

Original Research Article

Prevalence of Signs of Combination Syndrome: A Clinical Study**Dr. Rajesh Kumar Reddy Juturu¹, Dr. Padmakanth Mannava², Harkanwal Preet Singh³**¹Reader, Department of Prosthodontics, Lenora institute of dental sciences and research centre, Rajahmundry, Andhra Pradesh, India²Associate Professor, Dept. Of Periodontics, Triveni institute of dental sciences, hospital & research centre, bilaspur, Chhattisgarh, India³Reader, Oral Pathology, Dasmesh Institute of Research and Dental Sciences, Faridkot, Punjab, India***Corresponding Author:**

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Abstract: Combination syndrome when an edentulous maxilla is opposed by natural mandibular anterior teeth. The present article aims at recording the signs of combination syndrome in study population. This study was conducted in department of Prosthodontics in 2016. It included 160 patients having edentulous maxilla wearing maxillary denture and partially edentulous mandible wearing mandibular removable partial denture (Kennedy class I). They were assessed for various signs. 160 (30%) patients were found positive for combination syndrome out of 480 examined cases. Out of 160 patients, males were 75 and females were 85. Maximum cases were recorded for lack of maxillary denture adaptation (male- 13, female- 15). The need for replacement for maxillary denture was seen equally in 11 cases in males and females. Lack of mandibular denture adaptation was seen in males (9) and females (9). Growth of the tuberosities was seen in 8 males and 10 females. Need for replacement for mandibular denture was seen in 10 males and 5 females. The difference was significant (0.02). Papillary hyperplasia was significantly higher in females (14) than males (7). Hypermobility of the anterior part of the maxilla was seen significantly higher in females (12) than males (6). 6 males and 2 females showed extrusion of lower anterior teeth. The difference was significant. Author concluded that the prevalence rate of combination syndrome was 30% with slight female predominance.

Keywords: Combination syndrome, mandibular denture, papillary hyperplasia

INTRODUCTION

The absence of teeth can be managed by partial or complete denture if patient has few missing teeth or complete loss of teeth respectively. The prognosis depends upon various factors. The situation becomes difficult when maxillary complete denture opposes mandibular removable partial denture [1].

Combination syndrome by Kelly [2] is defined as the characteristic features that occur when an edentulous maxilla is opposed by natural mandibular anterior teeth, including loss of bone from the anterior portion of the maxillary ridge, overgrowth of the tuberosities, papillary hyperplasia of the hard palatal mucosa, extrusion of mandibular anterior teeth, and loss of alveolar bone and ridge height beneath the posterior mandibular removable dental prosthesis bases – also called anterior hyperfunction syndrome.

Later in 1979, Saunders, *et al* [3] added six more characteristics to the Kelly's work: (1) loss of vertical dimension of occlusion, (2) occlusal plane discrepancy, (3) anterior spatial repositioning of the

mandible, (4) poor adaptation of the prostheses, (5) epulis fissuratum and (6) periodontal changes.

According to Kelly, the loss of bone from anterior part of maxillary jaw is the key to the other changes of combination syndrome. The changes in tissue form and health seen in this syndrome can be attributed to several factors, one of which is the biomechanical factor. When mandibular anterior teeth are present, patients tend to favor these teeth functionally because of the ability to generate maximum force. Excessive anterior function and parafunction in excursive movements constantly overload the anterior ridge to result in alveolar bone resorption and possible development of epulis fissuratum.

The aim of the present study is to assess the signs of combination syndrome in patients.

MATERIALS & METHODS

This study was conducted in department of Prosthodontics in 2016. It included 160 patients having edentulous maxilla wearing maxillary denture and

partially edentulous mandible wearing mandibular removable partial denture (Kennedy class I). Further criteria were that they had been using the prostheses for not less than 2 years.

Patients were examined for the hypermobility of the anterior part of the maxilla (HAM); the anterior maxillary residual was palpated looking for a presence of loose hypermobile tissue overlying the alveolar ridge, growth of the tuberosities (GT), papillary hyperplasia (PH), extrusion of the mandibular anterior teeth (EMAT), epulis fissuratum (EF), lack of

adaptation of prostheses (LA maxilla/ mandible), necessity for replacements of prostheses (NR maxilla/ mandible). Results thus obtained were subjected to statistical analysis using SPSS version 15.0. P value less than 0.05 was considered statistical significant.

RESULTS

160 (30%) patients were found positive for combination syndrome out of 480 examined cases (Figure 1). Out of 160 patients, males were 75 and females were 85 (Table 1). The difference was non significant.

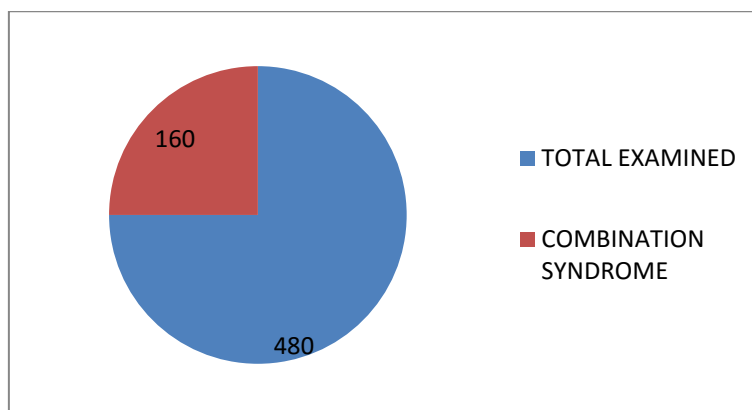


Fig-1: Number of Combination Syndrome Patients in Examined Cases

Table 1: Distribution of Patients

Total - 160		
Male	Female	P Value
75	85	1

Maximum cases were recorded for lack of maxillary denture adaptation (male- 13, female- 15). The need for replacement for maxillary denture was seen equally in 11 cases in males and females. Lack of mandibular denture adaptation was seen in males (9) and females (9). Growth of the tuberoisities was seen in 8 males and 10 females. Need for replacement for mandibular denture was seen in 10 males and 5 females.

The difference was significant (0.02). Papillary hyperplasia was significantly higher in females (14) than males (7). Hypermobility of the anterior part of the maxilla was seen significantly higher in females (12) than males (6). 6 males and 2 females showed extrusion of lower anterior teeth. The difference was significant (Table 2).

Table 2: Prevalence Indices

Indices	Male	FEMALE	P Value
ELAT	6	2	0.04
EF	5	7	0.2
GT	8	10	0.2
HAM	6	12	0.02
PH	7	14	0.01
NR Maxillary	11	11	1
NR Mandibular	10	5	0.02
LA Maxillary	13	15	1
LA Mandibular	9	9	1
Total	75	85	

DISCUSSION

Treatment of patients with an edentulous maxilla opposed to natural mandibular anterior teeth and a distal-extension RPD is considered a challenge

for dental practitioners [4]. Combination syndrome has a prevalence rate of approximately 24% for denture patients. Therefore, it is necessary for dentists to understand the particular problems of patients and

provide a comprehensive treatment plan. Increasing pressure on the premaxillary alveolar ridge and loss of adequate posterior occlusal contacts are important factors in relation to combination syndrome [5].

This study was conducted on 480 patients having maxillary denture and Kennedy class II RPD. Out of 480, 160 cases showed combination syndrome. Crum RJ [6] in his study have found 27% prevalence rate. However in our study, it was 30%. Females were more as compared to males.

Lack of maxillary denture adaptation, need for replacement for maxillary denture and lack of mandibular denture adaptation showed higher prevalence rate as compared to other indices.

The necessity for replacement of complete prosthesis has a greater prevalence than the necessity to replace the lower denture. Maybe this can be explained by mechanical forces acting in a Kennedy Class II RPD, which generates less torque to abutment teeth [7].

The growth of the tuberosities was often seen unilaterally, accentuating the lack of occlusal stability provided by acrylic teeth. One can theorize that disocclusion on the working side with natural teeth would generate a lever force on the non-working side with acrylic teeth, dislodging the complete prosthesis, giving space for down growth of the tuberosities and leading to the resorption of mandibular residual ridges [8].

We found 7.5% cases of epulis fissuratum. Shen K [9] found 11% of cases. There is need to check for denture flanges to avoid these complications.

Maximum support of the denture-bearing area, preservation of the mandibular posterior abutment, and balanced occlusion were all proposed to prevent bone loss and excess pressure on the anterior maxillary alveolar ridge. Similarly, Van Waas *et al* [10] suggested the avoidance of total tooth extraction, the preservation of a few teeth, and the use of overdentures.

CONCLUSION

Author concluded that the prevalence rate of combination syndrome was 30% with slight female predominance. There should be proper evaluation of patients after giving prostheses to prevent occurrence.

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