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ORIGINAL ARTICLE

Complete Denture Impression Techniques Practiced by Private Dental Practitioners: A Survey

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Abstract Impression making is an important step in fabricating complete dentures. A survey to know the materials used and techniques practiced while recording complete denture impressions was conducted. It is disheartening to know that 33 % practitioners still use base plate custom trays to record final impressions. 8 % still use alginate for making final impressions. An acceptable technique for recording CD impressions is suggested.

Keywords Impressions · Custom-trays · Base plate · Tray-material

Introduction

Impression making is an important step in making complete dentures. A survey was carried out to know which materials are used by private practitioners to make impressions and what techniques are being followed. Feedback was evaluated.

Material and Methods

A questionnaire was prepared and sent to 400 dental practitioners. Only 340 responded. The practitioners were in the age group of 30–56 years. The dental surgeons were from pune, Mumbai, Goa, Satara, Nashik, Indore, Jodhpur, Nanded, Aurangabad, Sangli, Kolhapur. The questionnaire had five questions.

Q. 1 Which material do you use to make primary impressions of edentulous mouth?

(a) Impression compound
(b) Alginate
(c) Any other (please specify)

Q. 2 Do you make a custom tray for final impression of edentulous jaw?

(a) Yes
(b) No

If yes, what material is used to fabricate the custom tray?

(a) Base plate
(b) Tray material/cold cure
(c) Any other (please specify)

Q. 3 Do you use spacer in the custom tray?

(a) Yes
(b) No

If yes, what design of the spacer do you use?

(a) Full spacer with tissue stops
(b) Full spacer without tissue stops
(c) Any other design (please specify)

Q. 4 Which material do you use to carry out border molding?

(a) Green stick (low fusing compound)
(b) Putty (rubber base)
(c) Any other (please specify)

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Q. 5 Which material do you use for making the final impression of edentulous jaw?

(a) Zn OE paste
(b) Light body (rubber base)
(c) Any other (please specify)

Results

It was observed that 78 % use impression compound to make primary impressions. 21 % use Alginate. Three practitioners reported that they use only elastomer putty and wash in a stock tray/plastic tray to make CD impressions. For Fabricating custom trays 67 % use tray material or cold cure while 33 % still use base plate custom trays. The design of the spacer used by 72 % is full spacer with tissue stops. About 21 % use full spacer without tissue stops. 7 % use other designs like a spacer covering incisive papilla mid palatine suture area. Those using base plate custom trays do not use spacers. The border moulding material used by 83 % is low fusing compound (Green stick). 17 % use putty elastomer. For making final impressions 73 % use ZnoE or non-eugenol pastes. 19 % use light body elastomer. But 8 % still use "alginate" to make final impressions.

Discussion

Impression making is an important step in denture construction. Primary impressions are made in a non perforated stock metal tray with impression compound [1–3]. Irreversible hydrocolloid i.e. alginate can also be used in a perforated stock metal tray [2–5].

As the stock metal trays are used impression material thickness of 4 mm is recommended. Use of alginate is preferred by some authors [4, 5].

In UK it was observed that 88 % dental graduates use alginate for making primary impressions where as 99 % gave alginate preference as primary impression material [6]. In a survey in North American Dental Schools 74 % preferred alginate to make primary Impressions where as 15 % preferred impression compound [7]. In survey in UK, 88 % practitioners use alginate to make primary impressions of complete denture cases [8]. In Northern India, a survey found that 71 % use alginate for making primary impressions and 29 % use impression compound [9].

After preparing the primary cast a custom tray is fabricated. It is imperative that the tray is rigid and dimensionally stable. Tray prepared from thermoplastic material can lead to inaccurate impressions. Cold cure acrylic resin can be used to prepare custom trays [1, 5]. Addition of French chalk to cold cure powder 30–40 % by volume reduces cost, gives more working time and satisfactory tray material [4].

In UK, a survey conducted found that 75 % general dentists use custom trays of cold cure or tray material [8].

In practitioners from North India, it was observed that only 85 % use double impression technique i.e. they use custom trays. Remaining make dentures on single impressions [9].

In similar surveys in US of prosthodontists and dental schools, almost all use custom trays made of cold cure [7, 10].

In UK, a survey carried out to check the quality of master impressions and related materials for fabrication of complete dentures data was collected from laboratories. It was noted that 83 % use custom trays and 17 % use plastic trays to make final impressions [11].

Border molding is carried out with low fusing compound i.e. green stick [1, 5]. Or putty/heavy body elastomer [5, 7].

In a North American Dental Schools survey it was noted that 81 % prefer low fusing compound while 7 % preferred polyether for border molding [7].

In a survey of US prosthodontists and dental Schools it was observed that 67 % prosthodontists and 95 % schools use low fusing compound for border molding [10].

In a predoctoral clinical curriculum survey it was noted that 64 % use low fusing compound for border molding [12].

Secondary or final impression is recorded with a wash material like ZOE paste or non eugenol impression paste. Light body elastomer can also be used [1–3]. Alginate should not be used as it is a bulk impression material. The recommended thickness is about 3 mm. In a wash, with thickness of about 1 mm dimensional changes may be high and ability to record details is questionable.

In UK in a survey of dental graduates it was noted that ZOE paste was preferred by 29 % where 13 % preferred elastomers. It was noted that 94 % preferred alginate for secondary impressions [6].

In North American dental schools, polysulfide was used by 48 % and polyether by 4 % to record final impressions [7]. In a survey of practitioners in UK the findings were almost same [8]. In another study of US prosthodontists and dental schools it was noted that 36 % prosthodontists and 64 % schools used elastomers for making final impressions [10].

In UK survey of laboratories reported that 42 % use ZOE paste, 39 % use elastomer and 19 % use alginate to record final impression. [11].

Some clinicians have suggested use of polyvinylsiloxane materials in plastic trays to make edentulous impressions. Customs trays are not required in this technique [13].

Summary and Conclusion

A satisfactory impression technique can be suggested. A primary impression in alginate or impression compound can be made. A final impression in a tray material or cold cure custom tray with border molding in low fusing compound and final impression in ZnoE paste, non eugenol paste or light body elastomer can be recorded. This should give fairly accurate impression to prepare well fitting complete dentures. Use of elastomer to carry out border molding requires less time and is convenient. But properties of softened green stick and putty elastomer to achieve peripheral seal needs investigation. Use of alginate in a custom tray can not be justified Using putty and wash in a stock or plastic tray without making a secondary impression also needs further studies.

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