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A Survey about Functional Impression Materials in Complete Dentures Fabrication

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Abstract: ***Functional impression technique is an important stage in complete denture treatment. Its proper performance ensures the exact representation of gingivobuccal sulcus and the stability and retention of the final prosthesis during the function. Purpose: This study aims to investigate the impression materials about functional impression technique in complete dentures fabrication. Material and methods: An anonymous questionnaire was constructed and administered on paper, and it was mailed to 98 dentists from different regions of the country. Respondents were 53 men and 35 women. Results: Majority of the dentists make less than 10 dentures per year. In the highest percentage of cases, they fabricate set of upper and lower dentures. The majority of the respondents don't give the answer about preferable impression materials and about average width of the gingivobuccal sulcus. The most of the dentists pour gypsum models to 2 hours after the impression procedure. Conclusion: Clinicians don't pay attention to functional impression material, which is related to a small amount of fabricated dentures.***

Keywords: complete dentures, functional impression materials, gingivobuccal sulcus.

1. Introduction

The treatment with complete dentures is a wide-spread problem of our society. Patients expect from complete dentures to be stable during the process of chewing, to be comfortable during speaking and smiling, to be aesthetic and nature-looking [1, 2]. This is related to the anatomy of the prosthetic field, soft tissues condition and dentist's technique [3, 4]. Stability also depends on correct arrangement of artificial teeth and strict compliance of rules, linked with compensatory curvatures [5, 6]. There are different classifications of dental materials, which can be used for border molding of an individual impression tray. These materials are with various properties and can be rigid, thermoplastic or elastic [7, 8, 9]. Most of the dentists pay attention mostly to the height of an individual impression, not to its width [10]. Dimensional stability of materials depends on storage time and moisture contamination [11, 12]. Also can be changed from different types of disinfection [13, 14, 15]. Polymerization shrinkage is bigger to the 10th minute, after that it decreases. C-type of silicones remains stable to 24 hours, A-type of silicones and polyethers can stay constant to 7 days [16, 17, 18].

The survey's aim is to know the opinion of dentists about the importance of border molding procedure and preferable materials in complete dentures fabrication.

2. Material and Methods

An anonymous questionnaire contained 11 questions, was constructed and administered on paper and it was mailed to 98 dentists from different regions of the country. Respondents were 53 men and 35 women. Descriptive statistics and graphical analysis were used to process and visualize the results.

3. Results and Discussion

The question "How many complete dentures do you fabricate in your dental practice per year?" requires an active written answer from respondents. Half of the dentists made less than 10 full dentures per year, 22,21%- up to 31. The answers were divide into four groups and visualized on diagram 1.

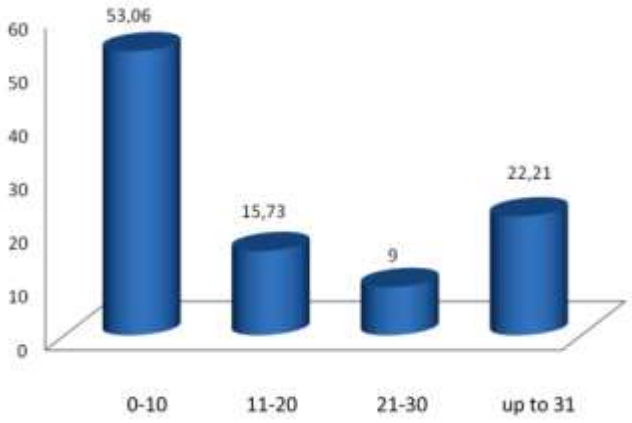

Diagram 1: Number of complete dentures fabricated per year

Answers to the question "The most of the prosthesis are: set, only upper or only lower?" are present in diagram 2. The highest percentage 81,4% made sets of complete dentures.

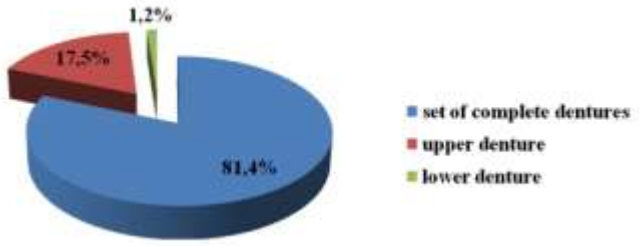

Diagram 2: Division of fabricated dentures

The question "Which impression material do you prefer to use?" again requires an active written answer. Without answer were 38,2%. The most common material for border molding is **wax** (30,1%), 4,8% of them use **Dentaplast**, 2,3% - **Bredent wax sticks**. Silicone is preferable material

for 20,1% of the dentists, 4,4% use C-type of silicon, 2,8% - A-type. 6,3% of the dentists work with GC Functional sticks,5,3% -with impression compound. Dentists don't mention gutta-percha, soft relining materials and photo composite impression materials. The answers are illustrated in diagram 3.

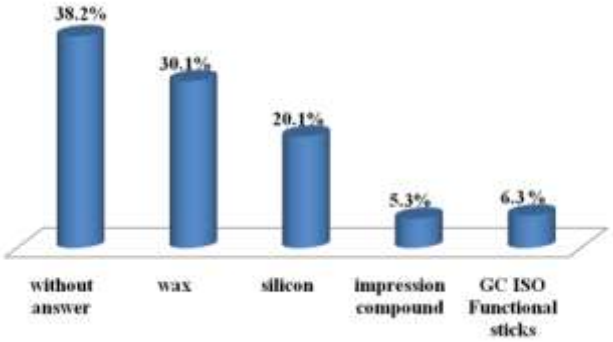

Diagram 3: Border molding impression material

Question "According to you, what is the variation of a gingivobuccal sulcus's width in the edentulous upper jaw?" was active again. The answers were separated into three groups: narrow (1-3 mm), middle (3-5 mm) and wide(up to 5 mm). Without answer were 48,32%. The most of the dentists (38,2%) think that the size of this sulcus is between 1 and 3 mm, 11,24% - that is between 3 and 5 mm. Only 2,24% think that the sulcus is wider than 5 mm, diagram 4.

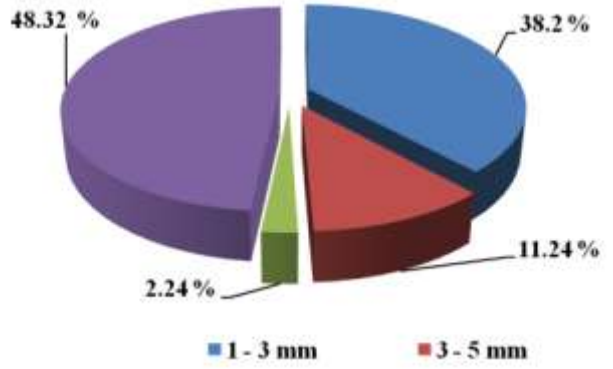

Diagram 4: Division of gingivobuccal sulcus's dimension on the upper jaw

The answers to the question "According to you, when should you pour the model after an impression taking?" were divided into four groups:

- To 2 hours after the impression taking
- Between 2 and 10 hours after the impression taking
- Up to 10 hours after the impression taking
- It depends on a type of an impression material (diagr. 5)

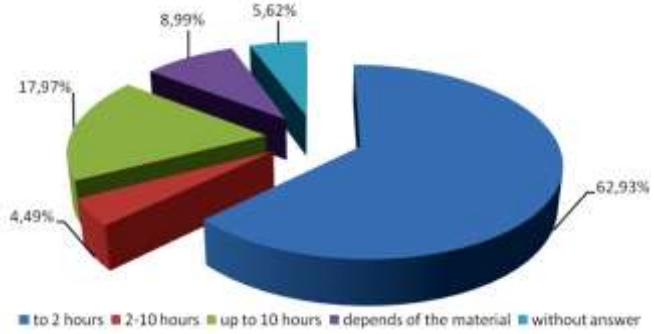

Diagram 5. Time for pouring the model

Without answer is 5,62%. The majority of dentists think that the functional model should be poured to 2 hours after the impression procedure, 17,97% - this period can be more than 10 hours. Only 8,99% thinks that it depends on the material.

4. Conclusion

Dentists use border molding procedure in their practice. The most common material is **wax**, maybe because is accessible, widespread, cheap and with unlimited working time. It's not mentioned new materials – soft relining resins, photocomposite impression materials. The dentists have not informed also about storage time, and they **don't pay attention to the width** of the gingivobuccal sulcus.

5. Acknowledgement

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