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Hypodontia in Iraqi people

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Abstract

The most common congenital missing teeth are the upper lateral incisors. This study is performed to find the frequency of missing upper laterals in the young adult Iraqis and to assess their orthodontic treatment. The sample consists of twenty patients with hypodontia of upper lateral incisors (right and left) out of a thousand patients examined for three years in the orthodontic clinic of the Institute of Medical Technology. Gender distribution for patients was 15 females and 5 males. Age distribution for patients ranged from 15 to 25 years. Full record for the hypodontic patients included: photographs, panoramic x-rays and casts taken before and after orthodontic treatment. The treatment by space closure took more orthodontic treatment time and retention period than by space opening and prosthodontic treatment. The frequency of missing upper lateral incisors is 2% (consisting of 1.5% for females and 0.5% for males).

Keywords: Hypodontia, Space closure, Space opening.

Introduction

Hypodontia is the condition of naturally having fewer than the regular number of teeth [1]. Specific terms are used to describe the nature of teeth agenesis, the following definitions have been used [2]:

Hypodontia: when one to six permanent teeth missing (excluding third molars).

Oligodontia: when more than six permanent teeth missing.

Anodontia: complete absence of teeth.

The most common missing teeth are the permanent upper lateral incisors and in some families even the deciduous lateral incisors are missing [3],this means that the majority of cases have a genetic basis although it is occasionally caused by environmental factors , followed by missing of mandibular second premolar.

Orthodontic treatment can greatly facilitate any restorative treatment of some cases even eliminate the need for it [4].

Orthodontic treatment for patients with congenitally missing teeth is a challenge to effective treatment planning thinking of two major alternatives, space closure or space opening for prosthetic replacement, implant [5].

Early evaluation of the number of missing teeth and consideration of the size of spaces and the number of teeth remaining should aid the orthodontist in planning and managing the treatment [6].

Material and Methods

I. The material used in this study described as follow:

a. the instruments used for diagnosis and orthodontic treatment of the patients which are: mirror, props, bands, brackets, arch wires, power chains.

b. Camera and its equipment for photograph

c. Panoramic X-ray machine and films.

d. Instruments and material for cast which include: rubber bowel, spatula, trays, stone.

II. The sample which is used for the study consists of one thousand patients received orthodontic treatment in the outpatient clinic in the Institute of Medical Technology and from them we found 20 patients (5 male and 5 female) with congenital missing right and left upper lateral incisors. The age of those patients with hypodontia range (15-25 years) and they didn't have any syndromes or history of trauma or extraction.

III. The Methods:

a. In patients where the upper arch was crowded the lateral incisor space was closed,We did space closure by retraction of adjacent` teeth together to get rid of space by fixed appliance and one removable appliance for retention for one year[7],the quality of the appearance depended on the shape of the canine ,but recontouring of the canine to look like lateral incisor was undertaken by reducing the cusp tip .

b. In patients who have spacing in the upper arch, We did space opening by retraction of both canines towards the premolar with fixed appliance and bring the two incisors close to each other so opening the spaces for

replacement of the missing laterals either by partial denture or fixed bridges for retention and aesthetic[8].

We took photographs for every patient before and after treatment and we took measurements for spaces before and after treatment in cases of space closure the amount of spacing between the canine and central which has been closed and incase of space opening the amount of space before treatment between canine and central incisor and after treatment and then we did descriptive and inferential statistics by getting the mean and standard deviation and t-test and chi-square.

Results

Based on the missing upper lateral incisors in the total sample of one thousand patients examined in the orthodontic clinic in the institute of medical technology who receive patients from different parts of the country seeking orthodontic treatment, hypodontia was found in 20 patients who mean 2% of the patients.

The distribution of patients by gender is shown in table one, 15 females and 5 males.

In table two we divided the hypodontic patients according to type of treatment: three patients treated by space closure and seventeen by space opening.

In table (3) we get the mean is 6mm for space opening and 3.5 mm for space closure and standard deviation 0.684 in case of space opening and 0.510 in case of space closure and the t-test was 7.5 and significant result we get.

Discussion

The present study revealed a hypodontia prevalence of upper lateral incisors (2%)in the Iraqi people as we

see 20 cases from the thousand patients examined for three years in the orthodontic clinic of Institute of Medical Technology which receive patients from different villages of Iraq for orthodontic treatment.

Hypodontia was found more frequently in females than males [9] as we see in table one the females are 1.5% while males are 0.5% which mean three times as male.

The treatment by space opening and replacement we get better and faster results and less retention period than space closure, so we did space opening for (17) patients while space closure only for three patients and we get significant result as we see in table two.

When we did space closure we try to recontour the canine to look like lateral by reducing the cusp tip. The majority of patients had two teeth missing, but seldom three or more, patients with more severe hypodontia showed a tendency of increased over bite and class II relationship[10].

In table three we get the mean and standard deviation and t-test for both treatments, we get significant results.

Early evaluation of number of missing teeth and consideration of the spaces remaining aid the orthodontist in planing and managing treatment.

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Table (1) number and percentage of hypodontia in Iraqis according to gender

Sample from 1000 patients	Hypodontia	Female	Male
	20	15	5
	2%	1.5%	0.5%

*Chi-square= 2.139   p=0.049   P<0.05 Significant

Table (2) type of treatment

Treatment by space closure		Treatment by space opening	
Female	Male	Female	Male
2	1	13	4
66.6%	33.3%	76.5%	23.5%

* Chi-square= 2.26   p=0.048   P<0.05 significant

Table (3) mean and standard deviation of S.O, S.C

	Mean	SD	t-test	P-value	Sig
S.O	6.00	0.684	7.51	0.0049	S
S.C	3.5	0.510			

* P<0.05 Significant