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CASE STUDY

OCCLUSAL REHABILITATION OF A PATIENT WITH TURNER MOSAIC SYNDROME-A CLINICAL REPORT

***Dr. Sonali S. Dahiwale, Dr. S. P. Dange, Dr. Arun N.Khalikar, Dr. Smita A. Khalikar and Dr Ulhas E. Tandle**

Govt Dental College and Hospital, Aurangabad

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ABSTRACT

A beautiful smile is a key to many hearts! What more would be a tragedy than not having this natural and captivating smile for a sixteen year old girl? The impairment is not just of form and function or for that matter aesthetics! The debilitation extends to the social outlook and psychology of the affected individual. It was such a problem that, the adolescent female having Turner Mosaic syndrome reported to Department of Prosthetic Dentistry. An interim overdenture was provided for the patient. Restoration of the function and aesthetic along with correction of lost vertical dimensions of occlusion was the successful outcome.

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INTRODUCTION

The management of patients with a congenital anomaly affected dentition presents a complex prosthodontic problem. There are systemic complications also to be taken care of. Although the treatment of them is not in our domain, the treatment part has to be taken care of. One such congenital anomaly having the oral manifestation is Turner Mosaic syndrome. It's a chromosomal abnormality. There are only 45 chromosomes, with one X- chromosome missing, producing an XO chromosome complement. Of the affected patients 25% are mosaics, meaning that they have 45XO pattern in some cells and 46XX patterns in others. Short stature, gonadal agenesis, deformed nails and ears are some of the general findings (Brewer and Fenton, 1973). Prosthodontists can be of great help in these cases. Overdentures provide the simplest and effective treatment modality (Brewer and Fenton, 1973). Major objective is preservation of residual ridges- as they have to function for a very long period (Brewer and Morrow, 1980). Hence, if at all possible, whole of the remaining dentition should be used to support the prosthesis. But the treatment of these young or adolescent patients is complicated by limited number of healthy (& hopefully permanent) teeth that can support the prosthesis, and the prognosis of the prosthesis may be poor if there is little or no tooth support (Gorlin and Goldman, 1960). This article describes an overdenture therapy without copings for an adolescent girl having oligodontia as a manifestation of her congenital anomaly.

**Corresponding auther: Dr.Sonali S.Dahiwale,*
Govt Dental College and Hospital, Aurangabad

Clinical Report

A sixteen year old female is reported to Department of Prosthetic Dentistry at Government dental college and hospital, Aurangabad with chief complaint that she wanted to get her missing teeth replaced and improve her appearance (Fig.1). She was a diagnosed case of Turner Mosaic syndrome having typical clinical features. Intraorally and underdeveloped maxilla and mandible were seen with partial anodontia (Fig.2 &3). Most of the present dentition was malformed, with excessive attrition. Multiple unerupted teeth were detected radiographically (probably lacking in eruption force). Over retained maxillary and mandibular teeth with varying degrees of root resorption were seen. Clinical crown height of present posteriors was substantially low and vertical dimension of occlusion was reduced. This led to shortening of the face with moderate collapse of facial musculature (Gorlin and Pindborg, 1964). Attrited occlusal surfaces and reduced vertical dimension caused inability to chew the food properly, which was also one of the major concerns for the patient.

Treatment

On the basis of clinical and radiographical examination retained 51, 52, 53, 61, 63,72,74,75,82 were extracted as they

had almost completely resorbed roots. After a satisfactory healing period, root canal treatment were carried out with remaining teeth and prepared to receive overdentures. The present maxillary teeth are 14,15,17,22,24,25,26,27,28 (Fig.2) and mandibular teeth are 31,33,34,35,36,37,41,43,47 (Fig.3). Primary impression were made. These primary cast were used to prepare custom trays for final impressions; which were made with addition silicon impression material (Fig.4). Routine clinical procedures were followed to obtain jaw relations records and transferring the same to an articulator. To compensate for the loss of vertical dimension, occlusal vertical dimension was raised by $2mm^2$. Anterior teeth of proper size and shade were selected. Characterizations were carried out by roundening of distoincisal angles reducing the flatness of labial surface, narrowing of cervical diameter etc. to give a more feminine and young look to the teeth (Fig.5). Due to limited interarch space posteriorly they had to be ground to almost shells of acrylic (Gorlin and Goldman, 1960). After satisfactory trial, dentures were processed in high impact heat cured acrylic resin. After lab remount and finishing and polishing of dentures were carried out (Fig.6). Patient was explained about the slight discomfort she might experience for a few days, due to increase in vertical dimensions of occlusion (Fig.7).

Fig.1. Pre-Operative (Facial View)

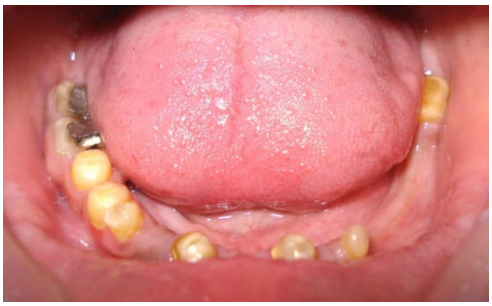

Fig.2. Mandibular arch after tooth preparation

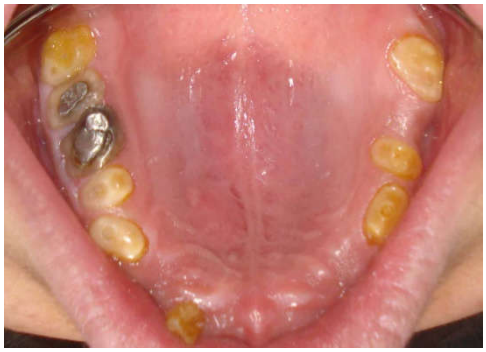

Fig.3. Intra Oral view of maxillary arch after tooth preparation

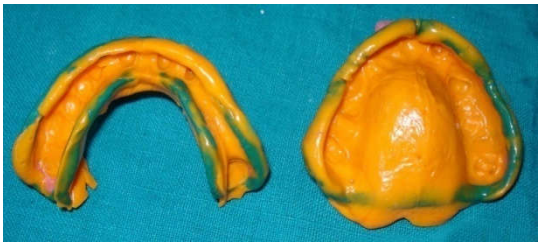

Fig.4. Final Impressions

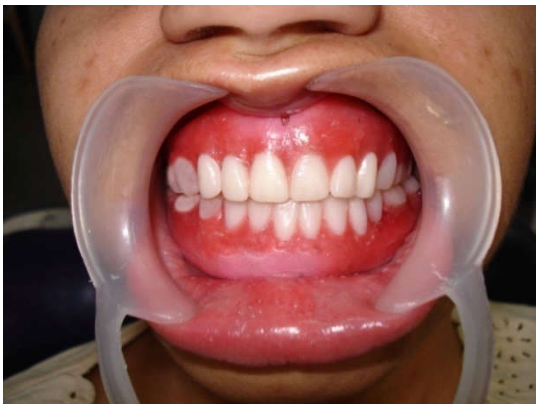

Fig.5. Try-In

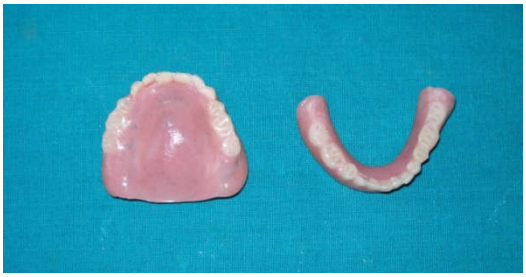

Fig.6. Completed prosthesis

Fig.7. Post operative view

DISCUSSION

Overdentures with out copings were provided for the patient. Though excellent functional and aesthetic results were obtained, a fixed restoration would have had the best patient's compliance. But changes with growth are difficult if not possible with fixed treatment. Hence, overdentures were provided as an interim therapy until growth changes are completed. The therapy was advantageous as it was simple, economic, highly conservative of tooth structure, making it seldom irreversible and making future adjustment, growth and development changes possible (Rogoff and Grasser, 1990).

Also it gave excellent aesthetic results. And finally, definitive treatment would not have altered with this therapy. A rigorous oral hygiene was enforced. Fluoride mouthwash was advised for protection of exposed abutments. Initially slight protrusion of lips with prominent nasolabial and mentolabial folds were seen. But with the correction of vertical dimension and adaptation of facial muscles excellent lip and cheek contours were obtained.

Summary

Maxillary and mandibular overdentures were provided for the patient of Turner Mosaic syndrome. Several other congenital anomalies do have similar oral manifestations. Regardless of the varied systemic features, similar prosthodontic treatment might prove to be helpful in temporarily restoring the form, function and aesthetic of the affected individual.

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