

IMPRESSION TECHNIQUES USED BY DENTAL SURGEONS IN DIFFERENT INSTITUTES — A STUDY

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ABSTRACT

The objective of this study was to survey the impression technique used by the dental professionals of different institutes. Impression making is an important step in fabricating complete dentures. An impression is an imprint produced by existence of pressure of one thing into another surface. And this indicate an active role not a passive one and the clinician should understand that impressions are made, not taken. Mucostatic or passive impression was first proposed by Richardson and later popularized by Henry Page. A survey was conducted in dental colleges to get to know about the impression techniques and impression material used by the dental surgeons. It is discouraging to know that 35% of dental surgeons are using base plate custom trays to record secondary impressions. 10% are still using the alginate for secondary impressions. A supportable technique for recording full denture impressions is put forwarded for impression.

Key Words: Impressions, Custom-trays, Base plate, custom tray material.

INTRODUCTION

Impression in dentistry usually is negative replica of oral cavity or copy in reverse of an object or oral cavity so it produces an imprint of teeth an adjacent structure in oral cavity.¹ If the impression is not accurate than it will not produce good diagnostic cast but if impression of oral cavity have recorded all land marks than it will result a precise diagnostic cast.¹ This implies an active role and not a passive role and the clinician should consider that impressions are made, not taken.² It was reported in several researches that silicon based impression material for instance putty elastomers are most accurate and dimension stable impressions

material is dentistry.³ Also there is another impression material which is muco-compressive, thermoplastics and frequently used in dentistry to record primary impression and also secondary impression for detail record of oral cavity borders.¹ An impression material name alginate is actually famous impression material of partially edentate patients but on some occasions it can be used in complete denture as well.⁴ According to the Oxford English Dictionary, an impression is an imprint produced by 'the pressure of one thing upon or into the surface of another'. This implies an active role and not a passive role and the clinician should consider that impressions are made, not taken.²

METHODOLOGY

This study was carried out at the Department of Prosthodontics, Dow Dental Hospital, Karachi. A questionnaire was prepared and distributed to 200 dental surgeons in Dow Dental Hospital and other Institutes in Karachi. The age group of dental surgeons was ranged from 30-35 years. The study was survey based Cross sectional design. All dental surgeons working in department were in my inclusion criteria except recently joined house officers.

RESULTS

The results were observed 80% used impression compound to take primary impressions. 25% used alginate. 10% reported that they have used elastomer

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putty and wash in a stock tray or in plastic trays to made complete denture impressions. For constructing custom trays 70% used tray material or self cured acrylic while 36% have used base plate custom trays. The spacer was used by 75% with tissue stops. And 23% used spacer without tissue stops. 10% used different design of spacer covering incisive papilla, midpalatine suture area. The dental surgeons who were using base plate custom trays did not use spacers. The peripheral tracing material used by 85% is low fusing green stick compound. 20% used putty elastomer. For taking secondary impressions 75% used ZnO₂E or non-eugenol pastes. 19% used light body elastomer. But 10% of the dental surgeons were still using alginate to made secondary impressions.

TABLE 1:

Types of Impression Material used	
Impression material	Percentage
Impression Compound	80%
Alginate	25%
Elastomers putty	10 %

TABLE 2:

Types of Trays	
Trays	Percentage
Self-Cure	70%
Shellac Base Plate	36%

TABLE 3:

Types of Spacer	
Spacers	Percentage
Tissue stop	75%
Non Tissue stop	23%
Other deign	10%

DISCUSSION

As recent studies indicate that incorrect impressions account. There are ready made impression trays available in market to record impression of patient known as stock metal trays and usually thickness of the tray is around 4 milli meter.⁴ Some of the authors preferred to make primary impression with alginate.⁵ It was observed that in UK 88% dental graduates used alginate for making primary impressions where as 99% used preferably alginate as primary impression material.⁶ In UK, in a survey 88% practitioners use alginate to make initial impressions of complete denture.⁷ After preparing the primary cast a cold cured custom tray is made. In the case of customized trays for complete dentures, we recommend that the technician does not

perforate the trays, as this inhibits the determination of a peripheral seal (vide infra).⁸ It was noted that 85% used custom trays and 19% use plastic trays to make final impressions.⁹ Peripheral tracing is done with tracing compound i.e., green stick Or putty/heavy body elastomer.

In a North American Dental Schools survey it was noted that 83% preferred low fusing compound while 8% preferred polyether peripheral tracing. In a survey of US prosthodontists and dental schools it was observed that 68% prosthodontists and 96% dental schools use low fusing compound for border molding. In a survey of predoctoral clinical curriculum it was noted that 64% used low fusing compound for peripheral tracing.¹⁰

Impression compound was more frequently used in my study which is quite similar to the study in the Netherlands and all over the world, even though it was preferred less than alginate in some other countries but it might be due to its cost ineffectiveness whereas alginate is cheapest impression material and also preferable for those patients who have deep bonny undercuts. As we know that each impression material has different way of recording the impressions but when we come to results than it has been revealed that impression compound is best impression material among these three because it records fine details specially during border mouldin and due to its mucopcompressive nature it is preffered over alginate in my study as success of impression depends upon accuracy of material.¹¹

Secondary or final impression is recorded with a wash material ZOE paste or non eugenol impression paste. Light body elastomer can also be used. 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 a survey of dental graduates carried out it was noted that ZOE paste was preferred by 30% where as 13% preferred elastomers. It was noted that 95% preferred alginate for final impressions.

In North American dental schools, polysulfide was used by 49% and polyether by 5% to record final impressions. In a survey of dental practioners in UK the findings were nearly same. One another study of US prosthodontists and dental schools it was noted that 37% prosthodontists and 65% schools used elastomers for making final impressions.

In UK survey of laboratories reported that 42% use ZOE paste, 39% use elastomer and 19% use alginate to record final impression. Some clinicians have suggested use of polyvinylsiloxane materials in plastic trays to make edentulous impressions. Customs trays are not required in this technique.¹²

CONCLUSION

It was concluded in this study that the most common impression material was impression compound and cold cure polymer was used as impression tray. Impression tray made of self cure material should be used because the use of self cure material is less time consuming and less technique sensitive. Eventually this all will be beneficial to the patient.

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