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Case report

Full mouth rehabilitation of a case of rampant caries using a twin-stage procedure

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Introduction

Rampant caries is defined as suddenly appearing, widespread, rapidly burrowing type of caries resulting in early involvement of pulp. Patients affected with rampant caries often have compromised aesthetics and function. Restoration of the carious lesion is a challenge since they are deeply burrowing into the enamel and dentine. Anterior guidance is crucial in human occlusion because it influences molar disocclusion that controls horizontal forces. Molar disocclusion is determined by a cusp-shape factor and an angle of hinge rotation. The three factors which determine disocclusion are: condylar path, incisal path and cusp angle. Hobo and Takayama stated that, "the condylar path shown to have deviation within the individual and its influence on disocclusion is minimal".[1,2] Their twin stage technique develops anterior guidance to create a predetermined, harmonious disocclusion with the condylar path. Condition 1 is used to incorporate a cusp shape factor and condition 2 is used for the angle of hinge rotation.[3]

This article presents prosthodontic rehabilitation of a patient with rampant caries, severely worn dentition and uneven occlusal plane has been treated using twin stage procedure.

Case report

A 26 year old female reported to the Department of Prosthodontics, Army Dental Centre Research and Referral, New Delhi with a chief complaint of multiple decayed teeth and unsightly appearance since few years which is getting deteriorated over a period of time. Patient did not give any medical history and was free from TMJ disorders.

Clinical examination

Extraoral: No facial asymmetry, No abnormality in the TMJ.
Intraoral: Multiple decayed upper and lower dentition with poor oral hygiene. The missing teeth were 24, 26, 36, 37 and 46. Root stumps i.r.t 17, 27, 28, 42, 48 and 45 were present [Fig. 1]. Fractured amalgam restoration i.r.t 16. The patient presented

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with a bilateral class I canine relationship. There were multiple fractured light cure restorations. The vertical dimension was adequate.

Treatment procedure

Extraction of the root stumps i.r.t 17, 27, 28, 42, 48 and 45 and Root canal treatment of 21, 22, 23, 31, 32, 33, 34, 35, 41, 43, 47 was performed [Fig. 2]. Repair of the fractured amalgam restoration i.r.t. 16 was done. Light cure composite core build up of the decayed teeth was carried out. Maxillary and mandibular impressions were made in the alginate impression material and diagnostic casts were obtained. The maxillary cast was mounted using face-bow transfer onto a semiadjustable arcon articulator (Whip-mix) and the mandibular cast mounted using the Lucia jig and centric relation record. Diagnostic wax-up was done on the mounted models to see the final outcome [Fig. 3]. Custom guided incisal table were fabricated with autopolymerizing resin (one with the eccentric movements with anterior segment detached and the second table after the anterior segment was placed back) to simulate the anterior guidance. Before doing the tooth preparation the vertical dimension of occlusion was recorded. Temporary fixed partial dentures of maxillary and mandibular arch were fabricated using the putty index of the diagnostic wax-up. The teeth were prepared in the maxillary arch first and the temporary fixed dental prosthesis was cemented following which the lower teeth were prepared and temporary fixed dental prosthesis cemented with ZnO non eugenol cement [Figs. 4 and 5]. Since the teeth were severely affected by the caries all the active carious lesions were removed while teeth were prepared but the teeth were discoloured having arrested caries in few

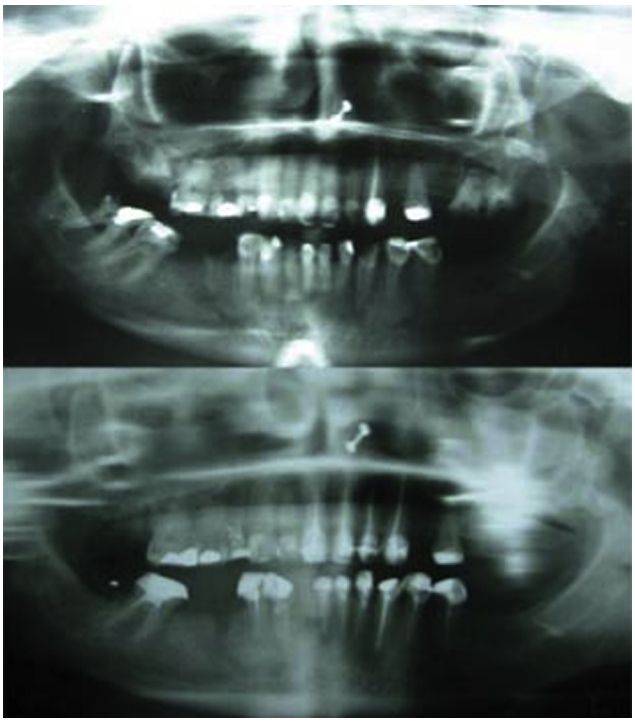

Fig. 2 – Pre and post op OPG.

teeth. Maxillary and mandibular interim removable dental prosthesis were fabricated for the missing posterior teeth. A final full arch impression for maxillary/mandibular teeth was made using heavy-body and light-body impression material and poured in die stone. This assembly was mounted on

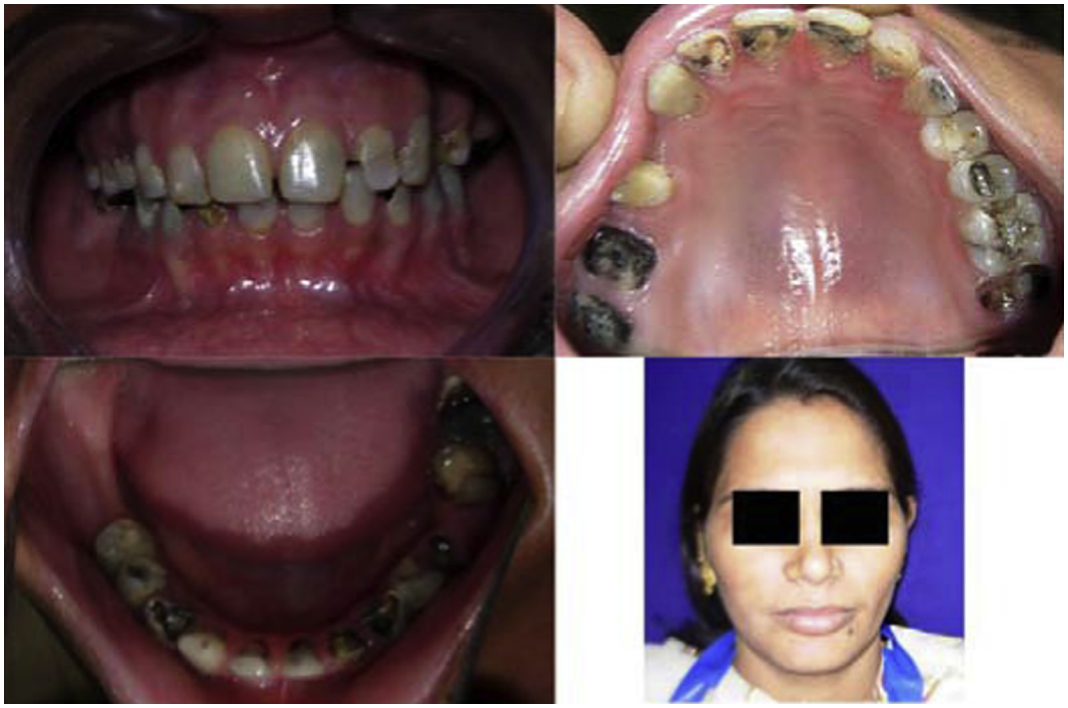

Fig. 1 – Pre-operative intraoral.

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