A technique for the construction of complete dentures in two visits
II. A pilot study to evaluate the opinions of practitioners and patients

R. J. C. Wilding* / Y. I. Osman**

The technique for fabrication of complete dentures in two visits was described in part I. The purpose of the present study was to evaluate both the clinical methods used and patients' acceptance of the resulting dentures. Eleven general practitioners were taught to use the technique and then asked to complete a questionnaire. Most practitioners had some difficulty with some aspects of the technique. The consensus was that the two-visit denture technique would have some application in providing low-cost dentures, provided that the esthetic demands of the patient could be satisfied within the limitations of the technique. The second part of the evaluation was provided by patients, who were asked to indicate a preference between two sets of dentures, one made using a four-visit technique and the other using the two-visit technique. Preferences were divided, but all patients were able to wear both sets of dentures. The final responsibility for providing an adequate denture service remains with the practitioner. (Quintessence Int 1990;21:559–562.)

Introduction

A technique for the construction of dentures in two visits was described in part I of this paper. Part II presents the results of a pilot study to evaluate the opinions of practitioners and patients. The authors were concerned that the technique might be difficult to manage and therefore likely to increase the risk of clinical error during denture construction. It was also important to determine whether the technique would save chairside time and therefore cost. The answers to these questions were sought from practitioners.

The second part of the study was directed toward obtaining the opinion of patients about the technique. Several studies have shown that patients cannot detect differences between dentures made by various clinical techniques, such as the use of different posterior tooth forms or variations in impression techniques. However, the importance of patient opinion regarding esthetic choices has been emphasized. During the trials with this technique, only two anterior tooth rows were available to choose from. They were both the same shade (the lightest available), but differed in tooth size and arch form. It was felt that patient opinion should be sought regarding the esthetic limitations of the technique.

The purposes of this study were, first, to provide general practitioners with the opportunity to learn the technique and to record their opinions of it and, second, to invite opinions from patients, for whom two sets of dentures had been made, one using a conventional four-visit technique and the other using the two-visit technique.

Method

Dentists' evaluation

Eleven practitioners attended a participation course to learn the two-visit technique. The essential features of the technique were demonstrated, and then each participant was asked to apply the technique to a patient. The patients had all been selected prior to the
Table 1  Response of practitioners to evaluation questions (n = 11)

<table>
<thead>
<tr>
<th>Question</th>
<th>Frequency of response</th>
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<tbody>
<tr>
<td></td>
<td>Not</td>
</tr>
<tr>
<td>How difficult did you find the technique?</td>
<td>5</td>
</tr>
<tr>
<td>Do you think it would be time saving?</td>
<td>3</td>
</tr>
<tr>
<td>Would you find it useful in your practice?</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 2  Response of practitioners to ranking the most difficult procedure (n = 11)

<table>
<thead>
<tr>
<th>Most difficult procedure</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing a vertical height</td>
<td>1</td>
</tr>
<tr>
<td>Making the primary registration</td>
<td>2</td>
</tr>
<tr>
<td>Making the secondary registration</td>
<td>2</td>
</tr>
<tr>
<td>Positioning the anterior segment</td>
<td>6</td>
</tr>
</tbody>
</table>

course to allow impressions to be made. Two sets of casts and one set of occlusal rims had been prepared for each patient. Each practitioner made two maxillomandibular registrations. The first was made using the occlusal rims and his or her own preferred technique (four-visit). The patient and practitioner then participated in the choice of a suitable tooth form and color from a selection of commercially available denture teeth. The second registration was made using the method described for the two-visit technique. The patient participated in the choice of either a small or large anterior tooth row. The position of the anterior tooth row was recorded for each patient.

Each practitioner completed a questionnaire at the end of the day. Before the work was sent to the laboratory, the interalveolar distance of both registrations was recorded by the authors. Two dentures were subsequently made for each patient. The trial dentures of the four-visit dentures were evaluated at a subsequent visit and the final visits for both dentures were managed by the authors.

Results

Dentists’ evaluation

The questions asked of the participants and the combined scores are shown in Table 1. Five practitioners did not find the technique difficult at all; the remaining six found it either slightly or moderately difficult. Three practitioners thought it would not save time, and eight thought it would either slightly or moderately save time. Nine practitioners thought that they might find the technique useful in their practices, one thought it might be very useful, and another practitioner thought it would not be useful at all. These results could not be statistically analyzed because of the small sample number.

The practitioners were also asked to choose the most difficult from a short list of procedures. The frequency of scores for each question are shown in Table 2. The stage most commonly selected as being most difficult was positioning of the anterior arch segment. Two practitioners made the additional comment that, with use and familiarity, the technique would be less difficult than at first attempt. Several practitioners were of the opinion that patients would have to be understanding about the arrangement of the teeth.

The interalveolar distance (IAD) chosen by the practitioners when they used occlusal rims for the maxillomandibular registration (four-visit) was compared with the IAD chosen using the two-visit method. In four out of the eleven patients, the IAD was the same. Of the remainder, four of the four-visit registrations had higher IADs and three had lower IADs than did the two-visit registrations. For two patients, the registrations had to be made again at the trial visit. For one of these patients, a new registration was made for both dentures, and for the other, a new registration was made just for the denture being made with the four-visit technique. The final visits for the eleven pa-
tients were uneventful. Dentures were remounted only if occlusal errors were too great to be readily corrected using intraoral detection and selective chairside grinding. Three four-visit dentures were remounted, and three two-visit dentures had to be remounted. Of the remounted dentures, there were two instances in which the four-visit and the two-visit dentures were for the same patient.

**Patients’ evaluation**

Of the eleven patients who were provided with two sets of dentures, all subsequently revealed that they were able to wear both sets of dentures without difficulty. When asked for their preference, seven patients preferred one denture in particular. The reasons given were improved comfort and better appearance (Table 3). Four patients found one denture more comfortable than the other. Of these, two patients preferred the four-visit denture. One because he could chew better and the other because she felt more comfortable; the IAD of both dentures was greater than that of the matching two-visit denture. Two patients found the two-visit denture more comfortable; in both cases, the IAD was at least 2 mm less than that of the matching four-visit denture.

Three patients gave appearance as the main reason for their preference. One preferred the four-visit denture because the teeth looked more like those of the previous denture. Two preferred the two-visit denture because the teeth were smaller and more even than those of the four-visit denture.

**Discussion**

The subjective opinions of clinicians in evaluating dentures has been found to be inconsistent in some studies, although a system of denture evaluation that does provide consistent results has been described. Because these studies were not reporting on the evaluation of techniques by clinicians, they may be of limited relevance to this study, but they do give some indication of the inherent subjectivity in the formation of a clinical opinion.

The evaluation by the practitioners provided useful commentary on the ease with which the technique could be learned. Some found the technique difficult but acknowledged that it would get easier with experience. The simultaneous registration of the occlusal plane, center line, and anteroposterior localization of the maxillary arch was thought to be the most difficult procedure. Even with experience, this step in the technique would probably always require the clinician’s full concentration and skill.

The practitioners were divided in their opinions about the clinical time that might be saved. Most thought there might be some saving in time, but this was difficult to assess until they had acquired familiarity with the technique. A similar qualified opinion was expressed regarding the possible use of the two-visit technique in practice. Here, practitioners were able to identify differences between their practices. Some practitioners, whose patients had low incomes and limited dental insurance coverage, thought there would be a place for the technique in their practices. Those practitioners with affluent and more demanding patients would make less use of it.

There are several studies in which patients have been given two sets of dentures with different posterior occlusal forms to wear and asked to choose which they preferred. All those studies found that patient preferences were equally divided for different forms of teeth. Patients tended to choose posterior tooth forms that “looked best.” In a study by Bernier et al, each patient was given two sets of dentures, one made with conventional impression technique using full-border molding of the periphery. The other denture was made using an alternative impression technique that produced thinner and shorter peripheries. The authors did not mention whether the patients could tell the difference between the two dentures, but the five examiners found no statistical difference between the retention of the “conventional” and “alternative” dentures. It is apparently difficult to achieve a reliable

<table>
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<th>Patient’s choice</th>
<th>Reason given</th>
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<tr>
<td>No preference</td>
<td></td>
</tr>
<tr>
<td>Two-visit denture preferred</td>
<td>4</td>
</tr>
<tr>
<td>Four-visit denture preferred</td>
<td>3</td>
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and objective evaluation of minor differences in denture design or clinical technique used in denture construction.

The response of patients to using both sets of dentures provided little further insight for the comparison of the two techniques. Their preferences were inconclusive, possibly because the sample size was too small to apply any statistical analysis, but also because, for most of the patients, there was no apparent difference between the two dentures they were asked to wear.

Denture esthetics appears to be a central factor in acceptance of dentures. The patient should be encouraged to participate when decisions are being made about tooth size, shade, and arrangement. Ignoring the esthetic values of patients will ensure poor acceptance.

The authors have experienced a preference among many low income patients for small, white teeth. Although this has not been documented, it is evident by a review of the orders for teeth by the laboratory of the faculty’s teaching hospital. It was on the basis of this assumption that small, white teeth were selected for the anterior tooth rows used in the two-visit denture technique. It was not surprising that the one of the patients who preferred his two-visit denture gave as a reason that the teeth of the four-visit denture were too large. The choice of tooth mold and shade may have been made by a practitioner unfamiliar with the common preference for small teeth that many of the hospital patients have.

Conclusions

The evaluation of the two-visit technique by practitioners provided some valuable insights into the limitations of the technique and its potential application. The question of technique sensitivity and potential cost reductions are still aspects that will have to be more thoroughly studied. These aspects of research will be continued during a community project in which the technique will be used to provide low-cost dentures for members of a workers’ union.

The evaluation by patients will continue until the size of the sample treated allows use of statistical tests. However, the approval of the patients for either denture is an indication that while the methods used to fabricate the two dentures were slightly different, the final products were both acceptable to the patients.

In the last analysis, it is the clinician who must approve or reject the denture at the final visit. This responsibility may be increased when clinical methods are sensitive to technique. In outlining the minimal standards for an adequate prosthodontic service, Lytle summarized, “the professional service must finally be the responsibility of the professional man.”

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References