



(CASE REPORT)



INSIGHTS INTO MANAGING PANAYIOTOPOULOUS SYNDROME IN PEDIATRIC DENTISTRY

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ABSTRACT

A prevalent multifocal autonomic epileptic condition in children, Panayiotopoulos syndrome has important clinical, neurobiological, and treatment implications. It first appears in children who are otherwise healthy between the ages of three and six. It is characterized by primarily ictal vomiting, autonomic symptoms, and seizures. The EEG frequently exhibits occipital dominance along with shifting and/or numerous foci. Panayiotopoulos syndrome is frequently mistaken for occipital epilepsy and acute non-epileptic conditions such as encephalitis, syncope, cyclic vomiting, or atypical migraine, despite having distinctive clinical and EEG symptoms. In order to avoid misdiagnosis and ineffective therapy, an accurate diagnosis depends on identifying the pattern of autonomic seizures with distinctive EEG findings. For Panayiotopoulos syndrome (PS) patients to receive comprehensive care, it is crucial to be aware of potential oral symptoms like hypersalivation or the effects of recurrent vomiting. This emphasizes the necessity for multidisciplinary management, including neurological and dental evaluations as necessary. This literary contribution represents an exceptionally sparse anomaly in scientific documentation, as the specialized dental management of Panayiotopoulos syndrome within pediatric dentistry remains an profoundly underreported clinical intersection.

Keywords: Panayiotopoulos syndrome; Electroencephalogram; Status epilepticus; Infantile seizures; Hemifacial convulsions; Encephalitis,

1 INTRODUCTION

The International League Against Epilepsy has officially recognized Panayiotopoulos syndrome (PS) as a prevalent idiopathic childhood-specific seizure condition. Panayiotopoulos syndrome is described as "a benign age-related focal seizure disorder occurring in early and mid-childhood." It is typified by prolonged seizures with primarily autonomic symptoms and an electroencephalogram (EEG) with changing and/or numerous foci, frequently with occipital

predominance.² Panayiotopoulos syndrome primarily appears as autonomic seizures and is best described as idiopathic sensitivity to early onset benign infantile seizures with electroencephalogram occipital or electroencephalogram .¹

2 CASE REPORT

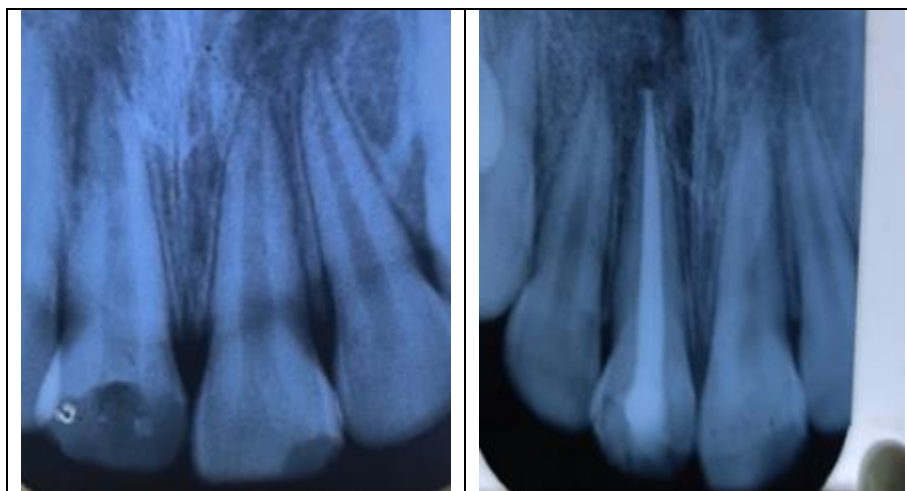


Figure 1: IOPAR of 11



Figure 2: EEG Variations in panayiotopoulous syndrome

A 11 year old patient came to the Department with the complaint of fractured upper front tooth . Patient had history episodic headache for six years with blepharospasm and later diagnosed as Panayiotopoulos syndrome . Nerve conduction study report shows EEG obtained 10-20 system of electrode application. The awake record shows background activity of 10Hz ALPHA which is bilaterally symmetrical and synchronous well attenuating with eye opening. EEG shows intermittent spike and wave discharge with 4 Hz frequency noted over right greater than left parieto occipital leads with secondary generalization noted.MR imaging reveals no evident or significant abnormality in the brain parenchyma .Bilateral maxillary,ethmoid and sphenoid sinusitis was present.Patient was on Valproate and Topiramate. On intraoral examination Elli's class 3 fracture was present on 11.Root canal treatment was done on 21 under nitrous oxide sedation to reduce stress.Direct exposure of eyes towards light during treatment was avoided.



Figure 3: Pre operative and post operative intraoral view

3 DISCUSSION

Hemifacial convulsions, speech arrest, oropharyngolaryngeal motions, and hypersalivation are the predominant symptoms of seizures, which often begin between the ages of 7 and 9.³ The two main symptoms of Panayiotopoulos syndrome are autonomic epileptic seizures and autonomic status epilepticus. Autonomic seizures include episodes of disturbed autonomic function with emesis as the predominant symptom; other autonomic manifestations include pallor (or, less frequently, flushing or cyanosis), mydriasis (or, less frequently, miosis), cardiorespiratory and thermoregulatory alterations, incontinence of urine and/or feces; cardiorespiratory arrest is an exception. More-conventional seizure symptoms frequently occur after the onset of autonomic seizures. The infant, who was completely awake at first, becomes disoriented and unresponsive. The eyes shift to one side or are wide open. Only half of the seizures result in either generalized convulsions or short hemiconvulsions. It is very uncommon to have convulsive status epilepticus. The only characteristics of the seizures could be autonomic signs. Autonomic status epilepticus, the more prevalent nonconvulsive status epilepticus in healthy children, is caused by half of the seizures in Panayiotopoulos syndrome lasting more than thirty minutes. Seizures happen during sleep in two thirds of cases.²

3.1 Oral manifestations

PS does not cause structural dental defects its presentations are strictly ictal manifestations stemming from autonomic and motor nervous system activation which include hypersalivation and drooling, involuntary repetitive movements such as sucking, chewing during seizure episode⁴. Speech arrest, hemifacial spasms are due to secondary effects. Secondary effects due to anti-epileptic medications like xerostomia, gingival overgrowth and ulcers can occur.⁵

3.2 Diagnostic challenges

PS can resemble a number of conditions, including gastroenteritis, gastric reflux disease, encephalitis, syncope, migraine, sleep difficulties, and even metabolic diseases, Panayiotopoulos syndrome frequently presents with an insidious onset.⁶

A sleep EEG or a polysomnographic examination may be the most helpful test to differentiate between autonomic epileptic and nonepileptic conditions when the symptoms are primarily experienced during sleep. Early detection can lower the high morbidity associated with poor management as well as the large expenses incurred by the national health service due to inappropriate diagnosis and treatment methods. Both the frequency and intensity of epileptic seizures as well as the propensity for potentially fatal autonomic cardiorespiratory involvement should be considered when determining if antiseizure therapy is necessary.⁷

Considering the high frequency of functional spikes in non-epileptic children, patients with non-epileptic episodic autonomic disturbances may be incorrectly diagnosed as Panayiotopoulos syndrome.⁸

4 CONCLUSION

To prevent seizure triggers and oral trauma, dental practice must prioritize individualized preventative procedures, interprofessional cooperation with neurologists, and stress-reduced pediatric treatment. Children with panayiotopoulous syndrome require safe, low stress dental care that is coordinated with a neurologist. During this benign childhood epilepsy, careful planning avoids seizure triggers, controls medication side effects, and assures safe restorative or surgical care.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

Disclosure of conflict of interest

The authors declare no conflicts of interest regarding this manuscript.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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