

## CASE REPORT

### HYPOTHYROIDISM – A CASE REPORT

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#### ABSTRACT:

Hypothyroidism can be either congenital or acquired. Congenital hypothyroidism is the most common endocrine disorder. There are so many signs and symptoms which are suggestive of hypothyroidism like dwarfism, late development of secondary sexual character and impacted teeth. The early treatment of CH patient's has successfully improved the prognosis and management of this disorder. Optimal treatment and management throughout the patient's life, beginning in the neonatal period, are required to ensure long-term health. Due to increased awareness of early clinical signs and introduction of neonatal screening for congenital hypothyroidism, long-term untreated hypothyroidism has become rare. In this case, it was described a case of acquired hypothyroidism that was not present during pregnancy and later normal baby developed severe dental anomalies, growth and mental retardation.

**Key words-** Acquired Hypothyroidism, Dental anomaly, Mental retardation.

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#### INTRODUCTION

**I** Congenital hypothyroidism is the condition in which babies are born with underactive thyroid function. The usual cause of this condition is the failure of the thyroid gland to develop during pregnancy<sup>1,2</sup>. Primary CH is the most frequent congenital endocrine disorder. Central CH is much less frequent and not detected by most screening programs based on thyrotropin (TSH) determination. Permanent primary CH affects about one in every 3500 live births in most industrialized countries.<sup>3</sup> For the early diagnosis of hypothyroidism early neonatal screening have been introduced over the last 40 years in most industrialized

countries and have markedly improved neurologic and health outcomes. In this paper we are reporting a case of acquired hypothyroidism in an 18 year old girl.

#### CASE REPORT

An 18 year old female patient reported to the Department of Oral Medicine Diagnosis and Radiology with chief complaint of pain in lower right back teeth region of jaw since 2-3 months. In physical appearance patient had stunted growth which indicated hypothyroidism. She had dry and wrinkled skin and rough oral mucosa. (Figure 1, 2)



**Figure 1:** Stunted growth



**Figure 2:** Scaly patch in oral mucosa

Pertinent information was provided by the patient's mother who accompanied her. Non pathological personal history details were as follows – patient was the product of 7<sup>th</sup> pregnancy and 7<sup>th</sup> delivery. Mother had full term and normal delivery. There socioeconomic status was low. She also gives history of night blindness.

Upon arrival to the department, the patient weighed 25 kg and measure 94 cm. Her IQ level was low and also low physical activity. Her secondary sexual characters were also missing which are supposed to present in the age of 18 years. There was no history of menstrual cycle. Mesio facial clinical examination reveled orthognathic and symmetric profile with broad and flat nose.

Intraoral examination revealed multiple retained deciduous teeth with only erupted first molar in all the four quadrants. She had macroglossia with nondetermined terminal planes and bilateral class I canine relationship. And 50% vertical overbite with 3.5 mm horizontal overbite.

Patient underwent radiological examination, which revealed multiple impacted permanent teeth. (Figure 3)



**Figure 3:** OPG showing multiple impacted teeth

Her personal history, clinical findings and radiological examination pointed some sort of hormonal imbalance problem related to thyroid. On the basis of these findings we subjected her to growth hormone assessment, thyroid function test, and complete hemogram.

Her investigations report suggested impaired or non functioning thyroid that is hypothyroidism .She had extremely low level of T3 and T4 ,and extremely high level of TSH. Her hemogram report was within the normal limits.

Patient was refereed to paediatrician and adolescent specialist. Patient was instituted Thyroxine replacement therapy.

Patient was recalled after 3 months of thyroxine replacement therapy and there was marked change in her daily activity and weight.

## DISCUSSION

The thyroid is the principal endocrine gland that regulates body functions, growth and metabolism. Amongst all the endocrine disorders, thyroid diseases are the most common

glandular disorder. Various studies have estimated that around 42 million people suffer from thyroid diseases in India <sup>4</sup> with a significantly higher prevalence in women.<sup>5</sup> . Most cases of thyroid dysfunction go undiagnosed, which indicates that routine dental treatment can lead to adverse effects in the patient.<sup>6</sup> Oral health care professionals need to familiarize with the oral manifestations that they may come across in practice, for early diagnosis and control of disease. Modifications in dental treatment and consultation with the patient's primary care physician are necessary when a thyroid disease is suspected.

Hypothyroidism is a condition wherein thyroid gland function and production of the thyroid hormones is reduced. The causes of hypothyroidism can range from severe iron deficiency anemia, insufficient stimulation of the gland, inflammatory (commonly Hashimoto's thyroiditis), radioactive iodine, surgery, pregnancy (postpartum thyroiditis) and use of pharmacological agents such as lithium and amiodarone.<sup>7</sup>

The clinical features of hypothyroidism include anemia, cardiomegaly, intolerance to cold, constipation, dry and brittle hair, elevation in aspartate transaminase, alanine transaminase and lactate dehydrogenase, elevation in creatine, goiter, hyperlipidemia, lethargy, weight gain, tachycardia, seizures, reduce in cardiac output, reduced respiratory rate, myxedema, paraesthesia.<sup>8,9</sup>

Oral Manifestations of hypothyroidism - Childhood hypothyroidism known as cretinism is characterized by thickening of lips, large protruding tongue (macroglossia), malocclusion and delayed eruption of teeth. Thickening of the lips and macroglossia is due to increased accumulation of subcutaneous mucopolysaccharides i.e., glycosaminoglycans due to decrease in the degradation of these substances.<sup>10</sup>

Classical oral findings of hypothyroidism are - Enamel hypoplasia in both dentitions, Anterior open bite, Macroglossia, Micrognathia, Periodontal disease, Thick lips, Mouth breathing and Delayed eruption of teeth.

The long-term effects of severe hypothyroidism on craniofacial growth and dental development have also included impaction of the mandibular second molars. This seems to be caused by a dissociation of ramus growth and failure of normal resorption of the internal aspect of the ramus, resulting in insufficient space for proper eruption of these teeth.<sup>10</sup>

After diagnosis the important part comes is the treatment part. The dentist should be familiar with the systemic manifestations so as to avoid complications during treatment. Before initiating treatment for a patient, complete medical history with past medical complications should be obtained. In patients with controlled hypothyroidism, dental treatment like restorations can be done but dental surgical procedures should be avoided in the patients with infection or severe stress. Although patients with hypothyroidism do not have any increased susceptibility to infection, They are susceptible to

cardiovascular disease from arteriosclerosis and elevated LD levels.<sup>11</sup>

### CONCLUSION

In conclusion, the dental treatment modifications are indicated in patients reporting with hypothyroidism. A complete blood picture should be advised before start of dental surgery. In patients with cardiovascular disease, consultation with primary care physician and cardiologist is essential. Limit or avoid use of epinephrine, CNS depressant drugs. The risk of oral infection should be controlled and dentist should be aware of the drug interactions of thyroxine. Thus, dentist play a vital role in screening dental patients with undiagnosed thyroid functions.

### REFERENCES

1. Little JW, Minneapolis MS. Thyroid disorders. Part II: hypothyroidism and thyroiditis. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2006;102:148-53.
2. Atas A, Çakmak A, Karazeybek H. Congenital Hypothyroidism. *J of Current Pediatr* 2007;5:70-6.
3. Delange F. Neonatal screening for congenital hypothyroidism: results and perspectives. *Hormone Research* 1997 48 51–61.
4. Ambika GU, Menon UV. Thyroid disorders in Indiaan epidemiological perspective. *Int J Endocrin Met.* 2011; 15(2): S78–S81.
5. Klein I. Thyroid hormone and the cardiovascular system. *Am J Med.* 1990;88 (7):631–7
6. Pinto A, Glick M. Management of patients with the thyroid disease: Oral health considerations. *J Am Dent Assoc.* 2002;133:849–58
7. Harjai KJ, Licata AA. Effects of amiodarone on thyroid function. *Ann Intern Med* 1997;126(1):63-73.
8. Desai PM. Disorders of the Thyroid Gland in India. *Indian J Pediatr.* 1997;64(1):11–20
9. Berne, RM and Levey, MN. The endocrine and reproductive systems; Thyroid gland. On: *Physiology*, 6e edition. Mosby-Year Book, St. Louis, MO; 2008.724-37
10. Loevy HT, Aduss H, Rosenthal IM. Tooth eruption and craniofacial development in congenital hypothyroidism. Report of case. *J Am Dent Assoc.* 1987;115(3):429–31
11. Muzyka BC. Atrial fibrillation and its relationship to dental care. *JADA* 1999;130(7):1080-5.

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