
STUDY ON THE PREVALENCE OF HYPOPLASTIC DENTAL ALTERATIONS IN A SAMPLE FROM THE POPULATION OF BAURU

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ABSTRACT

Partial anodontia presents a remarkable clinical relevance if one take into account the functional, esthetic and psychological alterations it brings to the patients. Therefore, it is of great interest and importance for the dentist to identify the anomaly. The late finding of a tooth absence in a child assisted by the dentist for several years because of professional negligence is extremely unpleasant. For that reason, this study aimed primarily at highlighting partial anodontia as a dental public health problem, besides creating a control group for future studies on this issue. The sample comprised 942 patients attending the Pediatric Dentistry clinics of University of Sacred Heart, Bauru, Brazil, among which a group of 64 individuals presenting dental alterations involving hypodontia was selected. These subjects were really without any association to other anomalies, syndromes or ectodermal dysplasia, thus presenting hypodontia as an isolated manifestation. All possibilities of tooth extraction were discarded. The results demonstrated statistical significance with regard to race, agenesis and microdontia, with no statistical significance concerning gender, symmetry and association between quadrants.

KEY WORDS: tooth agenesis; partial anodontia; hypodontia

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INTRODUCTION

Dental alterations is etiologically heterogenic and may occur isolated or associated to other alterations.

Dental anomalies, classified according to the phase of the odontogenic development, the morphology and the dental tissues affected are divided in hyperplasic, hypoplastic and heterotopics.

The total absence of formation of one or more teeth characterizes a sort of anomalies that may be divided in: Anodontia and Hypodontia or partial anodontia.

Hypodontia is the reduction in size and number of teeth as a result of a philogenetic evolution of the dental arch. This reduction could be consequence of the a rapid cultural evolution eliminating the need for numerous and enormous teeth according to a regular scheme attaining mainly the terminal teeth in each series, the superior lateral incisives, inferior second premolars and the third molars.

Early diagnosis is important not only to search for other alterations running in the family as well as to allow a better therapeutic planning (SHAFFER et al., 1987; OLIVEIRA; CONSOLARO, 1989; CIAMPONI; FRASSEI, 1999).

Among radiographic techniques, the ortopantomography is the most indicated to study anodontia² since it records all the maxillo-mandibular complex in a single take as well as its interaction with the skull and the dental development of the patient with minimal radiation (ALVARES; TAVANO, 1990; CARVALHO et al., 1997; WATANABE et al., 1997; PEREIRA, 1998; ANTONIAZZI, 1999).

Partial anodontia has great clinical relevance if one considers the functional, esthetical and psychological alteration provoked in patients. For these reasons it is of utmost importance for the dentists to identify this anomaly making it possible an adequate plan of treatment and prevention of malocclusion, restoring the function, esthetic, phonetic and biting as well as the self-esteem of patients.

In this sense, the present study aims to establish a control population with hypoplastic alteration for further studies, to determine the simetry and laterality of the agenesi in males and females and to evaluate if there is any association between the manifestation of agenesia and microdonty.

MATERIAL AND METHODS

The study included 942 clinical records of patients with panoramic radiography from the Odontopediatry Clinics of the University of the Sacred Heart in Bauru, SP. From the radiographic analysis were

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selected 64 cases of dental alterations involving hypodontia (agenesia, microdontia). The selected cases underwent clinical examination to confirm the radiographic evidences as well as to identify absence of physical anomalies in order to discard possible syndromes of ectodermic displasia. All cases were in the mix and permante phase of denture showing normal clinical features, without any association with other anomalies, syndromes or ectodermic displasia and the hypodontia was an isolate manifestation. Any dental extractions were outruled.

It was used the Test of Goodman for contrast among and within binomial populations (GOODMAN, 1964, 1965). For identification of significance it was used low-case letters in the comparison among lines, considering a fixed column, and upper case letters in the comparison of the column within the lines.

Regarding the distribution of cases according to sex, race, agenesis, and microdenty it was used the Chi-square test to verify the causality of the frequency of the answers (CAMPANA et al., 2001).

RESULTS AND DISCUSSION

The studied group (64 children) included 34 females and 30 males with age ranging from 7 to 19 years (average 1.36 ± 3.47). Details of findings can be seen in the following tables.

TABLE 1 - Distribution of patients' teeth according to presence or absence of agenesis.

Agenesis	Frequency	
	Absolute	(%)
absent	877	85.65
present	147	14.35
Total	1024	100.00

$$\chi^2 = 520.41 (P < 0.0001)$$

As can be seen, agenesis was found in 14.35% of examined teeth.

In what regards the prevalence of anodontia in the literature, including in Brazil, it's reported a philogenetic reduction in the number of teeth. (BREKUS et al., 1944; PINDBORG, 1970; CONSOLARO; FONSECA, 1985; SHAFER, 1987; MC DONALD; AVERY, 1995; PROFFIT, 1995; BERTHOLD; BENEMAN, 1996; PEREIRA, 1998; ANTONIAZZI et al., 1999).

TABLE 2 - Distribution of patients' teeth concerning the presence or absence of microdonty.

Microdonty	Frequency	
	Absolute	(%)
Ausence	1019	99.51
Presence	05	0.49
Total	1024	100.00

$$\chi^2 = 1004.10 (P < 0.0001)$$

The statistical test reveals difference between presence and absence of microdonty. This finding was present in only 0.49% of examined teeth. There is just one piece of literature reporting microdonty in 2.3% of the teeth studied. (CARVALHO et al., 1997). Additionally, there was no reference in the literature to hipoplastic anomalies associated to other alterations.

TABLE 3 - Distribution of agenesis according to the tooth's location

Tooth	Agenesis		
	Total	Ausent	Present
12 60	(93.75)	4 (6.25)	64
14 63	(98.44)	1 (1.56)	64
15 62	(96.88)	2 (3.13)	64
18 30	(46.88)	34 (53.12)	64
22 62	(96.88)	2 (3.12)	64
24 63	(98.44)	1 (1.56)	64
25 63	(98.44)	1 (1.56)	64
28 38	(59.38)	26 (40.62)	64
32 63	(98.44)	1 (1.56)	64
34 62	(96.88)	2 (3.12)	64
35 53	(82.81)	11 (17.19)	64
38 39	(60.94)	25 (39.06)	64
42 63	(98.44)	1 (1.56)	64
44 63	(98.44)	1 (1.56)	64
45 55	(85.94)	9 (14.06)	64
48 40	(62.50)	24 (37.50)	64
Total	877 (85.64)	147 (14.36)	1024

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Results on TABLE 3 reveal that the greatest prevalence lays in the third molars (in the maxillary bone) followed by inferior premolars (in the mandibular bone) and there is a tendency for symmetry. Finally, appear the superior lateral incisors (in maxillary) come next.

The present findings are similar to those by Alvares and Tavano (1990); Castilho et al. (1990); Symons et al. (1993). Oliveira and Serra Negra (1985) and Oliveira et al. (2001) included the third molars since this was the tooth showing more agenesis.

On the other hand, Langlade et al. (1995); Watanabe et al. (1997); Pereira et al. (1998); Antoniazzi (1999) do not take into consideration agenesis of third molars due to the fact that they show greater prevalence and because they consider these teeth as vestigial bearing no clinical importance.

TABLE 4 - Distribution of agenesis according to gender

Gender	Agenesis		Total
	Absent	Present	
Females	471 (86.58) a B	73 (13.42) a A	544
Males	406 (84.58) a B	74 (15.42) a A	480

Results in TABLE 4 show that there is no association between agenesis and gender. Representing about 15% in both sexes.

This finding is different from some other authors such as Castilho et al. (1990); Glavan and Silva (1995); Watanabe et al. (1997); Antoniazzi et al. (1999); Ciamponi and Frassei (1999) that observed a greater frequency in females.

TABLE 5 - Distribution of agenesis according to race

Race	Agenesis		Total
	Absent	Present	
White	727 (85.73) a B	121 (14.27) a A	848
Nor white	50 (85.23) a B	26 (14.77) a A	176

Results in TABLE 5 show an association between race and agenesis and that its occurrence is less frequent than its absence.

Literature reports that populational groups show different predisposition to the absence of a given tooth (PINDBORG, 1970; ALVARES; TAVANO, 1990; ANTONIAZZI et al., 1999).

TABLE 6 - Distribution of hypodonty according to quadrant.

Quadrant	Agenesis and/ or Microdonty		Total
	Ausent	Present	
Right maxilla	215 (84.00) a B	41 (16.00) a A	256
Left maxilla	226 (88.30) a B	30 (11.70) a A	256
Right madible	221 (86.30) a B	35 (13.70) a A	256
Left mandible	217 (84.80) a B	39 (15.20) a A	256

Results on TABLE 6 show a predominance of absence of the occurrence of agenesis and microdonty and lack of association among the quadrants.

CONCLUSIONS

Results of this study may lead to the following conclusions: Dental hypoplastic alterations showed statistic significance; agenesis identified in patients corroborate with the reductional teory of Bolk and with the majority of authors in the related literature; there was no statistic significance for agenesis and microdonty regarding gender, symmetry and localization; there was no association between agene-sia and microdonty since the late was present only in isolated cases; treatment of this condition is a multidisciplinary task involving the dentist, odontopediatry, orthodontist and, in several instances, the speech therapists.

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Salusvita,
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p. 201-208,
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