ACTA SCIENTIFIC DENTAL SCIENCES

Volume 10 Issue 5 May 2026

Case Report

Dental Management of Children with Cerebral Palsy Under Local Anesthesia: Two Case Reports

Berin Dhanya NB*

Senior Lecturer, Department of Pediatric and Preventive Dentistry, Rajas Dental College and Hospital, Kavalkinaru, TamilNadu, India

***Corresponding Author:** Berin Dhanya NB, Senior Lecturer, Department of Pediatric and Preventive Dentistry, Rajas Dental College and Hospital, Kavalkinaru, TamilNadu, India.

DOI: 10.31080/ASDS.2026.10.2107

Received: March 17, 2026

Published: April 14, 2026

Abstract

Cerebral palsy (CP) is not a specific disease entity but rather a collection of disabling disorders that affect a child's movement, muscle tone, and coordination caused by insult and permanent damage to the brain in the prenatal and perinatal periods, during which time the central nervous system is still maturing. This disability might involve muscle weakness, stiffness, or paralysis; poor balance or irregular gait; and uncoordinated or involuntary movements. The large number of oral manifestations associated with motor disorders in patients with CP makes the dentist an indispensable member of the multidisciplinary team. Oral rehabilitation of these children is mostly carried out under general anesthesia, management under local anesthesia requires clinical expertise, dentist's skills and knowledge which is even more challenging. This paper discusses the management of two such patients under local anesthesia. Case 1, a preadolescent child with cerebral palsy spastic type (diplegic), with pulpally involved permanent molar was treated endodontically and restored with crown. Case 2, a preschool child with cerebral palsy dyskinetic type (quadriplegic) with global developmental delay treated for tooth extraction following trauma. An integrated approach should be used including physical therapy, and speech therapy to provide for a better quality of life for the patient and, consequently, the caregiver through the improvement in the patient's oral and general health.

Keywords: Cerebral Palsy; Local Anesthesia; Dental Management; Dentistry for Disabled

Introduction

Cerebral palsy is a nonprogressive disorder of the development of movement and posture, causing activity limitations that are attributed to nonprogressive disturbances that occur in the developing fetal or infant brain - American Academy for Cerebral Palsy and Developmental Medicine [1]. The worldwide incidence of the condition is 2–2.5 cases/1000 live births [2]. The incidence of the condition in India is estimated to be around 3 cases/1000 live births [2] with high correlation to premature labor or delivery G80.9 is the ICD-10 code for cerebral palsy.

The etiology is mainly due to decreased oxygenation of the developing brain such as meningitis and encephalitis; toxemias of pregnancy; premature birth [5], congenital defects of the brain; poisoning with certain drugs and heavy metals responsible for brain damage [3].

This condition manifests intellectual disability, seizure disorders, sensory deficits, speech disorders, and joint contractures. Difficulties in self-care and inadequate oral hygiene practices thereby increasing the dental biofilm formation leads to dental caries and periodontal diseases, difficulties with muscle control

for sucking, chewing, and swallowing, mouth breathing, dental and soft tissue trauma, bruxism, malocclusion, and problems with the temporomandibular joint are seen [4,5]. Given the large number of oral manifestations in persons with CP, greater integration of pediatric dentists into the multidisciplinary teams that treat patients with CP is essential [6].

The scope of this paper is to discuss the management of cerebral palsy children in dental practice under local anesthesia.

Case Report

Case 1

A male patient aged 13 years diagnosed with cerebral palsy of spastic type (Diplegic) reported with the deep dental caries with respect to 36.

On physical examination, the child is wheelchair bound (Figure 1), weakly built, hands and legs are hypotonic with the foot rotated internally (Figure 2), and difficulty in maintaining an upright posture. The child is currently undergoing physiotherapy for the same and is not under any medications.

Figure 1: Physical examination of case 1 and 2.

Figure 2: Case 1 - hypotonic hands and legs with foot rotated internally.

The behavior of the patient is definitely positive (Frankel's behavior rating). The child has no speech problems and can respond to verbal commands. The child is not attending any school program and has problems with social interactions and communication.

The parents were consanguineously related and the child has an elder brother diagnosed with spastic cerebral palsy was treated effectively by an NGO hospital. The prenatal history indicated that the mother lacked adequate family support during pregnancy. The child was delivered prematurely at 30 weeks of gestation through a normal vaginal delivery while the mother was en route to the hospital".

OPG investigation revealed (Figure 3) chronic irreversible pulpitis wrt 36 treated with root canal treatment and permanent tooth stainless steel crown (Figure 3) followed by post operative instructions.

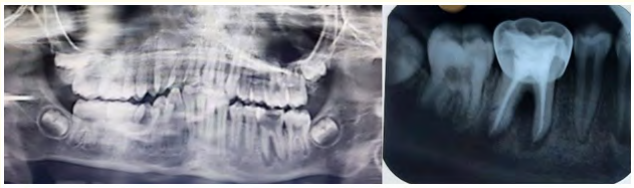

Figure 3: Case 1 pre and post-operative radiograph.

Case 2

A male patient aged 7 years diagnosed with hypotonic cerebral palsy of Dyskinetic type (Quadriplegia) with global developmental

delay reported with trauma caused lacerations on the maxillary gingiva and labial mucosa with luxation of 61 and palatally erupting 21 (Figure 4).

Figure 4: Case 2 pre and post-operative images.

On physical examination (Figure 1), the child is wheelchair bound, well nourished and built, and frequent involvement of neck musculature which results in excessive movement of the head with the mouth constantly open and drooling of saliva, uncontrolled jaw movements causing abrupt closure of the jaws. The child had difficulties with speech and was responding minimally to verbal commands by making withering sounds.

The child's parents were consanguineously related, uneducated, had limited access to facilities, and were inconsistent with the medical treatment. The child is under various antiepileptic medications, due to seizure attacks and inconsistent with the treatment. The child was undergoing physiotherapy to improve muscle coordination. There was no significant prenatal history and the child was prematurely born.

It was provisionally diagnosed as luxation of 61. Radiographs could not be taken due to lack of coordination oral musculature. Extraction of 61 was done under local anesthesia (Figure 4).

In cases 1 and 2, thorough medical and dental history was recorded and the parent/guardian was interviewed for the same, informed consent was obtained before the initiation of the treatment.

Discussion

Cerebral palsy can be spastic (75%) primarily due to lesions in the cerebrum, dyskinetic (15%) caused by lesions in the basal ganglia, ataxic (5%) caused by lesions in the cerebellum or mixed types (10%) caused by lesions in the cerebrum and cerebellum [7]. These children are also more prone to trauma due to lack of muscle coordination as seen in case 2. Cerebral palsy patients should be examined in terms of personal characteristics, symptoms, and behavior and then proceed with the treatment. The management of these children poses challenges because of uncontrolled involuntary movements, difficulty in communication, inability to open the mouth properly, abnormal posture [8].

In case 1, the patient showed normal response to verbal commands with apprehension and ability to cooperate on the dental chair and successfully dealt with endodontic treatment of 36 and necessary preventive therapy. In case 2, protective stabilization was used with the help of parents to provide emergency care.

We established a calm, friendly, and professional atmosphere by facilitating the relaxation of spastic muscles by maintaining touch/pressure therapy, general inhibition on the level of arousal, slow firm strokes with flat hand over neck/trunk extensions to get improved postural tone. This kinesthetic awareness provides security and support for the child. Other behavior management strategies used in both cases are non-verbal communication, parental presence, positive reinforcements, audio-visual aids, and frequent time breaks between treatments. Mouth props are used to control involuntary jaw movements.

Brushing positions such as standing behind the wheelchair and supporting the patients head for case 1 and sitting on the floor/bed/sofa for case 2 are explained along with modifications of toothbrush.

The parents were motivated to seek child's medical treatment to improve the quality of life. Adjunct therapies such as physiotherapy to enhance mobility, strength, and also to reinforce and strengthen appropriate neural connections that will help them perform daily activities. Occupational therapists, speech and language therapists, recreational therapists, and other healthcare professionals to address the diverse needs of these children [9] were recommended. Thus, a multidisciplinary approach with the active involvement of the caregiver and long-term follow-up is an important strategy in promoting health and improving oral health-related quality of life [10].

Conclusion

Guidance and education of the parents regarding good oral hygiene, and diet complement therapeutic care.[11] Complete oral

rehabilitation of a child with cerebral palsy was found to enhance the oral health and overall well-being of the child to improve the quality of life.

Patient Consent Form

Obtained.

Conflict of Interest

Nil.

Financial Support and Sponsorship

Nil.

Acknowledgement

I would like to thank the Department of Pediatric and Preventive Dentistry, Rajarajeswari Dental College and Hospital, Bangalore for her acedemic guidance and support in the management of cases.

Bibliography

1. Salles PS., *et al*. "Dental needs and management of children with special health care needs according to type of disability". *Journal of Dentistry for Children* 79.3 (2012): 165-169.
2. MedIndia Inc. Medindia.net. Kathy Jones. Incidence of Cerebral Palsy Remains Constant in India on Indian Health News; c1997-2013.
3. McDonald R E., *et al*. "Dentistry for the child and adolescent". Mosby (2010).
4. Jain M., *et al*. "Oral health status of mentally disabled subjects in India". *Journal of Oral Science* 51.3 (2009): 333-340.
5. Rodrigues dos Santos MT., *et al*. "Oral conditions in children with cerebral palsy". *Journal of Dentistry Child (Chic)* 70 (2003): 40-46.
6. Guaré RO and Ciampioni AL. "Dental caries prevalence in primary dentition of cerebral-palsied children". *Journal of Clinical Pediatric Dentistry* 27 (2003): 287-292.
7. Hagberg B., *et al*. "The disequilibrium syndrome in cerebral palsy: Clinical aspects and treatment". *Acta Paediatrica Scandinavica* 61.226 (1972): 1-63.
8. Kumar S., *et al*. "Determinants for oral hygiene and periodontal status among mentally disabled children and adolescents". *Journal of Indian Society of Pedodontics and Preventive Dentistry* 27 (2009): 151-157.
9. Sehrawat N., *et al*. "Cerebral palsy: A dental update". *International Journal of Clinical Pediatric Dentistry* 7 (2014): 109-118.
10. Jaya AR., *et al*. "Full mouth rehabilitation of a child with cerebral palsy under general anesthesia". *Journal of Health Science and Research* 5 (2014): 29-32.
11. Das UM., *et al*. "Importance of oral hygiene habits in mentally disabled children". *International Journal of Clinical Pediatric Dentistry* 3 (2010): 39-42.