Residual Alveolar Ridge Atrophy In Anbar Province

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Abstract:

Background: Alveolar ridge atrophy represent a serious dental problem to maxillofacial surgeon, prosthodontist and general dental practitioner.

Objectives & Aims: To evaluate the cases of residual alveolar ridge atrophy in Anbar Province.

Materials & Methods: A total of 275 edentulous patients were examined in this clinical study in College of Dentistry, Anbar University, Kalk & Baat classification was used to classify the patient casts according to the degree of resorption into three classes.

Results: About (65. 4%) has no previous dentures, the mean ridge height was greater in male than in female, 36. 8% had high CL 1, and 14. 4% had extensive CL2 resorption.

Conclusion: It has been found that the residual alveolar bone resorption was attributed to multiplicity of correlated factors such a sex, age, general health & metabolic activity.

Key words: Ridge atrophy, alveolar ridge, edentulous patients, mandible, bone resorption.

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Introduction

Loss of teeth will frequently lead to rapid reduction in the height of alveolar process [1,2,3]. Atwood [4,5] has related the rate of resorption to anatomic metabolic, functional and prosthetic factors which affect the relative activity of bone forming cells & bone resorbing cells, and alveolar ridge atrophy varying with time from patient to patient.

Page & Abrams[6] felt that health of oral tissues depends upon proper endocrine balance as well as proper calcium phosphorus blood levels which may alter dental picture. They stated that uncontrolled diabetes would fasten alveolar bone loss. Wedet[7] stated that series of subclinical systemic disorders as well as local oral factors produce degenerative residual ridge. Other factors such periodontal diseases existing before dental extraction, surgical injury and excess loading from dentures have been proposed by Michel & Barnom[8]. Therefore etiology of the condition remains uncertain, but it is likely to be multifactorial [3].

Materials & Methods

The sample consisted of 275 edentulous patients, aged 35- 75yr. They were selected from Prosthodontic Department, College of Dentistry, Anbar University in the period from March 2007 to April 2009, the sample included 120 males and 155 females. Standard case sheets were used. Data were collected from the patient. Alginate impressions were made using standardized & conventional technique for each patient. Die stone was used for casting the impressions.

Those casts should be with prominent genial tubercle & mylohyoid ridges for proper measurements.

By using ordinary vernier, a direct measurements was done from crest of ridge at the midline to the upper edge of genial tubercle lingually (M1), and another measurement was done from the crest of the ridge to highest point of the mylohyoid line, at the point just anterior to retromoalar pad for left and right sides (M2 and M3) respectively. These casts were examined by too independent examiners, Karl- Pearson coefficient of correlation was used to find inter – examiner reliability for examinations. The classification which was adapted by Kalk & Baat[9]was used to classify the mandibular casts visually according to the degree of resorption into three classes (Table 1).

Results

The sample consisted of 275 edentulous patients, aged 35- 75yr with a mean age of 56 Yr. It reveals that the percent of male is higher in age group 55 – 64 while the female percent is higher in age group 65-75 (Table 2). The number of previous dentures that patients were wearing during period of edentuloussness ranged from 0 – 3 dentures, about (65. 4%) has no previous dentures (Table 3) . The mean ridge height, anteriorly (MI) and posteriorly (M2and M3) and m3 was greater in male than in female (Table 4) About (48. 8%) of the sample had moderate CL 0 (male 22 2% and female 26. 6% resorpttion , 36. 8% had high CL 1, and 14. 4% had extensive CL2 resorption (Table 5) . Results also show that about (68. 8%) are healthy edentulous patients while 31. 2% had systemic diseases including diabetes mellitus , rheumatoid fever as well as cardiovascular diseases (Table 6).

Discussion

The majority of the sample was in age group 55-64 with a mean age higher than in other studies [10, 11, 12, 13] which may be attributed to some environmental factors, nutritionalfactors as well as physical status. Male: female ratio 1:1. 4 which resembles the result in other countries [3,4,14] . Also the percent of patients who had no previous dentures was higher than the others due to the fact that most patients were concerned about their appearance especially in their early life [4,12].

The mean ridge height at different points of mandibular ridge is greater in male than female. The majority of male & female sample of age group 45-54 has CL 0 moderate resorption [9]. This makes clear that there is no relation ship between age of patient with resorption of the ridge. About (31. 2%) of the sample including12. 4% male and 18. 8% female suffered from systemic diseases and it was found that the most common systemic disease is diabetes mellitus and then rheumatoid arthritis and then cardiovascular diseases. This was in agreement with the results in other countries [7,15] on the effects of systemic diseases on alveolar ridge resorption .

Table1: Kalk & Baat Classification

Class 0	Moderate resorption,both the genial tubercle & mylohyoid line are below the level of the alveolar ridge
Class 1	High degree of resorption, the genial tubercle & mylohyoid are either just below the highest point of the alveolar ridge or at the same level
Class 2	Extensive resorption, the genial tubercle is above the level of the ridge & the mylohyoid line are at the same level or above the alveolar ridge

Table 2 Distribution of the sample according to age group and gender

Age group	Male(%)	Female(%)
35-44	3%	3%
45-54	25%	23%
55-64	40%	35%
65-74	32%	39%
Total	44%	56%

Table3: Percentages of Previous Dentures Number According to Gender

Sex	0	1	2	3 and more
Male	31.5%	5.8%	4.7%	1.5%
Female	33.8%	12.8%	9.1%	0.7%
Total	65.4%	18.6%	13.8%	2.2%

Table 4 Measurements of Ridge Height (mean ± S.D.) According to Gender

Sex	M1	M2	M3
Male	0.7±0.1	0.48±0.2	0.49±0.2
Female	0.69±0.2	0.45±0.2	0.44±0.1
Total	0.7±0.15	0.47±0.2	0.47±0.15

Table 5 Classification of Mandibular Residual Ridge Atrophy According to Age Group and Gender

Age group	Moderate Cl 0		High Cl 1		Extensive Cl 2	
	M%	F%	M%	F%	M%	F%
35-44	1.2	2.3	0.4	0.8	0	0
45-54	10.4	8.2	1.4	1.4	0.4	1.2
55-64	6.2	7.5	5.6	8.2	3.2	2.6
65-74	4.4	8.6	7.2	11.8	3	4
Total	22.2	26.6	14.6	22.2	6.6	7.8

Table 6 Percentages of health status according to age group and gender

Age group	Healthy		Non	
	M%	F%	M%	F%
35-44	14	15	0.8	1
45-54	7.1	9.1	3	4.3
55-64	6.2	8.4	3.2	6.1
65-75	4	5	5.6	7.4
Total	31.3	37.5	12.4	18.8

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