

Oral cavity- Mirror to the body

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Abstract

Gingival enlargement is a bizarre condition causing aesthetic, functional, psychological and masticatory problems in oral cavity. Gingival enlargement has been associated with a variety of factors, including medications, inflammation and systemic disorders. Recent periodontal studies have suggested a mild to moderate association between periodontal disease and thyroid disorders due to altered gingival microcirculation compromising the first line of defence which may result in gingival hyperplasia. This case report is an unusual presentation of gingival fibromatosis in a 20 year old girl. The gingival hyperplasia and associated clinical features alerted us to the possibility of altered functioning of the thyroid gland. Subsequent investigations revealed subclinical hypothyroidism. This case report emphasizes, yet again the adage/saying that ‘the oral cavity is the mirror to the body!’

Keywords: Gingival enlargement, thyroid stimulating hormone, hypothyroidism, retained deciduous teeth, dry thick lips

Introduction

For long, physicians and dentists have paid close attention to their own respective fields. However, in recent years, there has been intense interest in potential associations between periodontal disease and various chronic systemic diseases and conditions. The important relationship of oral health to general health and well-being is also recognised

by Surgeons General report 2000, the report describes oral cavity as an Sentinel/ Early Warning System for systemic health and as a Potential source of pathology affecting other tissues & organs¹.

Gingival enlargement is a bizarre condition causing aesthetic, functional, psychological and masticatory problems in oral cavity. Gingival enlargement has been associated with a variety of factors, including medications, inflammation and systemic disorders. Recent periodontal studies have suggested a mild to moderate association between periodontal disease and thyroid disorders due to altered gingival microcirculation compromising the first line of defence which may result in gingival hyperplasia².

The thyroid gland is a major regulator of metabolism and affects all of the body functions. Thyroid dysfunction is the *second most common glandular disorder* of the endocrine system which may rear its head in any system in the body including the mouth. The oral cavity is adversely affected by either an excess or deficiency of these hormones³.

The purpose of this case report is to highlight association between Gingival fibromatosis and altered thyroid function.

Case History

A 20 year old girl reported with a chief complaint of swollen gums since 1 year. This was her first visit to dentist and patient had no significant medical history or

deleterious habit. On intraoral examination the color of the gingiva was reddish pink with generalised diffuse gingival enlargement which was more massive in mandibular anterior region covering the 2/3 of the crowns. Generalised bleeding on probing was present with probing depth of 5-6 mm. Minimal calculus or plaque deposits were visible with naked eye. (Figure 1).



Fig: 1

Other noticeable intra oral findings were deep bite, tongue tie, (Figure 2, 3). Retained deciduous 71, 81, Congenitally missing tooth buds 31,41, Multiple carious teeth 16,24,26,27,36,37 and Root stumps 46 were present. (figure 4).



Fig: 2



Fig:3

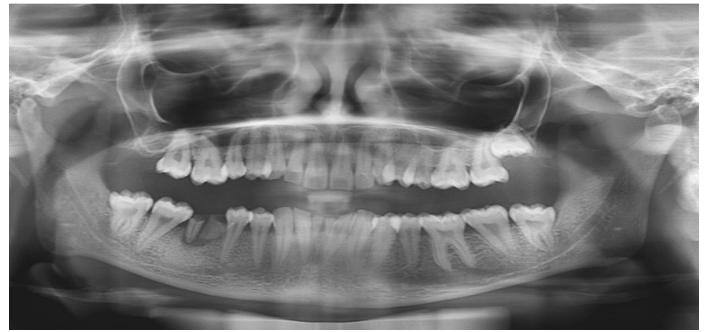


Fig:4

Phase 1 therapy consisting of scaling and root planing, restoration of carious teeth and extraction for root stumps was planned, simultaneously routine blood investigations comprising of complete blood count was advised to the patient.

Patient was recalled for checkup after 15 days of scaling and to our surprise no regression in enlargement was observed after phase 1 therapy. (Figure 5)



Fig:5

Massive gingival enlargement in this patient, with minimal calculus, which did not regress after phase 1 therapy and numerous oral findings alerted us that some underlying systemic factor might be responsible for the condition.

Again detailed medical history was taken for the patient who now disclosed intolerance towards cold thus further blood investigations for thyroid hormones and sex hormones were advised to the patient. The blood investigations revealed increased levels of thyroid stimulating hormones, indicating hypothyroidism.

S.No	Investigation	Result	Units	Reference
1.	Iodothyronine Total (TT3) (electrochemiluminescence)	1.07	ng/ml	0.80-2.0
2.	Thyroxine Total (TT4) (electrochemiluminescence)	7.0	µg/dl	5.1 – 14.1
3.	Thyroid Stimulating Hormone (TSH) (electrochemiluminescence)	7.31	mIU/ml	0.51-4.30
4.	Estradiol (electrochemiluminescence)	196	Pg/ml	
5.	Progesterone (electrochemiluminescence)	8.89	ng/ml	

Before undertaking any further dental procedure, the patient was referred to endocrinologist for expert advice.

Endocrinologist confirmed the diagnosis of hypothyroidism, though she decided not to start with medications and gave a green signal to carry out further dental treatment.

Patient was, thus, advised to monitor her thyroid function tests annually.⁴

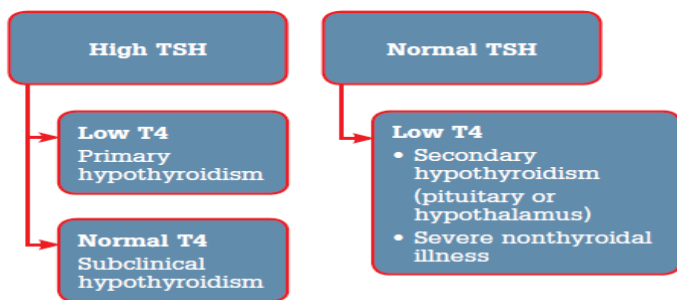
Gingivectomy and Gingivoplasty were taken up in phased manner. (Figure.6)



Fig:6

Discussion

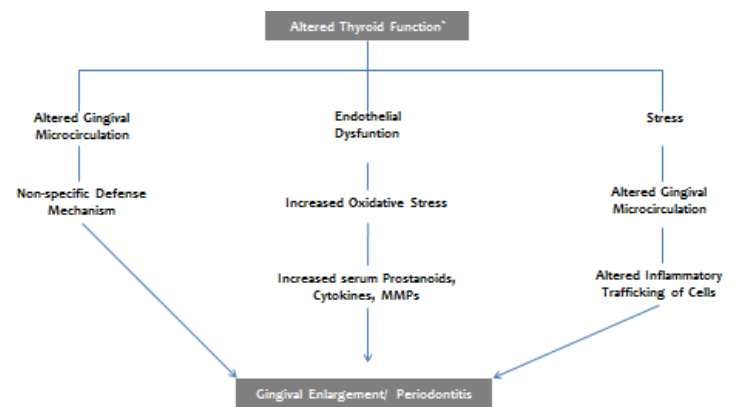
Subclinical hypothyroidism, is usually diagnosed when peripheral thyroid hormone levels are within normal reference laboratory range but serum thyroid-stimulating hormone (TSH) levels are mildly elevated. (Figure: 7).



This condition occurs in 3% to 8% of the general population⁵. It is more common in women than men, and its prevalence increases with age⁶. The most important implication of individuals with long standing untreated hypothyroidism is highly likelihood of progression to clinical hypothyroidism⁵. Such individuals are also at increased risk for developing cardiovascular disease, difficulty in anticipating pregnancy, premature labour, pre-eclampsia, low birth weight, neural disturbances^{6,7} etc. Thus patient with a thyroid dysfunction, as well as the patient taking medications for it, requires proper risk management before considering dental treatment by the dentist. Thus, communication of dentist and physician must be bidirectional, not only maintain patient's oral and thyroid health but also overall well-being of the patient.

In this case the exact cause for the gingival enlargement, was not clear but the patients appearance, her history of intolerance to cold. Other oral findings like gingival enlargement, retained deciduous incisors, thick dry lips all indicated thyroid malfunctioning².

Pathophysiology behind thyroid malfunctioning and gingival disease is explained as below⁸:



Large-scale randomized studies are needed for evidence-based recommendations regarding screening for mild thyroid failure and levothyroxine therapy for subclinical hypothyroidism. Currently, the practical approach is routine levothyroxine therapy for persons with a persistent

serum TSH of more than 10.0 mIU/L and individualized therapy for those with a TSH of less than 10.0 mIU/L⁶.

Though in our case physician advised to monitor the condition of patient closely and appreciated our promptness to help in diagnosing the patient's condition at an early stage.

Better understanding of this correlation will help both dental and medical professionals to determine the best approach to patient care.

Conclusion

As part of a health care team, the dentist plays an important role in detecting thyroid abnormalities. We may be the first to suspect a serious thyroid disorder and aid in early diagnosis. Better understanding of this correlation will help both dental and medical professionals to determine the best approach to patient care.

Indications for treatment in subclinical hypothyroidism are not established, but general guidelines can be offered. Greater magnitude and duration of TSH elevation and higher titers of antithyroid antibodies increase the probability that the condition will progress to overt hypothyroidism.⁷

While a number of interactions have been identified, additional research is required to determine whether this association between increased TSH level and gingival enlargement is causal or coincidental!

This case report emphasises, yet again the adage/saying that 'the oral cavity is the mirror of the body'

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