

A technique to virtually transfer full arch fixed implant provisional using a digitally designed transfer guide to maintain occlusal relationship

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Introduction

Transferring accurate centric jaw records is a critical step in any prosthodontic rehabilitation, more so in fabrication of full arch fixed prosthesis. Many clinicians face a challenge in transferring and consistently maintaining this record digitally and ensure full arch implant provisionals are fabricated and delivered at the correct vertical dimension. This technique describes a method to fabricate a transfer guide that can be used to connect milled PMMA provisionals onto implant temporary cylinders at an accurate vertical dimension and maintain occlusal relationship.

Purpose

A method to accurately transfer digitally designed full arch fixed implant provisional by fabrication of a transfer guide that adapts onto a verified implant master cast to preserve the occlusal relationship.

Materials and Methods

After obtaining Jaw records, wax rims on a verified indexed implant master cast are articulated with occlusal record and scanned using a desktop scanner (D2000, 3Shape Copenhagen, Denmark) and imported into CAD software (Exocad, GmbH, Darmstadt, Germany) (Fig 1). A digital provisional design (fig 2) was completed on the master cast and saved as an stl file (Fig 3). To preserve the occlusal relationship, a transfer guide was designed on the exported stl file of master cast with full arch provisional (Fig 4). The transfer guide extended onto the occlusal aspect of implant provisional and intimately adapted into the indices made on the master cast creating a precise fit transfer guide. The implant provisional (Fig 5) and the transfer jig (Fig 6) were milled using a 5-axis mill in PMMA.



Fig 1

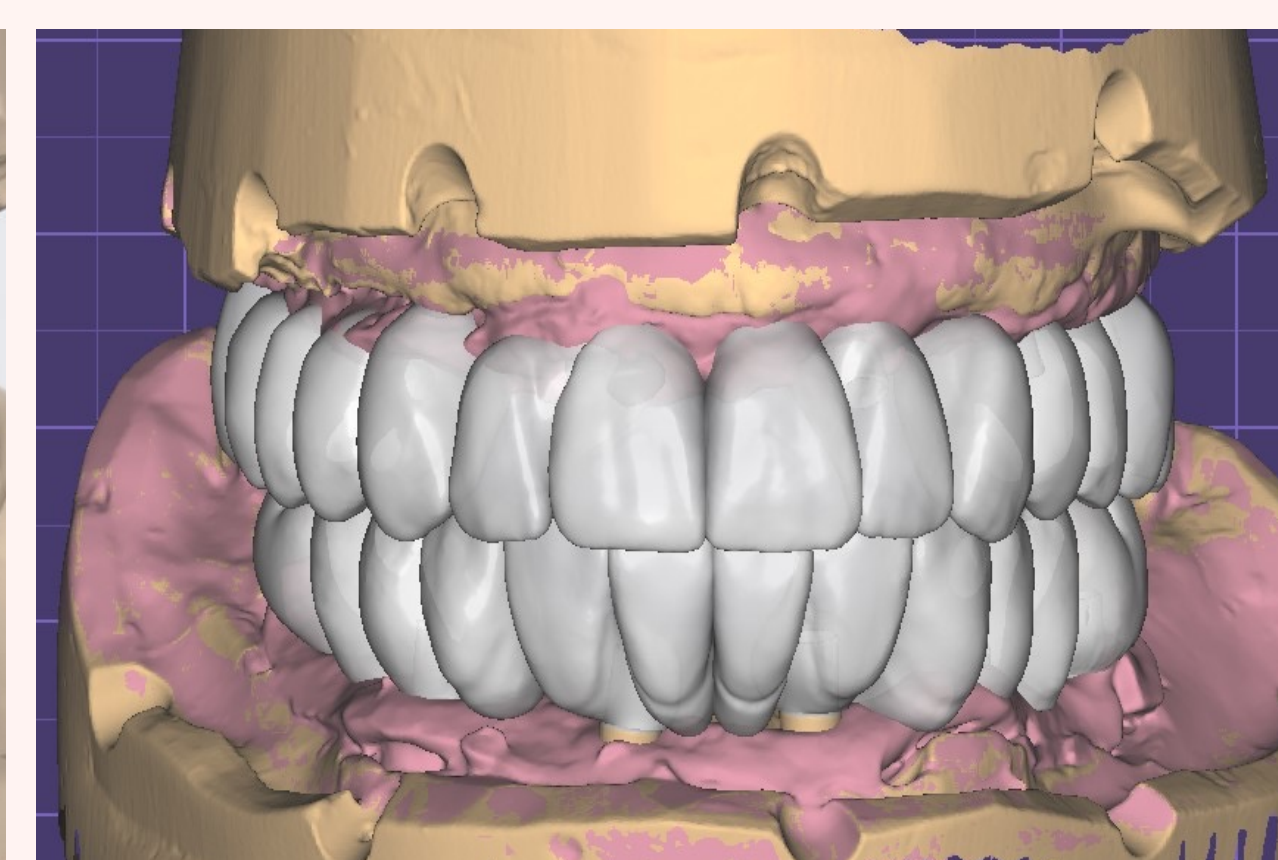


Fig 2

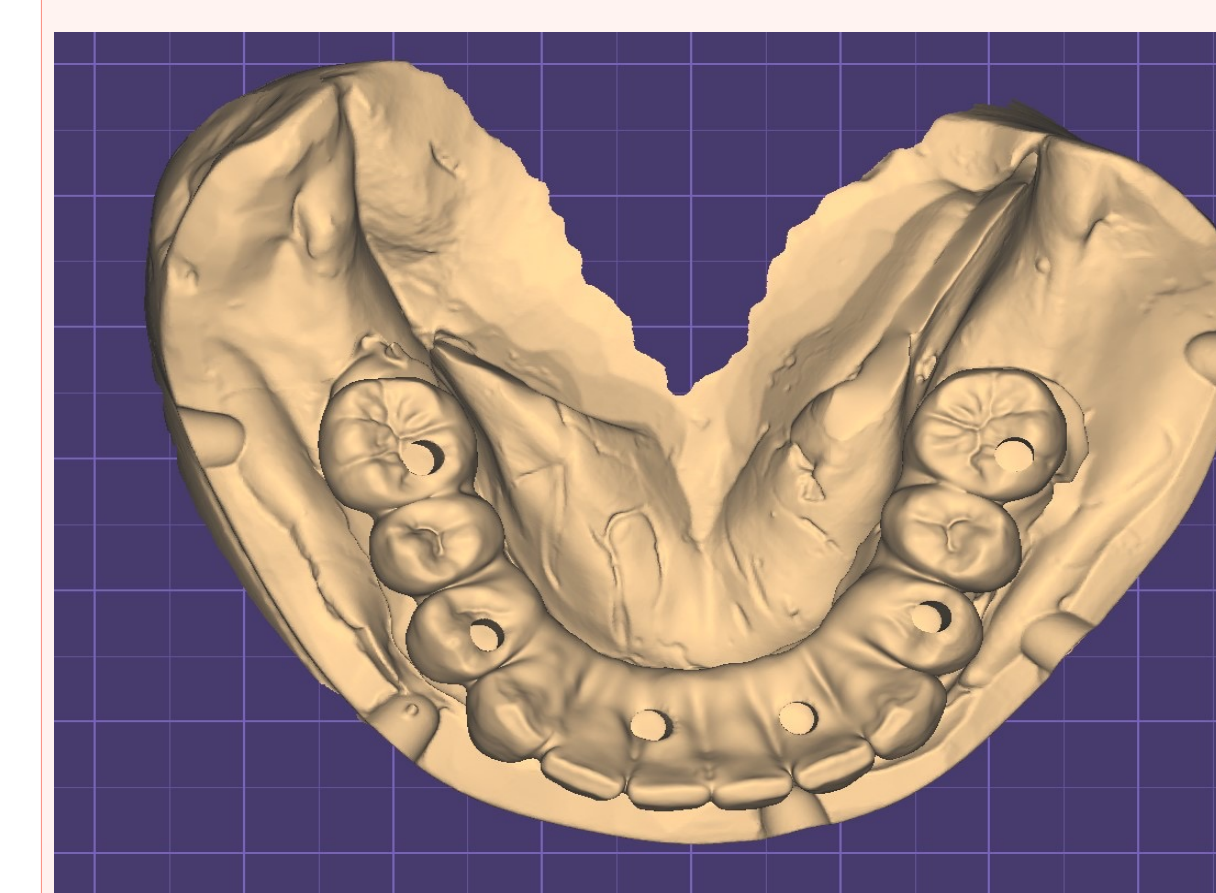


Fig 3

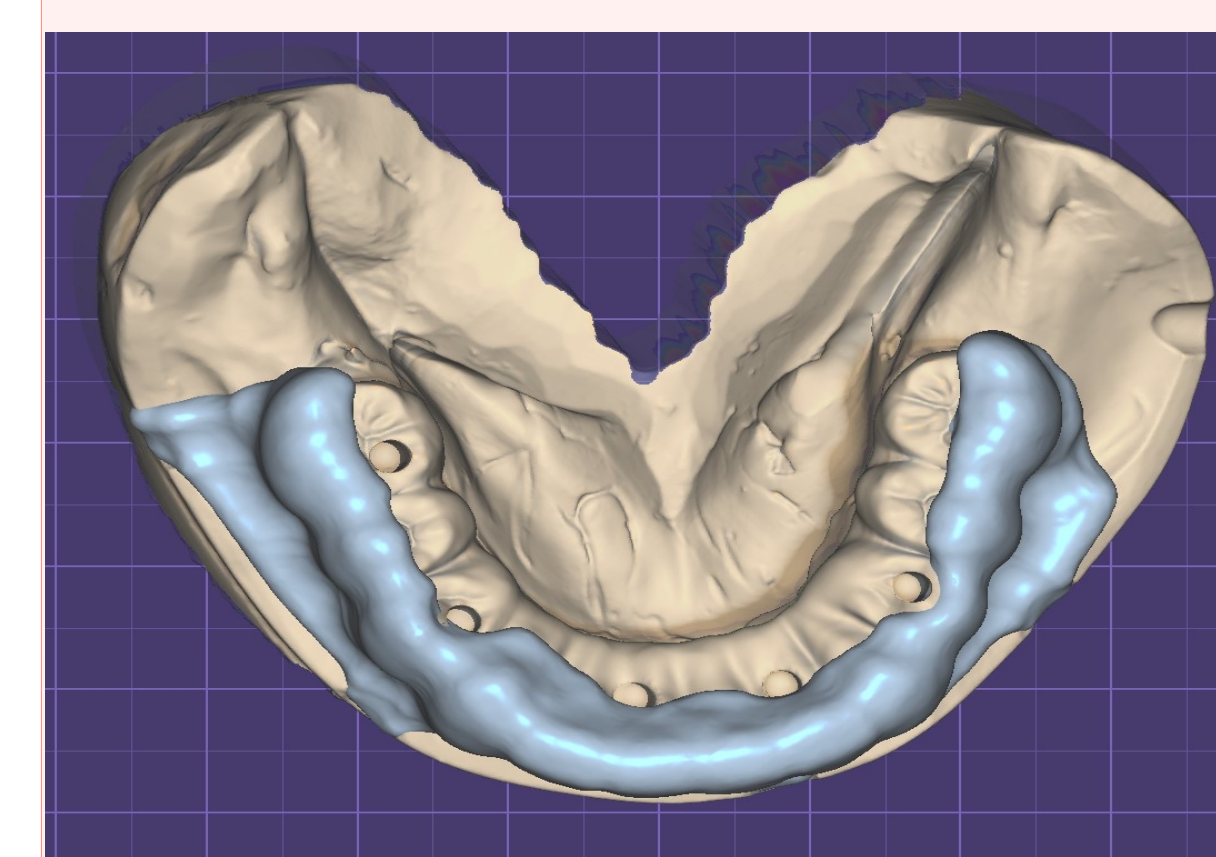
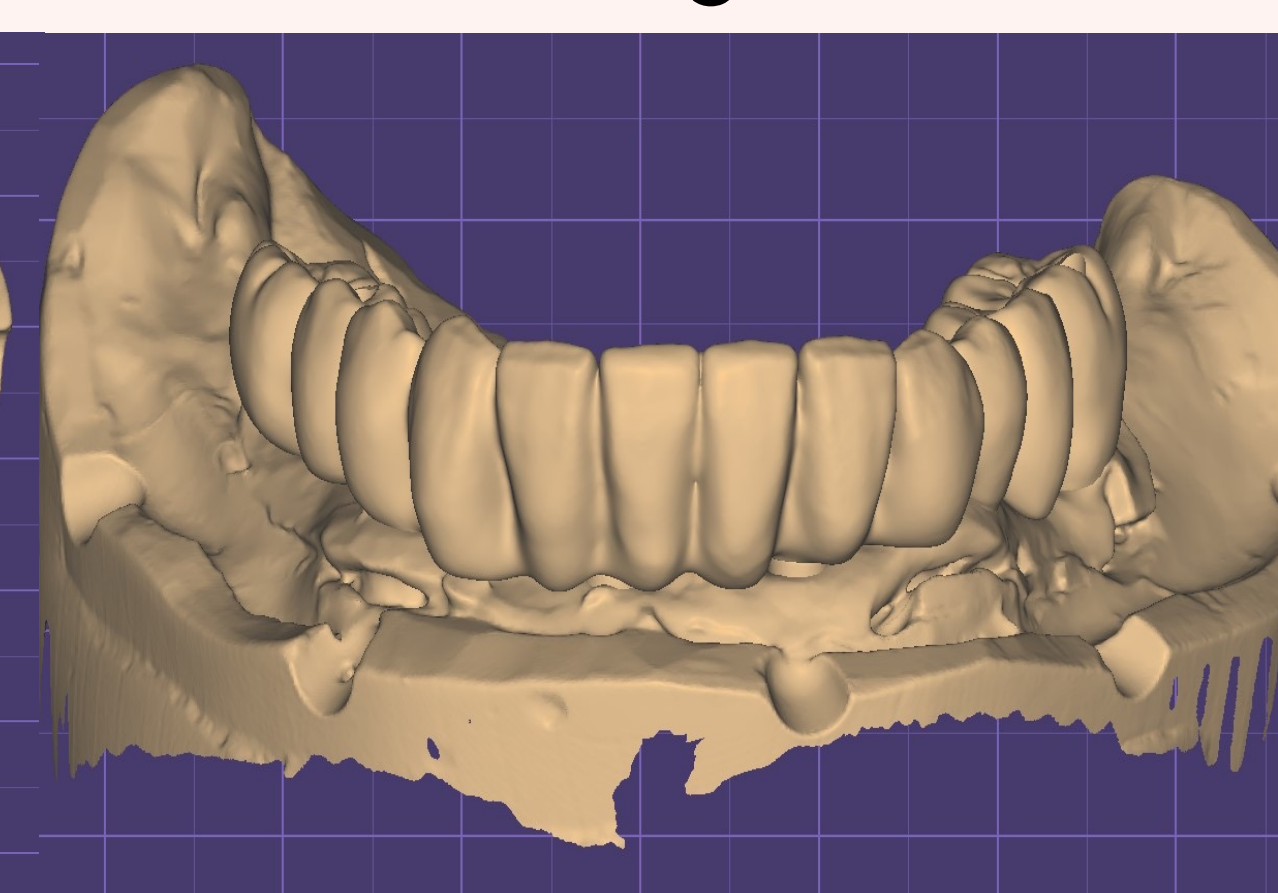


Fig 4



Fig 5



Fig 6

Procedure

The full arch Implant provisional and transfer jig are placed onto the verified implant master cast to confirm an accurate fit (Fig 7), this precise fit prevents any changes in position of the provisional on the master cast, then all the necessary temporary cylinders can be placed and connected with PMMA in one step without any alteration in vertical dimension of occlusion (Fig 8) thereby predictably maintaining occlusal relationship. The implant provisional is finished and polished (Fig 9) and delivered intraorally with minimal to no occlusal adjustments (Fig 10).

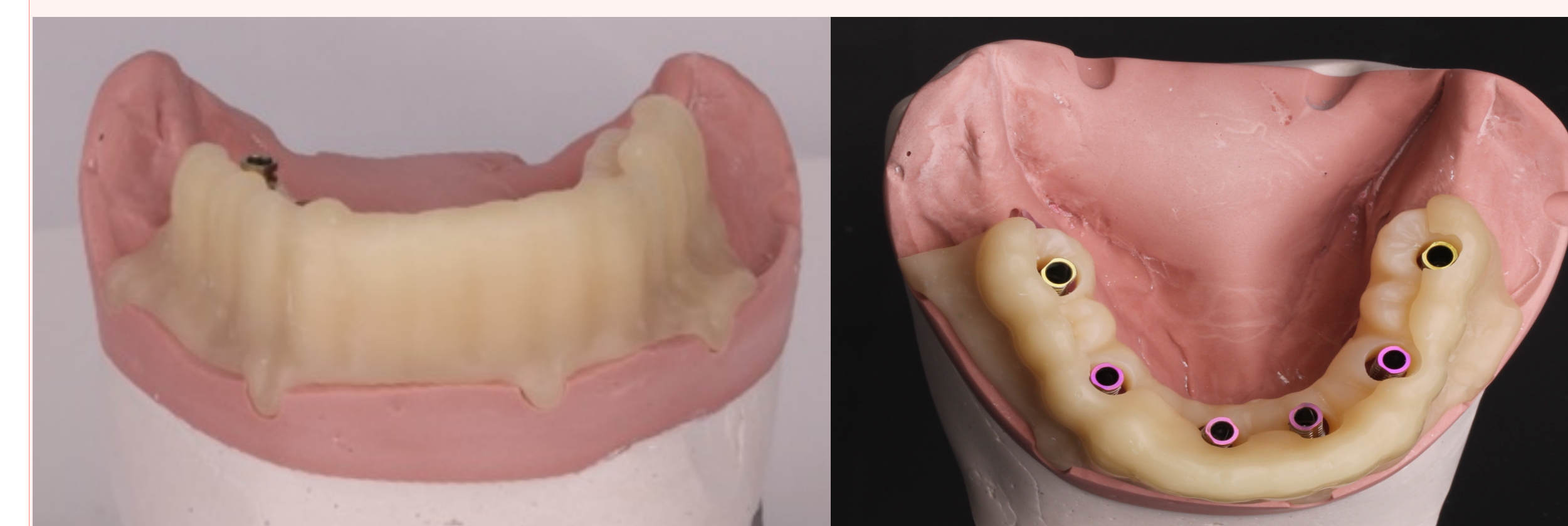


Fig 7



Fig 8



Fig 9



Fig 10

Conclusions

Utilizing this technique is beneficial for the clinician as it saves chair-side time by avoiding any major occlusal adjustments during insertion of full arch provisionals. It also improves clinical outcomes by providing stable provisional prosthesis onto verified implant master cast that can be attached to all the temporary cylinders simultaneously without altering occlusal relationship and vertical dimension.