



Prevalence of Alveoloplasty In Different Age Groups as An Adjunct Prior To Prosthetic Rehabilitation

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ABSTRACT

To evaluate the prevalence of alveoloplasty in different age groups as an adjunct prior to prosthetic rehabilitation. A retrospective study was done in an institutional setting. The data for the study was retrieved from the college's patient records. All patients who underwent alveoloplasty at a given time frame from June 2019 - March 2020 were taken into consideration. The patients' age, gender and treatment done were retrieved and tabulated. The data was then analysed using a software (SPSS). A total of 121 patients were involved in this study, 62 male patients and 59 female patients. The prevalence of alveoloplasty was seen in the 51-60 years age group. A cross analysis between age and gender was done. The results showed a maximum amount of alveoloplasty cases done in the 51-60 years age group, and a slight number of increased male patients who underwent alveoloplasty than female patients. Alveoloplasty done in 51-60 years age group showed 20 male patients and 18 female patients

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INTRODUCTION

The term "alveoloplasty" simply means any operation which consists of the removal or excision of a part of the alveolar process. Dr. D. E. Jenkins of the University of Omaha provided the term "alveolectomy" [1][2][3]. Alveoloplasties were performed as early as 1853. In this year, A. T. Willard of Chelsea, Massachusetts, wrote for the Dental News Letter of the preparation of the ridge of a patient after he had extracted teeth [4][5][6]. Our present conception of alveoloplasty pertains to the correction of the contours of the alveolar ridge. Some members of the dental profession believe that the term alveolectomy is a misnomer and that alveolectomy more properly refers to the operation since alveolectomy would indicate the entire

removal of the alveolar process. However, the writer, along with several others, prefers the term "alveoloplasty," due to the fact that it is actually a plastic repair to the ridge [7][8][9]. One argument against alveoloplasty was the removal of the labial plate would impair the regeneration of bone, we know today that this belief has no sound basis. There are, however, operators in the field of dentistry today who believe that the labial or buccal plate should not be removed, unless it was fractured as a result of the extractions. They base this assertion on the fact that a better base for a denture results if the labial or buccal plate is left intact. [7][10][11]. Dingman and Hayward, who said: "Successful management of minor oral surgical problems presupposes steadfast and slavish

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adherence to the principles of hemostasis, asepsis, and anesthesia, as well as a knowledge of anatomy, pathology, and physiology of oral tissues[12][13–15]. One of the most prevalent indications for alveoloplasty today is the desire for immediate denture service. For such a service the alveoloplasty is necessary in most instances. From the standpoints of preservation of the alveolar ridges, more rapid healing, esthetics, and general comfort of the patient, immediate denture service is indicated whenever possible. Previously we have focused our research on various invitro and invivo studies. [16–35] We have currently shifted our focus to this retrospective analysis. The aim of the present study was to evaluate the prevalence of alveoloplasty in different age groups.

MATERIALS AND METHODS

A retrospective study was conducted in an institutional setting. The ethical clearance was received from the institute's ethical committee. The study involved all the patients who had undergone alveoloplasty in a given time frame.

Selection Of Subjects

All patients who had undergone alveoloplasty were considered for this study. The time period of choice was from June 2019 to March 2020. A total of 86000 patients records were reviewed and analyzed. There were three people involved in this study- the guide, reviewer and researcher. All available data was collected and sorted.

Data Collection

The patient details were retrieved from the institute's patient records. Data regarding the patient's age, gender and treatment done were considered for this study. Cross verification of the data was done by a second reviewer, to avoid any missing or repetitive data. The data was manually retrieved and tabulated in excel and sorted.

Inclusion Criteria

All patients who underwent alveoloplasty were considered for this study. All age groups were considered.

Exclusion Criteria

Patients with incomplete records were removed from the study. Repetitive entries were also excluded.

Statistical Analysis

The tabulated data was analysed using SPSS software (IBM SPSS statistics 260). The method of analysis that was used was "chi square test". The analysis was done between age and treatment done, gender and treatment done.

RESULTS AND DISCUSSION

Among the 121 patients included in this study, most prevalent age group in which alveoloplasty was performed was in 51-60 years age group (31.4%), followed by 61-70 years (27.3%), 41-50 years (23.1%), 71-80 years (9.9%), 31-40 years (6.6%), 81-90 years (0.8%), 21-30 years (0.8%) (as shown in Figure 1). Prevalence of alveoloplasty based on gender showed that more cases were seen in male patients (51.2%) than female patients (48.8%) (as shown in Figure 2). On finding the correlation between age and gender, it was found that alveoloplasty done in 51-60 years age group showed 20 male patients and 18 female patients (as shown in Figure 3). The margins of the bone should be smoothed when extractions are done to facilitate healing of the tissues. When this is not done it may become necessary to re-explore the tissues and smooth these margins so that normal healing may occur. These areas also may become irritated and painful when a prosthetic appliance is placed upon them. Contraindications for alveoloplasty must be determined by the operator after he has examined the patient and taken a history of the case. As have been previously described in the literature by Dingman and Hayward, "the constitutional or general conditions that would contraindicate minor oral surgery may be classified under two headings as "general conditions" and "local conditions." The majority of conditions requiring correction are located in the maxilla. Mandibular anomalies are in the minority. There are some instances where alveoloplasty is indicated in which teeth are present where roentgenograms disclose very dense bone surrounding the roots. Surgical removal of these teeth is preferred by many authors as it prevents unforeseen fracturing of the labial and buccal plates. The technique for immediate dentures falls in this category. In this study we found that more patients undergoing alveoloplasty procedures were males (51.2%) than females (48.8%), this goes in accordance with the study done by the author [36][37]. Majority of cases who underwent alveoloplasty were under the 51-60 years age group, this also goes in accordance to other authors who found range of age to be 33 to 83 years [36][38]. In 1976, Michael and Barsoum studied the amount and duration of postoperative bone resorption and ridge contour changes in immediate denture patients using various surgical techniques such as: (1) simple extractions without additional surgery, (2) extractions with labial cortical alveolectomy, and (3) extractions with Dean's intraseptal alveolectomy. Using serial sagittal contour photographs of study casts and serial cephalometric radiographs of patients, they showed that the three techniques produced almost the same amount of bone resorption at the end of 3

months, but thereafter, the differences were noteworthy (with statistical significant difference). At the end of 6 and 12 months, the nonsurgical extractions had produced the least amount of bone resorption with a marked slowing of the rate by 6 months, whereas both alveoloplasty techniques resulted in continuing bone resorption[39,40]. Dean's intraseptal alveoloplasty was particularly well suited for immediate denture surgery. For the cases of extreme premaxillary protrusion, Obwegeser in 1966 suggested a modification of Dean's technique wherein both the palatal and labial cortices were fractured and repositioned.[41][42]

CONCLUSION

The margins of the bone should be smoothed when extractions are done to facilitate healing of the tissues. Root fragments left in the alveolar bone often become sources of irritation and foci of infection when dentures are placed over them. Smaller bony spicules can be removed at the time of extraction in order to prevent a second surgical procedure later.

AUTHOR CONTRIBUTIONS

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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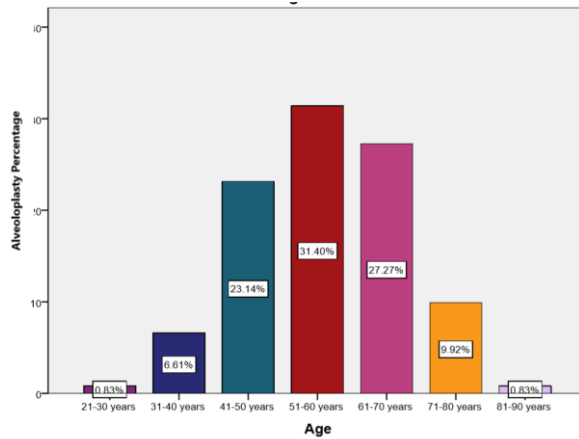


Figure 1: The above bar graph depicts the number of patients undergone alveoloplasty .X axis- age group, Y axis the percentage of patients who underwent alveoloplasty..Alveoloplasty was mainly done in the age group 51-60 years(31.4%,followed by the 61-70 years age group27.2%).Inference: alveoloplasty was done most in the age group 51-60 years age group.

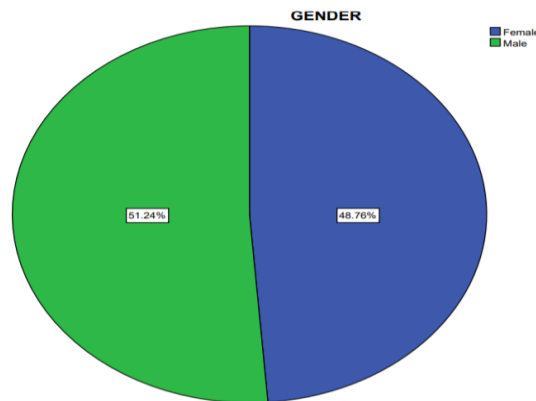


Figure 2: the above pie chart depicts the gender distribution in alveoloplasty Males (green in color,51.2%) underwent alveoloplasty more than females(blue in color,48.7%).

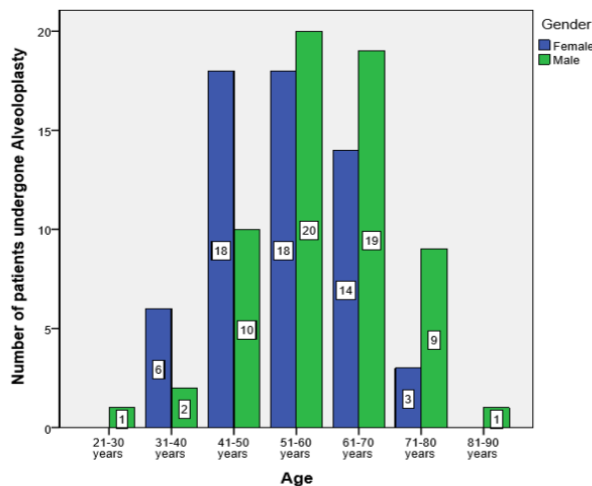


Figure 3: the above bar graph depicts the association between age and gender.X axis- age, Y axis- number of patients who underwent alveoloplasty. .Alveoloplasty done in the 51-60 years age group showed 20 male patients (green) and 18 female patients(blue).Chi-square test was done. P value is 0.12(P>0.05), not statistically significant.Inference:males underwent more number of alveoloplasty procedures than females in the 51-60 years age group.