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Orthognathic surgery in class 3 malocclusion patients and implant treatment in edentulism patients..

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ABSTRACT

Background: This study was conducted to assess orthognathic surgery in class 3 malocclusion patients and implant treatment in edentulism patients.

Material and methods: This study comprised of 100 individuals. All the subjects had been explained about the study procedure and were asked to give consent. The participants underwent oral clinical examination. It was found that 50 subjects had class 3 malocclusion and 50 subjects had edentulism. The subjects were divided into two groups. Group 1 comprised of subjects with class 3 malocclusion and group 2 comprised of subjects with edentulism. The treatment plan was prepared for these individuals and the findings were compared and tabulated. Statistical analysis was conducted using SPSS software.

Results: In this study, there were 50 subjects in group 1 (class 3 malocclusion) and there were 50 subjects in group 2 (edentulism). There were total 45 males and 55 females in this study with 26 males and 24 females in group 1 and 19 males and 31 females in group 2. All the subjects with class 3 malocclusion underwent orthognathic surgery for treatment and all the subjects with edentulism underwent dental implant treatment.

Conclusion: From the findings of the study, it can be concluded that there was equal prevalence of class 3 malocclusion and edentulism in this study. Females were more effected as compared to men. All the subjects with class 3 malocclusion underwent orthognathic surgery and dental implant treatment was planned for the subjects with edentulism.

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Keywords: *Malocclusion, Edentulism, Dental Implants, Orthognathic Surgery*

1. INTRODUCTION

The differential diagnosis of Class III malocclusion is crucial for achieving successful treatment outcomes, and the treatment options available for this condition largely rely on the patient's developmental age and the specific characteristics of the malocclusion. Non-growing individuals with Class III malocclusion may exhibit a range of dentoalveolar and skeletal issues[1], where mild cases can frequently be managed through orthodontic camouflage, whereas significant skeletal discrepancies necessitate orthognathic surgery in conjunction with orthodontic appliance therapy.

Edentulism refers to the condition of being edentulous, meaning the absence of natural teeth.[2] Complete edentulism denotes an oral cavity devoid of any teeth. Sufficient dentition is crucial for overall well-being and quality of life. Edentulism

represents a significant public health challenge for the elderly and has a clear impact on the delivery of primary care.

This condition is both devastating and irreversible, often regarded as the 'ultimate indicator of disease burden in oral health.' Individuals experiencing edentulism display a diverse array of physical variations and health issues. The loss of teeth influences mastication, speech, and can lead to poor aesthetics, which subsequently affects the quality of life.[3,4]

This study was conducted to assess orthognathic surgery in class 3 malocclusion patients and implant treatment in edentulism patients.

2. MATERIAL AND METHODS

This study comprised of 100 individuals. All the subjects had been explained about the study procedure and were asked to give consent. The participants underwent oral clinical examination. It was found that 50 subjects had class 3 malocclusion and 50 subjects had edentulism. The subjects were divided into two groups. Group 1 comprised of subjects with class 3 malocclusion and group 2 comprised of subjects with edentulism. The treatment plan was prepared for these individuals and the findings were compared and tabulated. Statistical analysis was conducted using SPSS software.

Results

Table 1: Group-wise distribution of subjects

Groups	Number of subjects	Percentage
Group 1 (Class 3 malocclusion)	50	50
Group 2 (Edentulism)	50	50
Total	100	100

In this study, there were 50 subjects in group 1 (class 3 malocclusion) and there were 50 subjects in group 2 (edentulism).

Table 2: Gender-wise distribution of subjects.

Groups	Number of males	Number of females	Total
Group 1	26	24	50
Group 2	19	31	50
Total	45	55	100

There were total 45 males and 55 females in this study with 26 males and 24 females in group 1 and 19 males and 31 females in group 2.

Table 3: Treatment plan for class 3 malocclusion and edentulism

Groups	Treatment plan
Group 1(Class 3 malocclusion)	Orthognathic surgery
Group 2(Edentulism)	Dental implants

All the subjects with class 3 malocclusion underwent orthognathic surgery for treatment and all the subjects with edentulism underwent dental implant treatment.

3. DISCUSSION

The primary aim of surgical orthodontic treatment is to realign the jaws in order to attain an aesthetic profile alongside optimal occlusion and masticatory function. The specific type of orthognathic surgery required is determined by the affected jaw and the degree of sagittal discrepancy. Bimaxillary surgeries are indicated when the sagittal discrepancy cannot be rectified through single-jaw surgery or when anatomical constraints exist. The general limits for surgical maxillary advancement range from 6 to 8 mm, while mandibular setback is typically limited to 4 to 6 mm.[5]

Edentulism is a permanent and debilitating condition, often referred to as the "ultimate indicator of disease burden for oral health." Although the incidence of complete edentulism has decreased over the past ten years, tooth loss continues to be a major health issue globally, particularly among the elderly population.[6] Nevertheless, the rate of complete edentulism differs from one country to another and from one region to another, making comparisons between national samples difficult due to

the influence of various factors such as lifestyle, economic conditions, education, knowledge and beliefs regarding oral health, and attitudes towards dental care.[7]

This study was conducted to assess orthognathic surgery in class 3 malocclusion patients and implant treatment in edentulism patients.

In this study, there were 50 subjects in group 1 (class 3 malocclusion) and there were 50 subjects in group 2 (edentulism). There were total 45 males and 55 females in this study with 26 males and 24 females in group 1 and 19 males and 31 females in group 2. All the subjects with class 3 malocclusion underwent orthognathic surgery for treatment and all the subjects with edentulism underwent dental implant treatment.

Johnston et al.[8] indicated that bimaxillary surgery is the more commonly employed procedure, occurring in 75% of cases, and it has 3.4 times greater odds of completely correcting the ANB angulations compared to single-jaw surgery.

In the United States, according to Slade et al.[9] surveyed 432,519 adults; among adults over 15 years of age and above, the prevalence of edentulism was 4.9%. In Canada, the overall rate of edentulism in 2010 was 6.4% - 21.7% among adults between 60 and 79 years of age.[10]

Peltzer et al.[11] surveyed complete edentulism among older adults (50 years) and above in all of China, Ghana, India, Mexico, Russia, and South Africa. They found that the overall prevalence of edentulism was 16.3% in India and 9% in China. Mexico was the higher prevalence rate at 21.7%, Russia comes at second place in prevalence at rates of 18%, and the prevalence in South Africa was 8.5%. The least prevalence rate was Ghana at a rate of 3%.

4. CONCLUSION

From the findings of the study, it can be concluded that there was equal prevalence of class 3 malocclusion and edentulism in this study. Females were more effected as compared to men. All the subjects with class 3 malocclusion underwent orthognathic surgery and dental implant treatment was planned for the subjects with edentulism.

REFERENCES

[1] Mackay F, Jones JA, Thompson R, Simpson W. Craniofacial form in class III cases. Br J Orthod. 1992;19:15–20.

[2] Adam RZ. Do Complete Dentures Improve the Quality of Life of Patients? University of the Western Cape; 2006.

[3] Cunha-Cruz J, Hujoel PP, Nadanovsky P. Secular trends in socio-economic disparities in edentulism. J Dent Res. 2007;86:131–6.

[4] McGarry TJ, Nimmo A, Skiba JF, Ahlstrom RH, Smith CR, Koumjian JH. Classification system for complete edentulism. J Prosthodont. 1999;8:27–39.

[5] McCollum A, Evans W. Facial soft tissue: The alpha and omega of treatment planning in orthognathic surgery. Semin Orthod. 2009;15:196–216.

[6] Douglass CW, Shih A, Ostry L. Will there be a need for complete dentures in the United States in 2020? J Prosthet Dent. 2002;87:5–8.

[7] Müller F, Naharro M, Carlsson GE. What are the prevalence and incidence of tooth loss in the adult and elderly population in Europe? Clin Oral Implants Res. 2007;18(Suppl 3):2–14.

[8] Johnston C, Burden D, Kennedy D, Harradine N, Stevenson M. Class III surgical-orthodontic treatment: A cephalometric study. Am J Orthod Dentofacial Orthop. 2006;130:300–9.

[9] Slade GD, Akinkugbe AA, Sanders AE. Projections of US edentulism prevalence following 5 decades of decline. J Dent Res. 2014;93:959–65.

[10] Canada CH. Summary Report on the Findings of the Oral Health Component of the Canadian Health Measures Survey, 2007-2009 Health Canada. 2010

[11] Peltzer K, Hewlett S, Yawson AE, Moynihan P, Preet R, Wu F, et al. Prevalence of loss of all teeth (Edentulism) and associated factors in older adults in China, Ghana, India, Mexico, Russia and South Africa. Int J Environ Res Public Health. 2014;11:11308–24.