WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 10, Issue 5, 86-91. Research Article ISSN 2277– 7105

MULTIDISCIPLINARY EVALUATION OF NON-SYNDROMIC SUPERNUMERARY MAXILLARY LATERAL INCISOR

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Article Received on
02 March 2021,

Revised on 23 March 2021,
Accepted on 14 April 2021

DOI: 10.20959/wjpr20215-20356

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ABSTRACT

Supernumerary teeth are extra teeth found in the dental arches in addition to the normal dental series, account for about 3% of the total dental anomalies. We are presenting the importance for the dental practice of the genetic study performed in the case of a patient presenting a supernumerary maxillary lateral incisor in the secondary dentition, an isolated, sporadic case, non-hereditary and non-syndromic dental anomaly, the consequence of a spontaneous, de novo mutation. The genetic study was performed by the Genetics Department, according to the ethical standards of scientific research and after acquiring the patient's informed consent. The clinical and radiological examination of the patient was completed with the examination of the intra-oral photographs, the family history investigation, the genealogical tree, and the analysis of the studied family's pedigree. The genetic research allows for the identification of their genetic or environmental etiology, the determination of the recurrence risk amongst descendants, as well as the specific observation of the affected families, to prevent complications of the supernumerary teeth.

KEYWORDS: Supernumerary lateral incisor, non-syndromic, non-hereditary, genetic study, genealogic tree, dental anomaly.

INTRODUCTION

Supernumerary teeth are extra teeth found in the dental arches in addition to the normal dental series.[1] Supernumerary teeth or "extra teeth" account for about 3% of the total dental anomalies, affecting the male sex twice as much as the female sex.[2, 3]

This abnormality most commonly affects the permanent dentition and is usually located in the upper jaw.[4,5]

Supernumerary teeth associated with the lateral incisor, as far as can confirm the literature, no comprehensive reviews of this special dental anomaly have been undertaken.[1]

Supernumerary teeth occur in any part of the tooth bearing areas, both in the maxillary and in the mandible, and may occur in temporary and permanent dentition.[6]

Supernumerary teeth in the maxillary anterior region frequently cause local disturbances, and may also compromise facial esthetics.[7]

MATERIALS AND METHODS

We are presenting the case of a boy (proband III7 of the genealogical tree) aged 10, from the urban area, clinically normal who came together with his mother to a private medical center, from Bucharest, Romania, for genetic counseling.

The genetic study was performed by the Genetics Department, according to the ethical standards of scientific research and after acquiring the patient's informed consent.

The study consisted of completing the following stages: the anamnesis, the general physical examination, the radiologic exam, the intra-oral photographs examination, the family history investigation, and the analysis of the studied family's pedigree.

RESULTS

Upon the intraoral examination highlighted the presence of a maxillary supernumerary lateral incisor in the permanent dentition, on the 1.2 bis position (Fig. 1 and Fig. 2).

The analysis of radiological examination confirmed the presence of the maxillary supernumerary lateral incisor, 1.2 bis, without highlighting other associated dental anomalies (Fig. 3).

Figure 1: Lateral view of both arches of the proband III7 highlights the maxillary supernumerary lateral incisor 1.2 bis.

Figure 2: Maxillary arch of the proband III7 highlights the maxillary supernumerary lateral incisor 1.2 bis.

Figure 3: Orthopantomograph of the proband III7 highlights the maxillary supernumerary lateral incisor 1.2 bis.

Knowing that occasionally the supernumerary lateral incisor cases are part of certain genetic syndromes, we've gone deeper with our genetic research, completing it with the peripheral blood karyotype test, which highlights the normal chromosomal pattern (Fig. 4).

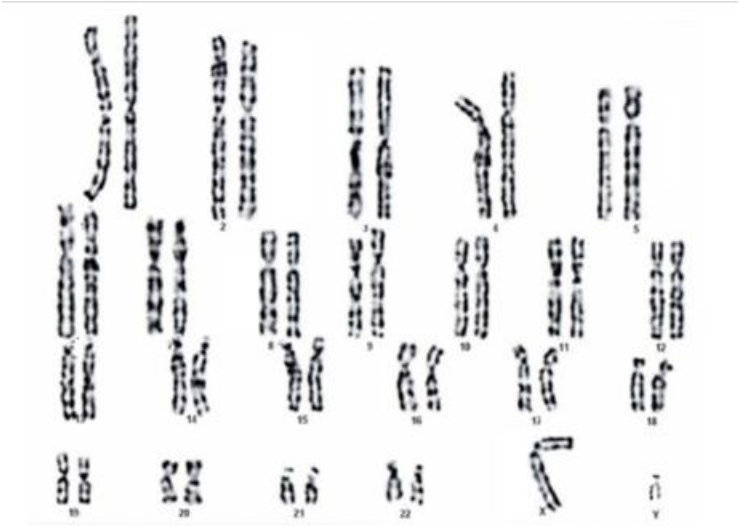

Figure 4: Karyotype of the proband III7: 46, XY.

The patient's detailed family history investigation was negative in the sense that no supernumerary teeth were highlighted in other family members.

Based on the patient's medical records, we further performed the genealogical tree chart of the studied family (Fig. 5).

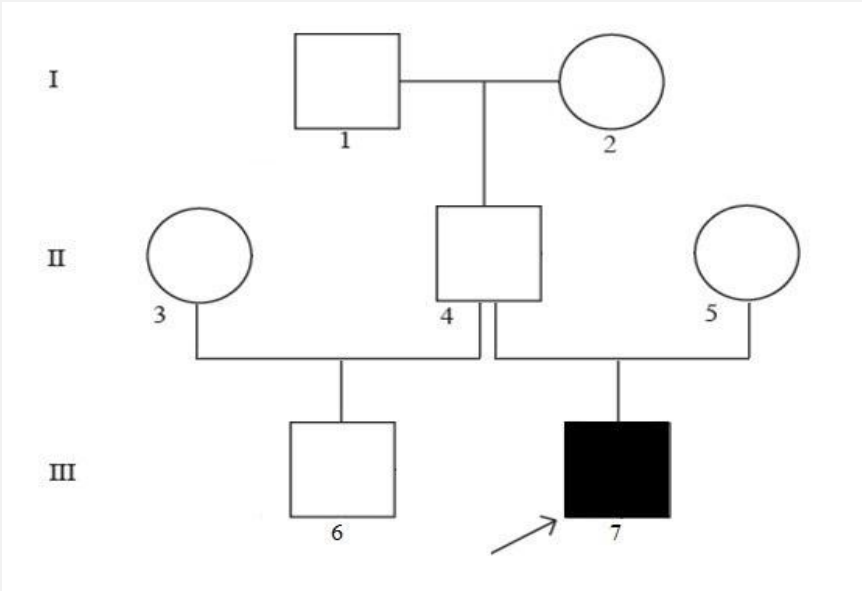

Figure 5: Genealogical tree.

I = first generation, II = second generation, III = third generation.

The analysis of the family tree illustrated the presence of an isolated, sporadic case of maxillary supernumerary lateral incisor in the permanent dentition, non-hereditary, probably determined by a spontaneous, de novo mutation.

DISCUSSION

The etiology of supernumerary teeth isn't fully clarified, but it is known to be the result of the cumulative effect of both genetic and environmental factors.[8-14] Main hereditary syndromes in which supernumerary teeth were found are Apert syndrome, Cleft lip-alveolus-palate, cleidocranial dysplasia, Ehlers-Danlos syndrome, Ellis-van Creveld syndrome, Down syndrome, Incontinentia Pigmenti, Fabry-Anderson syndrome, Otodental dysplasia, Brachmann-De Lange syndrome, Rubinstein Taybi syndrome, oculo-mandibulofacial dysplasia, Zimmerman-Laband syndrome or the Gardner syndrome.[13-16]

CONCLUSION

The case presented, illustrates an isolated, sporadic case, nonhereditary and nonsyndromic erupted unilateral supernumerary maxillary lateral incisor, a particular dental anomaly of number in the permanent dentition, probably the consequence of a spontaneous, de novo mutation.

The genetic research allows for the identification of their genetic or environmental etiology, the determination of the recurrence risk amongst descendants, as well as the specific observation of the affected families, to prevent complications of the supernumerary teeth.

Authors' contributions

All authors contributed equally with the first author, in the preparing, review, and editing of the article. All authors read and approved the final version of the manuscript.

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