



Original Research

Prevalence Of Flabby Ridge In Completely Edentulous Patients Among The Chennai Population.

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Abstract

**Aim:** The aim of this present study was to evaluate the prevalence of flabby ridge in completely edentulous patients among the Chennai population.

**Background:** Flabby tissue refers to excessive and movable soft tissue, while a ridge is an elevated, long, narrow, and raised crest. A flabby ridge is a specific condition characterized by the mobility of the soft tissue of maxillary or mandibular alveolar ridge. This occurs when soft tissue hyperplasia replaces the underlying alveolar bone.

**Materials and Methods:** The study is a retrospective study with data collection obtained from Dental Information Archiving Software (DIAS). Parameters assessed include age, gender, and flabby ridge patients. The collected data was tabulated in Microsoft Excel sheet and statistically analyzed. The correlation between the prevalence of flabby ridge, genders and different ages was analyzed by employing the Chi-Square test.

**Results:** In the present study, a total of 31 patients aged between 31 to 85 year old were assessed for specific parameters such as gender, ages, flabby ridge, and its occurrence in different arches. Patients with flabby ridge were found more in females with 83.9% when compared to males. The most common age group is 51 to 60 years old with a 41.9% prevalence. The maxillary arch is most commonly affected by flabby ridge (55.6%) compared to the mandibular arch. There is a positive correlation between gender and flabby ridge prevalence with a p-value <0.05 (statistically significant). However, the correlation between age and flabby ridge prevalence showed insignificant value, p>0.05.

**Conclusion:** Within the limits of the present study, the prevalence of flabby ridge among the completely edentulous patient, female is most affected with the most common age between 51 to 60 years old and the maxillary arch being the most common arch.

**Keywords:** flabby ridge, edentulous, maxillary arch, mandibular arch, prevalence

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## INTRODUCTION

Complete denture prosthodontics is a vital component of dental education and care for geriatrics.[1,2,3] The effectiveness of a complete denture is largely determined by fundamental impression-making principles, including the maximum coverage of the supporting area, the creation of a peripheral seal that does not interfere with functional movements, and precise adaptation to the tissue without causing harmful displacement.[4,5] Recording the entire functional denture-bearing area ensures maximum support, retention, and stability for the denture during usage. [2,6,7,8] However, challenges occur when the quality of the denture-bearing area is suboptimal. A flabby ridge can lead to issues such as pain or looseness of the complete denture that rests on it, compromising the overall fit and function.[9,10]

Flabby tissue is an excessive and movable tissue, the ridge is an elevated body part, a long, narrow, and raised crest.[11] A flabby ridge affects both maxillary and mandibular alveolar ridges and is characterised by hyperplastic soft tissue replacing the underlying resorbed alveolar bone.[12,13]

Flabby ridge can occur in instances where natural teeth oppose an edentulous ridge, as a result of unplanned, uncontrolled dental treatment, or due to dental extraction.[14,15] It is a displaceable hyperplastic flabby tissue that commonly occurs on the anterior region of the maxilla.[16] It also occurs as a combination syndrome in the mandibular alveolar ridge, when extensive bone resorption has occurred. Histologically, flabby ridges are composed of hyperplastic mucosal tissue, with a mix of loosely arranged fibrous and dense collagenous connective tissue. (Figure 1).[17,18]



**Figure 1- Flabby ridge affecting maxillary and mandibular alveolar ridge.**

The condition, often referred to as "combination syndrome," is believed to arise from the presence of natural teeth opposing an edentulous area. [14,15,19] In 1972, Kelly described "combination syndrome" based on observations from a three-year follow-up of 510 patients. Patients with complete maxillary denture opposing natural mandibular teeth and a distal extension removable partial denture were studied.[20] He could find evidence of enlargement of maxillary tuberosities, alveolar bone resorption in anterior maxilla and bone resorption beneath the mandibular denture bases.[21]

The reported prevalence of flabby ridge varies, with 24% of edentulous maxillae and 5% of edentulous mandibles. In edentulous patients, flabby ridges occupy the anterior region of both arches and are often associated with a degree of bone resorption. In severe cases, the resorption can extend to the level of the anterior nasal spine.[22]

Therefore, the study was planned to evaluate the prevalence of flabby ridge in completely edentulous patients among the Chennai population.

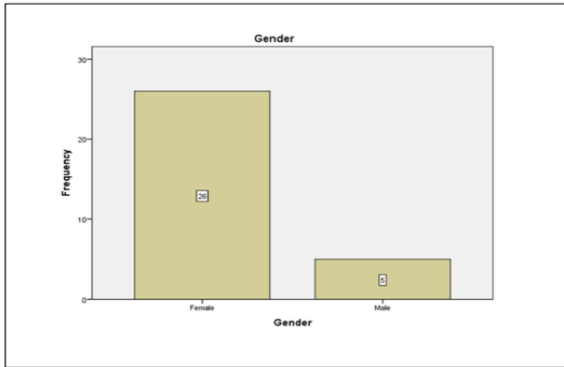
## MATERIAL AND METHOD

The present study was a retrospective study involving 31 patients (26 females and 5 males) aged between 31 to 90 years old visiting Saveetha Dental College and Hospital, Chennai from June 2019 till April 2020. Ethical approval for the study was obtained from the Institutional Ethical Committee of Saveetha Dental College. Data were collected from Dental Information Archiving Software (DIAS) of complete edentulous patients that have a flabby ridge, their age, and gender.

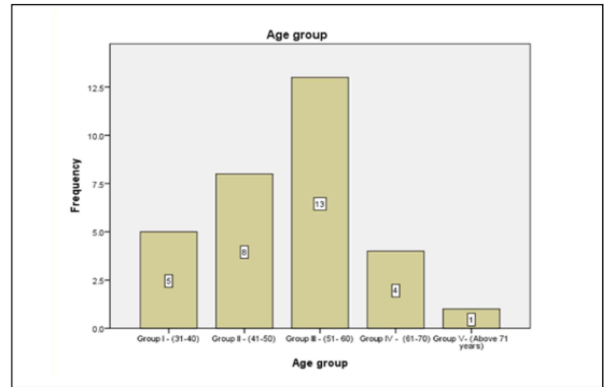
Data analysis was done with the Statistical Package for Social Science (SPSS) for Windows (Version 20). Chi-Square test was used to determine the association of flabby ridge, genders, age, and occurrence of the arch. The level of statistical significance was set at  $p < 0.05$ . All results are represented as bar graphs.

**RESULT**

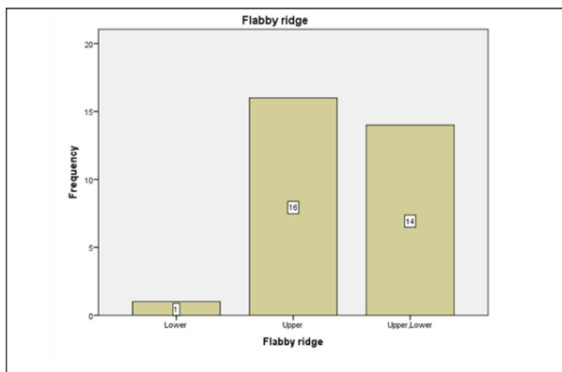
A total of 31 patients were examined during the study period. Female patients reveal higher prevalence compared to males. Female prevalence is 83.9%, Graph 1 shows the association between gender and flabby ridge distribution. Graph 2 shows the age group and flabby ridge distribution. The age group between 51 to 60 years old most affected by a flabby ridge with a prevalence of 41.9%. In Graph 3, arch and flabby distribution show that the maxillary arch is most common with a flabby ridge (51.6%). The statistical analysis Chi-Square test shows the p-value is  $p=0.027$ ,  $p<0.05$ , a positive correlation between gender and flabby ridge prevalence, as shown in Table 1. In Table 2, a negative correlation between age group and flabby ridge prevalence with  $p\text{-value}=0.240$ ,  $p>0.05$  (statistically insignificant).



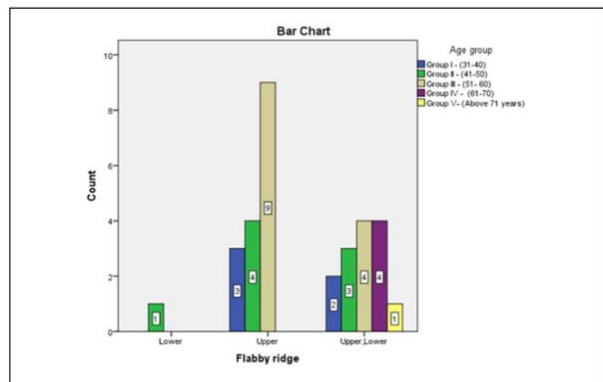
**Graph 1: Gender and flabby ridge Distribution**



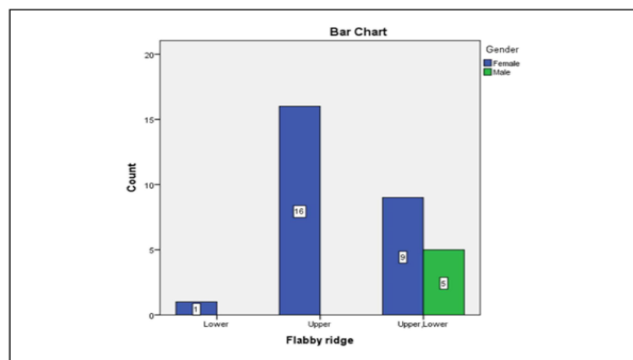
**Graph 2: Age group and flabby ridge distribution**



**Graph 3: Arch and flabby ridge distribution.**



**Graph 4: Age group based on different arch and flabby ridge distribution**



**Graph 5: Gender based on different arch and flabby ridge distribution.**

	Value	df	Asymp. Sig. (2- sided)
Pearson Chi square	7.239 <sup>a</sup>	2	0.027

**Table 1: Showing Chi-square test with positive correlation: Gender - Flabby ridge (Chi square test, P=0.027, P <0.05) –Statistically significant**

	Value	df	Asymp. Sig. (2- sided)
Pearson Chi square	10.369 <sup>a</sup>	8	0.240

**Table 2: Showing Chi-square test with negative correlation: Age group - Flabby ridge (Chi square test, P=0.240, P >0.05) –Statistically insignificant**

## DISCUSSION

In this study, patients with flabby ridges were analyzed in relation to gender, age, and arch occurrence. The p-value of less than 0.05 ( $p < 0.05$ ) indicates a statistically significant association between gender and the prevalence of flabby ridges.

The result shows females have more prevalence (83.9%), the most common age groups are between 51 to 60 years (41.9%) and the maxillary arch (51.6%) is the most common arch for occurrence of the flabby ridge.

In previous studies, a case report by Bansal et al. showed a study of two female patients age 60 and 56 years old. There was no gender prevalence suggested in previous studies. There was no study done specifically assessing gender prevalence with the flabby ridge.(23)

In the case report by Singh et al. 65 years old male was reported with the flabby ridge. Most case reports showed patients between 51 to 70 years old with the flabby ridge. There was no study done for assessing age prevalence with the flabby ridge.(24)

Saluja, Balvinder Singh et al. reported the same finding with the present study in the prevalence of arch with the flabby ridge. A previous study showed a 24% prevalence in the maxillary arch occurrence of the flabby ridge.(25)

Flabby ridges are a common problem and hence needs to be managed effectively while planning for prosthetic replacement. More studies are warranted to understand the dimensions of the problem and targeted at management of these patients.

The limitation of the present study is due to the small sample size, and a single-center study was used. The present study also does not include other ethnic populations.

The present study can be improved by increasing the sample size. In the future, the present study can be planned in a better way by including a multi-ethnic population.

## CONCLUSION

Within the limits of the present study, the prevalence of flabby ridge among the completely edentulous patients, females are the most affected with most common in age between 51 to 60 years old and the maxillary arch being the most common arch affected.

## FINANCIAL SUPPORT AND SPONSORSHIP

Nil

## CONFLICTS OF INTEREST

There are no conflicts of interest

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