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Case Report

Prosthetic rehabilitation of a child with idiopathic hypoparathyroidism a Case Report

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Abstract: Hypoparathyroidism is an uncommon metabolic disorder characterized by hypocalcemia and hyper phosphatemia. Dental manifestations are enamel hypoplasia, widened pulp chambers, pulp stones, shortened roots, delayed eruption and hypodontia. Prosthetic rehabilitation of a child with idiopathic hypoparathyroidism is a treatment option. In case report A fifteen year old boy was reported to the department of Pedodontics, with the complain of missing teeth. On clinical examination, only twelve teeth were present, all of which showed mobility except the molars. Complete extraction followed by prothetic rehabilitation with complete denture was decided as the treatment plan. In Conclusion A patient with a rare disorder like Idiopathic hypoparathyroidism requires careful and thorough clinical and radiographic examinations. Complete denture can be the treatment option to rehabilitate the edentulous state.
Keywords: hypo para throidism, metabolic disorder, prosthetic rehabilitation.

INTRODUCTION

Hypoparathyroidism is an uncommon metabolic disorder characterized by hypocalcemia and hyper phosphatemia due to a deficiency or absence of parathyroid hormone secretion [1]. It may occur in combination with other disorders, including autoimmune problems (e.g., autoimmune -candidiasis-ectodermal dystrophy syndrome) [2] or developmental defects (DiGeorge syndrome and velo cardio facial syndrome) [3]. It can also develop as a result of an isolated entity of unknown etiology called idiopathic hypoparathyroidism (IHP). Symptoms of IHP usually appear during the first decade of life, but may become evident at any age [4]. In acute form it causes hypocalcemia with consequent paresthesia, muscular spasm and seizures. Long-standing cases manifest with visual impairment from cataracts [5] Dental manifestations are enamel hypoplasia, widened pulp chambers, pulp stones, shortened roots, delayed eruption and hypodontia [6,7]. A less common aberration is delay or cessation of dental growth and development [8]. Permanent physical and mental deterioration can occur if initiation of treatment for either acute or chronic cases is delayed [9]. This article discusses a case of a 15 year old boy who was diagnosed with hypoparathypoidism and was prosthetically rehabilitated for the edentulous state following the endocrinal disorder.

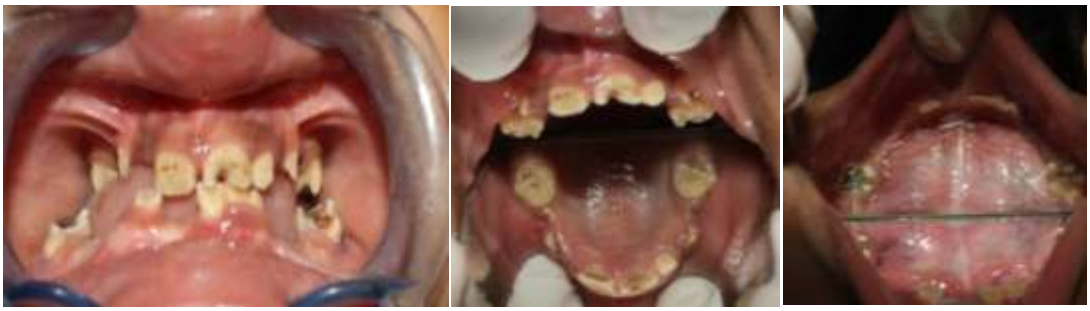

Fig-1: Intra oral findings

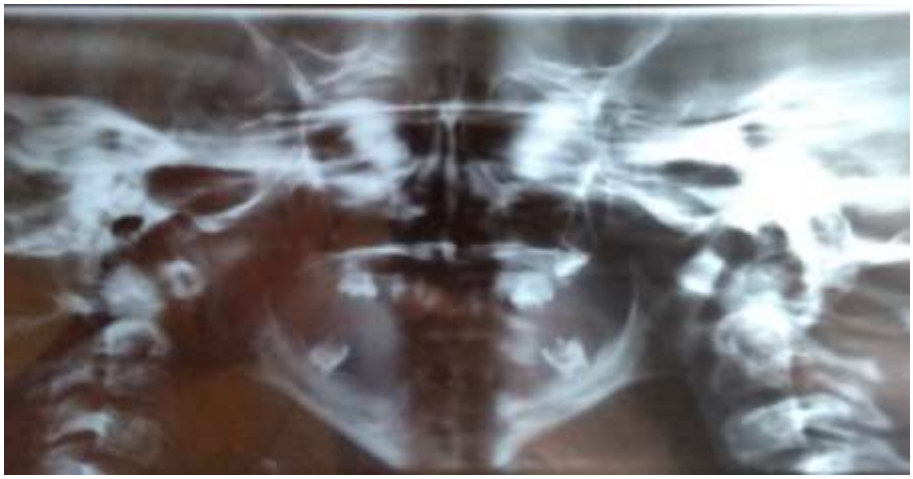

Fig-2: Orthopantogram

CASE REPORT

A fourteen year old boy reported to the department of Pedodontics and preventive dentistry with the chief complains of mobility of teeth and inability to eat properly as he had very few teeth. The parents gave a normal prenatal history and reported a consanguineous marriage between cousins. The child had two other younger siblings who were completely normal. The child was normal until 40 days of age following which he conjured fever with seizures and was hospitalized. At that time he was diagnosed with cerebral meningitis and treatment was started. Later delayed milestones were noted in the patient (started crawling after two and half years of age and walking by four years). Upon further tests he was diagnosed with hypoparathyroidism with calcific stones and later hypocalcemia. Seizures were consistently present since 45 days of age and the child was on regular medication until 6 years of age. A single episode of relapse was seen a year following cessation of medicines, but regular treatment was deemed unnecessary. Patient also reported of mild visual impairment due to cataract which was followed by surgery of left eye at the age of 13 and the surgery for right eye was scheduled in two months from the day of visit to the department. The child was short statured with a height of125 cm and weight of 22 Kgs and had a low IQ.

On intra oral examination, teeth present were 55, 53, 51, 61, 62, 63, 65, 75, 72, 71, 82, and 85. All teeth had marked enamel hypoplasia and other than the primary second molars, all showed grade III mobility. Orthopantogram revealed hypodontia, very short and rounded roots and a complete absence of permanent tooth buds.

Since almost all teeth showed mobility, total extraction followed by rehabilitation with complete denture was decided as a treatment plan. Teeth were extracted quadrant wise and a complete denture was fabricated with complete set of artificial primary teeth. On three months follow up, patient was happy and has gained two Kgs weight.

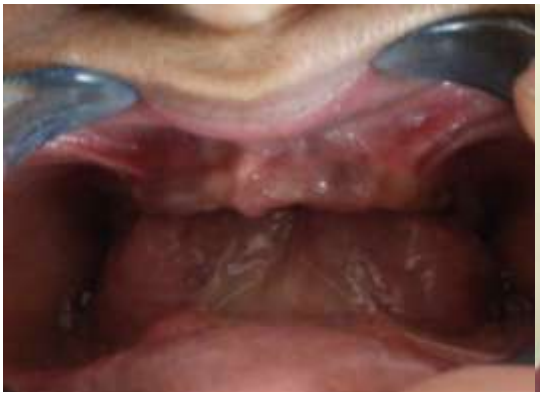

Fig-3: After Extraction

Fig-4: After Prosthesis

DISCUSSION

The most common presenting symptom of idiopathic hypoparathyroidism is tetany which occurs due to low serum levels of calcium, which might be the cause of frequent seizures in the present case. As per literature a total of eight studies have been found in literature reporting the dental abnormalities of idiopathic hyperparathyroidism. Dental findings in the previous studies reported enamel hypoplasia as the most frequent finding along with short rounded roots,

hypodontia, lack or delayed tooth eruption, partial anodontia or microdontia. Most of these findings were noted in the present case. Evidence from the previous studies emphasized that dental abnormality in IHP was the result of a calcio traumatic response, which coincides with the age of onset and reflects periods of hypocalcemia during tooth development [10, 11]. In the present case, a low calcium level present soon after birth could be the cause of the dental findings. The dental manifestations have been attributed to a disturbance in mineralization; alterations in the formation of the Hertwig epithelial root sheath coupled with other ectodermal disorders, lack of differentiation of odontoblasts, or are due to resorptive processes [1]. Another sign commonly associated with parathyroid hormone deficiency is cataracts [3, 9] which was also present in the present case.

CONCLUSION

A patient with a rare disorder like Idiopathic hypoparathyroidism requires careful and thorough clinical and radiographic examinations. The clinician should be alert to oral abnormalities which often suggest a underlying systemic disorder. A multidisciplinary approach is the key to correct diagnosis and treatment choice aiming to improve the child's health. In the present case, a long term follow up is required to assess the comfort and usage of the denture, as patient cooperation might be unlikely owing to the mental status of the kid. Further health assessment should be also carried out to check the serum calcium levels and the bone density to decide on placing dental implants and rehabilitating the edentulous state.

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