

Multiple impacted Permanent Teeth—An Indicator for Early Detection of Hypoparathyroidism: A Rare Case Report

Sir,
It is an interesting and unusual report of a rare case where multiple impacted permanent teeth and retained primary teeth accompanied by other clinical manifestations in a

16-year-old female patient probed the clinicians for further investigations which, eventually, aided in the early diagnosis of hypoparathyroidism. Early detection of this disorder is vital for an effective management, not only, paving way for the prevention of further progression of the dental damage, but, also, in improving the medical management of the disorder in particular and the related outcomes.

Eruption is a process of continuous movement of the developing tooth bud from its developmental location to functional location. Teeth that cease to erupt before emergence to their functional position in the oral cavity are termed as impactions.

Hypoparathyroidism, an uncommon endocrinological disorder, is identified either by absence or, abnormally low sera levels of parathyroid hormone (PTH) secondarily leading to abnormally low sera calcium levels and/or, elevated sera levels of phosphorus. It presents as a major therapeutic challenge that includes an effectual management of the balance between treating hypocalcemia while simultaneously, avoiding hypercalciuria.^[1] Hypoparathyroidism has known adverse effects on the development of teeth and bones including eruption delays, teeth with short and blunted roots, impaired upper and lower jaw growth, alteration in facial dimensions, and a shortfall of coordination in lower jaw growth affecting the overall development of the dentition and the final state of occlusion achieved apart from brown tumors.^[2,3]

Various factors at genetic, molecular, and cellular levels interplay in a successful tooth eruption.^[4] It is not a rarity to find impaction of a single tooth but a rarity to find multiple impacted teeth which is usually seen as a partial manifestation of a plethora of systemic conditions including syndromes, metabolic and hormonal derangements, and rarities.^[5]

As hypoparathyroidism presents early in the form of diverse oral manifestations, an oral health-care physician can play a major role in the early diagnosis and a multidisciplinary management approach of this disorder. The present case report elaborates a rare case of a 16-year-old female patient reported with a chief complaint of multiple absent teeth with past dental history of usual exfoliation of primary teeth and failure of eruption of permanent teeth. Her family history was positive for a consanguineous marriage of her parents.

On general physical examination, the patient was found cooperative and of moderate built. Bilateral feet examination revealed an abnormal decrease in the size and diameter of the third, fourth, and fifth phalanges. The lateral ulnar surface of the right hand showed a mass of soft tissue along with a prominent middle phalanx of the long finger [Figure 1]. Hypoparathyroidism characteristically presents with abnormally short fourth and fifth metatarsal and metacarpal bones with the rare involvement of the third metatarsal or, metacarpal bone which might, also, get affected. Hand and foot radiology, thus, almost frequently, shows quite significant and nearly diagnostic changes in the third, fourth, and fifth



Figure 1: Clinical photograph of feet (upper) and right hand (lower left- front view and lower right- rear view of same) showing abnormal third, fourth and fifth phalanges in the feet, being almost half of the adjacent fingers, with right hand showing a soft tissue mass in the lateral ulnar surface along with prominent middle phalanx of long finger



Figure 2: Intra-oral photographs (left- maxillary arch; right- mandibular arch) showing multiple, clinically missing permanent and retained primary teeth



Figure 3: Hand-wrist radiograph of right hand (left) revealing alteration in bone architecture with mild changes in trabecular pattern and in the thickness of the cortices with orthopantomograph (OPG) (right) revealing multiple unerupted and impacted permanent teeth and retained primary teeth in both jaws

metatarsal and metacarpal bones which can be almost half the magnitude of the adjacent, normal bones.^[6] No other notable findings were observed in relation to her physical or mental abilities whereas intraoral examination revealed retained primary teeth with multiple missing permanent teeth [Figure 2].

A provisional diagnosis of oligodontia of the maxilla and mandible with the history of the patient probed for hand-wrist radiography of the patient, which revealed alteration in bone architecture with mild changes in the trabecular pattern and in the thickness of the cortices whereas orthopantomograph (OPG) of the patient revealed multiple impacted permanent teeth with retained primary teeth in both the jaws at various levels of impactions in the anterior and posterior areas of the mandible, maxillary tuberosity, nasal floor, and zygomatic region. No evidence of cystic changes was observed clinically as well as radiographically. The maxillary and mandibular bones displayed a mild ground glass appearance with faint trabecular pattern and an altered density. Mild blunting of mandibular molar roots was, also, evident in the OPG of the patient [Figure 3]. Serological investigations revealed a decrease in calcium (8.15), increase in phosphorous (6.49), and TSH (6.79) and markedly decreased PTH (<1.2) levels. Based on the clinical presentation, abnormal phalanges in the feet bilaterally, radiological and serological investigations, a final diagnosis of hypoparathyroidism was, eventually, arrived-at. As the immediate target was to achieve normal sera calcium levels, a multidisciplinary approach was adopted.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

Suresh Babu B, Thatapudi A, Shankar¹, Moon Chattaraj¹, Kongkana K², Venugopal S³, Abhishek Singh Nayyar⁴

Department of Oral and Maxillofacial Surgery, Saraswati-Dhanwantari Dental College and Hospital and Post-Graduate Research Institute, Parbhani, Maharashtra, ¹Department of Prosthodontics and Crown and Bridge, Kalinga Institute of Dental Sciences, Bhubaneswar, Orissa, ²Department of Dentistry, Tezpur Medical College and Hospital, Tezpur, Assam, ³Department of Prosthodontics and Crown and Bridge, AECS Maruti College of Dental Sciences and Research Centre, Bangalore, Karnataka, ⁴Department of Oral Medicine and Radiology, Saraswati-Dhanwantari Dental College and Hospital and Post-Graduate Research Institute, Parbhani, Maharashtra, India


Address for correspondence:

Dr. Abhishek Singh Nayyar,
44, Behind Singla Nursing Home, New Friends' Colony, Model Town,
Panipat - 132 103, Haryana, India.
E-mail: singhabhishekndls@gmail.com

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