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Case Report

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Mandibular Radiological Findings in Thalassaemia Patient with Maxillary Overgrowth: A Case Report

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A 42-year-old Caucasian female presented to the clinics of oral surgery complaining of painless maxillary expansion similar to multiple exostotic appearance. The Thalassaemia patient reassured for the benign nature of maxillary overgrowth. The radiological findings are discussed with a great emphasis on the possible association of mandibular radiological signs to Thalassaemia disorders.

Key words: β-Thalassaemia, oral surgery, maxillany overgrowth

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INTRODUCTION

Thalassaemia is a Greek composite word (Thalassa = sea, haema = blood) describing the condition of globin abnormality, causing anemia due to decreased hemoglobin production or abnormality of the hemoglobin function (Urbinati *et al*., 2006). The two distinct types, inherited by autosomal dominant patterns, are α-Thalassaemia and β-Thalassaemia with the genetic phenotype distinguishing both of them into heterozygous and homozygous patterns, affecting the prognosis and indicating the severity of the disorders (Schrier and Angelucci, 2005).

The heterozygous β- Thalassaemia considered being a status of mild anemia, which did not usually have serious complications as seen in homozygous patterns (Schrier and Angelucci, 2005; Voskaridou and Terpos, 2004). Therefore some heterozygous patients remain undiagnosed for a long period suffering from mild symptoms.

In this case report a female patient with heterozygous type of β-Thalassaemia presented to the clinic of oral surgery complaint of maxillary overgrowth. A panoramic tomography, showed areas of mandibular osteosclerotic lines that may be described as areas of bone trabeculation not usually seen in healthy individuals.

CASE REPORT

A 42-year-old caucasian female presented to the clinics of oral surgery complaining of painless maxillary expansion similar to multiple exostotic appearance (Fig. 1). The patient was a b^+ Thalassaemia minor disorder with raised HbA2 and mild anemia. No medical treatment has been required so far for the condition. The dental history was free apart from the tooth fillings in teeth 16, 17, 35, 47 and dental prosthetics in teeth 11, 14-16, 44-46.

On clinical examination maxillary overgrowth, not related to mucosa abnormality, observed which did not alter the centric occlusion. All the exostoses-like expansions located buccally in a hemisphere pattern.

Fig. 1: Painless maxillary overgrowth in a patient with β-thalassaemia trait

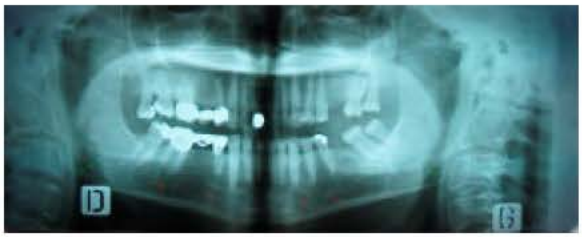

Fig. 2: Panoramic tomography of the patient: ii) red arrows showed the areas of bone trabeculation, ii) green arrows showed the areas of cortical bone thinning

A digital panoramic tomography performed to examine the stomatognathic skeletal system. A few areas of bone trabeculation in the posterior region of the mandible, in addition to the thinning of the cortical plate in the mandibular angles have been radiographically observed (Fig. 2). No signs of maxillary enlargement observed in the panoramic tomography indicating that there were not biochemical changes but mainly altered growth. The expansion centers seemed to be located in premolars area.

DISCUSSION

The radiographic findings described in our case might be added to the well-known hair-on-end lateral cephalometric x-ray appearance and macroscopic maxillary enlargement on head and neck diagnostics (Hollar, 2001; Weel *et al*., 1987). The medullary expansion due to increased production of erythropoietin could be seen in the radiograph of the skull and hand wrist (Murphy *et al*., 2002). This appearance considered to be apart from the Thalassaemia a general radiographic sign of severe anaemias such as sickle cell disease (Forbes and Jackson, 2003). As far as we know, the dental panoramic tomography was not reported in the literature as an investigation for examining the quality and quantity of bone in patients with Thalassaemia. Our suggestion is compatible with that of Tyler *et al*. (2006) concluding that skeletal manifestations may be seen theoretically in every bone. Therefore, the mandible may be included in the process of biochemical changes based on erythropoietin function. The centers of maxillary bone overgrowth, at this case report, seem to be located between the canines and premolars bilaterally indicating the possible location of the expansion origin (Fig. 3). In cervical spine, platyspondyly or bone in bone appearance did not appear in panoramic tomography.

The radiological findings described above, such as sparse, coarse, dense trabecular pattern are not in itself

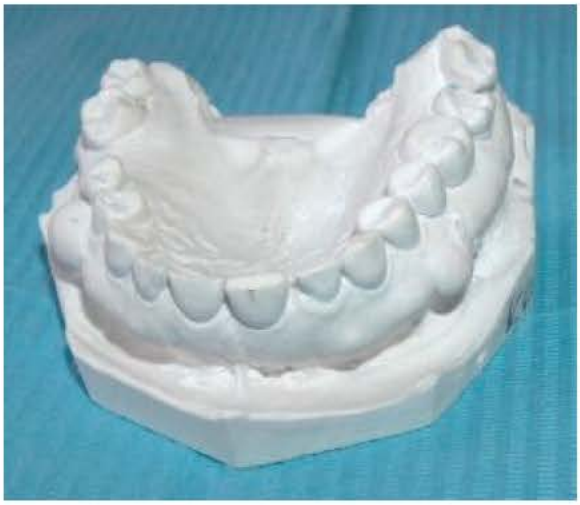

Fig. 3: The study model of the maxilla used for evaluation *in vitro*. The center of bone expansion located in the area of premolars

diagnostic of Thalassaemia (Forbes and Jackson, 2003), but may be used in the field of dentistry as an extra diagnostic aid. Concluding, great emphasis should be given in the field of prenatal diagnostics and genetic treatment. Thalassaemia sickness is increased in areas such as Mediterranean countries and Asia. More than 100 different mutations have been described including mutations related to deletions on not (Sarnaik, 2005). Therefore, the research is mainly based on the molecular biology and genetics creating a very promising area of radical therapeutics (Schrier and Angelucci, 2005).

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