



## Restoration of Hybrid Prosthesis for Misplaced Implants – A Case Report

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### Abstract

An implant-supported hybrid prosthesis is an acrylic resin complete fixed dental prosthesis and supported by implants might be a solution in extreme cases that the need of the restoration for esthetics, function, lip support, and speech. This clinical report aims to present the esthetic and functional prosthetic rehabilitation of a borderline case with implant-supported hybrid prostheses. A 31yrs old female patient was referred to the department of prosthodontics for rehabilitation of angulated implants. The intra-arch dimension of the patient was excessive and an insufficient peri-oral soft tissue support was observed. The clinical and radiologic examinations showed satisfactory implant health. After 3 years of follow-up, no functional, phonetic, or esthetic problems with the restorations were noted. This case reports suggest that implant-supported hybrid prostheses can be a reliable alternative treatment procedure when a porcelain-fused metal fixed restoration does not satisfy a patient's requirements for esthetics, phonetics, oral hygiene, and oral comfort.

**Keywords:** Restoration; hybrid prosthesis; misplaced implants

### Introduction

Successfully treating patients with missing or non-restorable teeth with a fixed prosthesis can be one of the finest services rendered to dental patients. This art and science of replacing missing teeth or those with hopeless prognosis requires a thoughtful combination of many aspects of dentistry, including patient education, prevention of further dental disease, sound diagnosis, periodontal therapy, experienced surgical skills, occlusal considerations and post restorative maintenance.<sup>1</sup> The path taken to achieving this fixed solution depends upon one's sound knowledge of biological and mechanical principles, the growth of manipulative skills to implement the treatment plan, and the development of a critical eye for judgement and assessment in fine detail.<sup>2</sup> Dental implants have become a standard treatment option for replacement of missing teeth. Originally, it was standard protocol to wait for a period of 6 to 8 months after tooth extraction, to place the dental implant. This was to allow for the healing of the alveolar bone.<sup>3</sup> However, this waiting period was a major disadvantage of this treatment modality. Subsequently, attempts were made to shorten this duration of waiting period.<sup>4</sup> Placing dental implants in the aesthetic zone is considered to be the ultimate challenge for many dentists. The use of dental implants in the esthetic zone has overcome many of the disadvantages of conventional restorative techniques that used anterior natural teeth as abutments. Professionals aimed at creating an implant-supported restoration that replicated natural teeth.<sup>6</sup> Patient acceptance of dental implants in the esthetic zone is increasing due to many factors, including the outstanding results shown in the media. In the past, available bone often restricted placement of implants into areas such as the anterior maxilla. Today prosthetic requirements dictate, to a great extent, the placement of dental implants. Advancements in the field of dental implant therapy have lead to predictable survival rates of dental implants.<sup>7</sup>

### CASE REPORT:

#### CLINICAL EVALUATION:

A 31yr old female was referred to the department of prosthetic dentistry for the rehabilitation of angulated implants as shown in

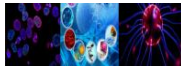
Image A. The patient was concerned about her esthetics and was keen on getting implants done and refused to do either a fixed partial denture or a removable partial denture. On thorough examination it was found that the oral condition of the patient was poor with generalized periodontal breakdown. The implant were placed in a anterio-buccal position. On evaluation for the rehabilitation the interarch space was excessive, were in if a fixed prosthesis was a choice for restoring these implants it might lead to heavy occlusal load on the implants, therefore a hybrid prosthesis was chosen as a treatment option rather than compromising on the health of the implants.



Image A

#### PROSTHETIC PHASE:

A single stage open tray impression was made using addition silicone material. The implant analogues were attached to the impression copings securely and sent to the lab. After pouring the model the metal framework (IMAGE B) of the prosthesis was fabricated using DMLS printing technology and was sent for trial. With very minimal adjustment done the framework was fit over the implant surface. The framework had a passive fit at the implant and abutment interface. An occlusal rim was made and the bite was registered. After which the wax trial appointment was done. The esthetics, phonetics, overjet and overbite were good. The patient was satisfied with the try in denture. The



processing was done with heat cure acrylic resin and final prosthesis was delivered to the patient. Anterior guidance was verified in protrusion. The implant access channel was sealed with gutta-percha cones and covered with a layer of pink coloured composite.



Image C

Image D



Image B



Image E



Image F

#### DISCUSSION :

A correct prosthetic plan and a prosthetic driven implant placement could help the dentist during surgery and the final rehabilitative steps. Moreover, a correct restorative-driven implant position offers important long-term advantages allowing for favourable esthetics and function, as well as optimal occlusion and implant loading.<sup>8</sup> Restoring anterior missing teeth has always been

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a challenge with increasing patient demands and expectations. It is mainly the discretion of the clinician as to how they would handle the clinical scenario as there is no standard treatment cause we have various options ranging from a removable partial denture to an implant retained fixed partial denture prosthesis. And of course there are multiple factors like availability of bone, periodontal health, interarch space, gingival contour, visibility, influencing the prognosis of each treatment plan. In addition, the restorative space for the prostheses, which is measured from the platform of the implant to the opposing occlusion, is often overlooked when implant positions are planned.<sup>9</sup> The intra-arch distance which implant components, metal substructure, the acrylic resin, and the denture teeth are placed plays a major role on selecting appropriate restoration. Clinical observations clearly show that the implants placed were not prosthetically planned prior to placement leading to a compromised position of the implants which will not give good esthetics. Implant supported hybrid prosthesis can provide satisfactory results where esthetic and functional requirements are demanding and challenging as in increased intra-arch space that remains following conventional implant replacements, the dentist needs to plan for an alternative treatment procedure that best suits the situation.<sup>10</sup> The patients acceptance for the prosthesis was fair. The other important aspect to consider is the maintenance of prosthetic rehabilitation as well as the implants by supporting the structure.<sup>10</sup>

#### CONCLUSION :

Although dental implants achieve high survival rates, the success of implant prosthetic therapy significantly relies on an appropriate implant position. Malpositioned implants can cause damage to vital structures, like nerves or vessels. Moreover, improper implant positioning can result in esthetic, biological, and technical complications and can, in extreme situations, render the desired prosthetic rehabilitation impossible to achieve. Such misaligned implants can be restored with the use of new digital technologies, like CAD CAM for printing of the metal substructure to correct the angulation

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