THE COPY DENTURE TECHNIQUE: AN OVERVIEW

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INTRODUCTION

The literature is replete with the advantages of copying an existing denture. However, a critical search of the words 'copy denture','duplicate denture and 'replica denture' in the med-line search engine as well as in the relevant prosthodontic literature has failed to substantiate the claimed advantages. No long term randomised clinical trials have been reported in the literature to support these assumptions. It seems likely that most of these suggested advantages have been based solely on authors own clinical observations rather than on scientifically based well-researched parameters.

The seeds of the copy denture philosophy were sowed in 1960's with the intent to provide edentulous patients with a spare set of dentures.[1,2,3] Chick[4] and Liddelow[5] suggested that as patients get older they have more difficulty becoming accustomed to new dentures and therefore copying existing dentures while fabricating a new set would alleviate this problem. Others advocated the technique as less time consuming and more cost effective way of complete denture fabrication.[6] Various techniques have been put forward since then to accomplish a common goal of producing a replica denture.[1,4,5,7-16] Amongst these, important contributions are from Wagner[8]; Stafford and Huggett[9]; Duthie *et al*[10] who founded the 'replica block technique'; Yemm[13] and Clark *et al.*[16]

Wagner[8] suspended the old dentures in a bowl and made mould using hydrocolloid impression material. Either hydrocolloid could be used to make moulds. Into this mould, chemical curing acrylic resin was poured to make a replica of the old denture, but it was only used to make final impressions.

Stafford and Huggett[9] copied the old dentures using silicone instead of hydrocolloid and used the replica obtained to make final impressions. They recorded the jaw relationship of the old dentures, which were used while articulating the models.

Duthie *et al*[10] made silicone moulds of the original dentures. They used shellac base plate and wax to form the replica, which was then used to make final impressions. The existing jaw relationship was assumed correct.

Yemm[13] recommended using a silicone mould of the old dentures, onto which shellac base plate is adapted and wax flowed in to produce replicas which can be used to make final impression and jaw relationship record. This was an important improvement in that, the jaw relation was recorded after the final impressions and provision for face bow transfer acknowledged. He stressed the distinction between his 'replica block technique' and conventional 'denture copying technique'.

Interestingly most of these workers did not realise the theoretical errors inherent in the technical

aspect of replicating the old dentures, and no attempt had been made to relate the impressions and the jaw relationship record.

Clark *et al*[16] discussed these aspects in detail and emphasised that jaw relationship records should be made after the final impressions. A face bow record is also required as it might be necessary to adjust the vertical occlusal dimension on the articulator at a later stage. They also stressed the importance of a remounting procedure for correction of the processing errors as well as a check record for finalization of occlusal harmony.

THE COPY DENTURE MYTH

The folklore of the copy denture technique has evolved over the past forty years. Recently, Clark *et al*[16] reviewed the literature. They raised a number of criticisms of the technical aspects of the procedure.

The term 'replacement denture' as maintained by Clark *et al*[16] provides scientific understanding of the subject, as closer observation reveals that a copy denture is not a true replica of the old denture in the real sense, but tries to replace the existing denture with a new denture which follows some features of the original, while some modifications are introduced to eliminate the features which prompted the patient to seek the treatment in the first place. In this regard, major change in the terminology as well as in the thinking of clinicians is emphasised.

They argue that if the old denture has deteriorated to the extent that it requires major modifications in the base extension and spatial positions of the teeth it can no longer be considered to be a copy of the original and can not be considered to make adaptation any better than the conventionally and correctly constructed dentures. On the other hand if the denture has not deteriorated badly it can be copied with little modification and the patient might find it easy to adapt to them but probably he would adapt well to conventionally and correctly made dentures as well. They concluded that the replica denture technique does not offer any advantages over the conventional technique and that it should be looked upon as no more than an alternative way of making the dentures. This is in agreement with Davis[17] who concluded that the technique should not be regarded as an easy, quick and fool proof method of denture construction and that conventional denture technique may offer optimal base extension resulting in maximum retention and stability.

Davis and Watson[18] in their retrospective study involving 100 patients, one half treated with copy dentures and the other half with conventional denture techniques found that the number of review visits, indicating the minor denture faults and adaptation difficulties, were similar in both groups of patients even though less visits were needed for denture insertion in the group receiving copy dentures.

However Clark *et al*[16] suggested that in spite of its faults, a replica denture technique may be a convenient way of introducing dental students to complete denture construction, in the context of curricula now employed in western dental schools, where time to teach the subject is being reduced, in proportion with the reduction in numbers of patient requiring complete denture.

CONCLUSION

No evidence exists in the literature to support the notion that copy denture technique offers any added advantage over conventional denture fabrication technique. It appears that it should be regarded as an alternative way of denture construction and could be a useful adjunct to complete denture teaching at undergraduate level.

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