebral palsy, experienced multiple cardiovascular accidents with resulting bilateral cranial nerve III palsies and L-sided hemiparesis, and developmental regression.

This patient presented to the dental clinic one year after the resection. Mom reported the child scratching, biting, and punching oral structures with injuries to lips, tongue, and gingiva. This led to dental extractions under GA at the age of 6 (Figure 1). In addition to self-injurious behaviors to oral structures, the patient has damaged his right eye permanently.



**Figure 1.** Initial extraoral and intraoral photographs obtained at age six. The patient was admitted for inpatient monitoring for 130 days following repair of lip injury.

The patient presented again at the age of nine with injuries to oral tissues from the continuation of his self-injurious behavior due to erupting teeth. Clinical examination revealed the following intraoral and extraoral findings: erupted mandibular canines, no other visible teeth intraorally, significant scar tissue on tongue and lips, and bilateral severe keratinization of buccal mucosa and mandibular vestibule (Figure 2 and 3).



**Figure 2.** Full mouth radiographs taken in general anesthesia at the age of eight.

TREATMENT

Since initial presentation, the course of dental treatment has included occlusal reduction of teeth to minimize injuries to oral structures as well as extraction of all erupted dentition under four separate general anesthesia events. Following general anesthesia procedures, the patient complained of pain and continued to self-mutilate during recovery and healing, including forcibly removing sutures prematurely. Thus, the patient required inpatient monitoring with restraints for days to months following each procedure.

The definitive long-term treatment plan is determined to be extraction and enucleation of all existing, developing, and impacted dentition under general anesthesia with prolonged postoperative inpatient monitoring to decrease the number of anesthesia events and aim to minimize SM.



**Figure 3.** Extraoral and intraoral photographs taken at OMFS consult five years post resection of the pilocytic astrocytoma.

CONCLUSION

The treatment of SM disorders in children and adolescents is not able to be standardized due to the variety of etiologies, intensities of behaviors, and factors involved in response to therapy. Recommendations for management strategies include progressing from most conservative to least conservative treatment alternatives, such as psychological treatment, physical restraints, and surgical techniques.

This case report presents a patient with an extensive history of self-mutilation and the complex management of their oral care. Despite attempts for a conservative approach, the current plan is for complete enucleation and extraction of remaining teeth to avoid future injury.

REFERENCES

1. Shapira J, Birenboim R, Shoshani M, et al. Overcoming the oral aspects of -self-mutilation: description of a method. *Spec Care Dent Off Publ Am Assoc Hosp Dent Acad Dent Handicap Am Soc Geriatr Dent.* 2016;36(5):282-287.
2. Limeres J, Feijoo JF, Baluja F, Seoane JM, Diniz M, Diz P. Oral self-injury. An update. *Dent Traumatol.* 2013;29(1):8-14.
3. Cannavale R, Itró A, Campisi G, Compilato D, Colella G. Oral self-injuries: clinical findings in a series of 19 patients. *Med Oral Patol Oral Cirugia Bucal.* 2015;20(2):e123-129.