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CASE STUDY

CLINICAL CHALLENGES IN MANAGING DENTAL PATIENT WITH HYPOPITUITARISM

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ABSTRACT

Hyopituitarism is the condition, when pituitary gland is unable to provide sufficient hormones, due to an inability of pituitary gland to produce hormones or due to an insufficient supply of hypothalamic-releasing hormones. Symptoms depend on the degree of hormone depletion and the rapidity of onset. Hypopituitarism is usually a mixture of several hormonal deficiencies but rarely involves all the pituitary hormones. i.e. pan hypopitruitism. Hypopituitarism is usually chronic and lifelong, unless successful surgery or medical treatment of the underlying disorder can restore pituitary function. In this article, our patient had suffered from encephalitis and meninigitis in his early childhood, that resulted to hypopituitarism and growth hormones were suppressed, led to dwarfism. We are focusing on dental treatment challanges associated with hypopituitaric patient, presented to us with limited mouthopening, micrognathia, malocclusion and severely compromised periodontal health.

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INTRODUCTION

Pituitary gland is considered to be master gland of the body. It is situated in the sella Turcica of skull, weighing approx 0.5 gram and occupies around 80 percent of sellar space This gland is divided into two anatomically, functionally, and developmentally distinct structures, the anterior pituitary or adenohypophysis and posterior pituitary or neurohypophysis. The anterior lobe, or adenohypophysis, produces and secretes 6 important hormones for normal growth and development (Kannan 1987). Posterior part or neurohypophy sis pituitary. Secretes two hormones namely antidiuretic hormone and oxytocin hormone.

Growth hormone is of vital for normal growth and development. Its deficiency results in a condition known as pituitary dwarfism. Individual with dwarfism has delayed growth of skull and facial skelton, gives small facial appearance with their age. On other side, growth hormone excess leads to gigantism if it is occurs before completion of the growth and if it occurs after fusion growth plates, Acromegaly results.

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Case history

A male patient aged 34 years reported to our clinic with chief complain of difficulty in chewing and pus discharge from gingiva, pain in teeth and aesthetic problem. Then patient was examined thoroughly.

On extra and intraoral examination

Extraorally patient was looking normal except puffy face[Fig 1] and visibly very small jaw. On intraoral examination, patient had very limited mouth opening[Fig 2] ,compromised periodontal status and teeth were relatively smaller[Fig 3]. As parents of patient told us he could not achieve normal height because of illness in his childhood. Then further medical history was taken into account.

Medical history

The patient was short statured with limbs not properly grown, his hands (Fig. 4) were markedly underdeveloped. The patient was not well coordinated in his behaviour, on further inquiry parents of the patient revealed that he was absolutely normal child till the age of one and half years. Suddenly he developed encephalitis and meningitis. He was being treated at various places for the same. Parents of the patient noticed that he was not growing according to his age, following after his illness.

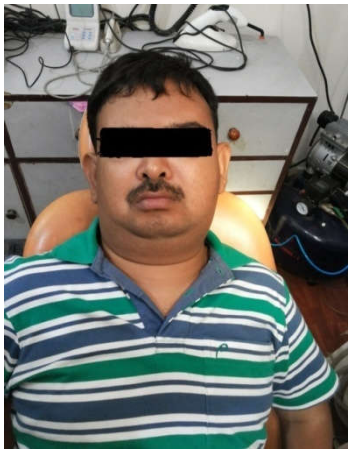

Fig. 1. Patient's front view

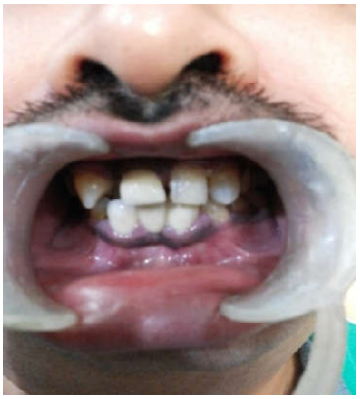

Fig. 2. Patients intra oral view

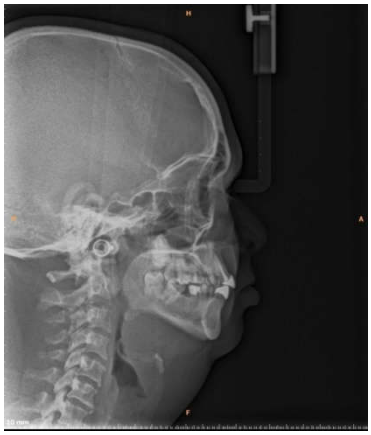

Fig. 3. Cephalogram showing micronathia

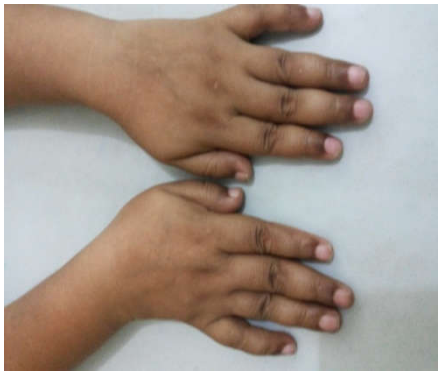

Fig. 4. Patient' deformed hands

At the of 12 years parents consulted endocrinologist for further treatment. Complete hormonal assay was carried out and finally diagnosed as hypopituitarism with suppression of growth hormones, he was given Norditropin (human growth hormone) for period of 2 years. He gained little bit weight and height. But could not achieve normal stature. His height is less than four feets. Family history was also being taken but there was no prelidiction in the family, even genetic test of this patient was found negative.

Dental history

As parents of patient told us, patient had normal eruption till the age of one and half year. Eruption was delayed and. his permanent teeth started erupting at age eight years.

DISCUSSION

Hypopituitarism is a rare disease, marked by decreased secretion one or more of the eight hormones normally produced by pituitary gland at the base of the brain, affects facial and dental structures as well. The most important feature of pituitary dwarfism is short stature of the affected patient and the low growth velocity for age. The maxilla and mandible of affected patients are smaller than the normal and the face appears smaller. (Shafers, 2010; Neville *et al*., 2010 Kosowicz and Rzymski, 1977; Sarnat *et al*., 1988) The permanent teeth shows delayed pattern of eruption (Bigeard and Sommermater, 1991), shedding of deciduous teeth are also delayed. Normally dental arches are smaller than the normal and therefore cannot accommodate all the teeth, that results in malocclusion. Rare findings such as agenesis of the upper central incisor and solitary maxillary central incisor have been observed. (Bretéché *et al*., 1998; Lo *et al*., 1998) Amelogenesis imperfecta a diverse group of hereditary disorder that is characterized by defect in formation of tooth enamel has also been seen in the patient with reduced amount of growth hormone. (Parentin and Perissutti, 2003) Oral manifestations are of particular interest to the dentist, because patient with this disease invariably have missing teeth, delay in eruption and smaller teeth than normal (Shafers textbook of oral pathology, 5th edition) It can affect both primary and permanent dentition. So careful observation and timely treatment can restore patients esteem.

Treatment

Hypopituitaric patients offers great challenge to the dentists. Small jaw, microdontia, impacted teeth, severly crowded teeth, all made our task miserable In this patient conditions were not at all favourable, also it was really difficult to live upon expectations of the patient. Anterior teeth were restored with ceramic crowns to enhance confidence of the patient, special care was taken keeping in mind of microdontia where chances of pulpal exposure is very high.

Complete oral prophylaxix was carried out to improve periodontal status, it was difficult task to do it in very limited mouth opening. The patient was given special instructions to maintain oral hygiene to minimise the associated complications.

Conclusion

Dentist can play key role in diagnosis of a case of pituitary dwarfism in coordination with medical professionals. Patients with pituitary dwarfism has not only have difficulty in speech and chewing efficiency and speech but also concern about their appearance, how they look different from others. In this patient, it was very challenging to handle his problems with very limited mouth opening, lack of cooperation and, his uncoordinated behaviour. Patient was reassured before treatment, after his behaviour modification ,entire treatment was carried out.

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