



PLASTIC AND METAL FREE DISPOSABLE DENTAL IMPRESSION TRAYS MADE WITH PAPER

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ABSTRACT

Impression making is an important factor in getting accurate casts of the oral cavity. Impression tray selection should be considered before making any impression procedure. Cross contamination of the infections can be avoided by using disposable impression trays. Plastic impression trays can also injure the oral mucosa. Instead of plastic and metal trays paper trays can be a modification in the field of prosthodontics for making impressions patient friendly and eco friendly.

KEYWORDS: impression trays, cross contamination, paper trays, custom tray.

DEFINITION

An impression tray according to GPT is defined as “A device used to carry, confine and control the impression materials while taking an impression.^[1]”

INTRODUCTION

“A first impression is the best impression” and a well fitted tray is the first step to a good impression. Good impression is the key to success of any restorations. Quality diagnostic casts are mandatory to have the negative replica of the arches which are critical with the use of prefabricated metal and plastic stock trays.

Dentistry is a field of human sciences, involving exposure to saliva and blood. A high standard of infection control and safety practice in controlling cross-contamination is necessary. Therefore disinfection of impression trays is a crucial part in infection control. Studies have shown higher level of microbial flora on impression trays, specially those which are porous and are being cleaned manually (though porous trays are preferred for retentive reasons) and also support that plastic impression trays if not disposable are a source of contamination even if gets disinfected and thus disposable plastic impression trays (with associated dimensional stability issue) and preferably autoclavable metallic impression trays are rated superior.^[2] Saliva is normally contaminated with blood from gingival inflammatory tissue and therefore it is possible that HIV, HBV, mycobacterium tuberculosis and few other infections could spread from one individual to another

through saliva.^[3,4] This article forecasts about the advantages, uses and fabrication of disposable paper impression trays.

AIM

The aim of this study is to modify the commercially available dentulous stock tray according to the anatomical landmark of the oral cavity and to avoid cross contamination within patients by fabricating disposable paper impression trays.

OBJECTIVES

- It should be dimensionally stable.
- Appropriate space should be provided for the impression material.
- It should have smooth edges to avoid injury to the oral structure.
- Tissues in the vestibular areas should not be distorted.
- It should support set impression materials when removed from oral cavity so that the cast can be poured.

MATERIAL AND METHODS

- Paper
- Water
- Flour
- Food coloring agents
- Mould

The mixture of paper, water, flour and food coloring agents is made into a flowable consistency. Then the mixture is poured into the mould and let it dry for 48 hours.

Uses

1. The disposable tray can be used for patients with transmissible diseases.
2. It is bio-degradable.
3. Reduces cross contamination.
4. No need for auto-claving.
5. It is biocompatible with oral cavity.
6. The does not injure the soft tissue.
7. Cost effective.

DISCUSSION

History of impression trays

In 1820 a French dentist C. F. Delabarre introduced the first impression tray. He used softened wax placed in a small track or semielliptical cast of white metal or silver, on the front side of which a haft or handle is mounted.

In early 20th century, stock impression were fabricated using various materials in various sizes. Block or alloyed tin, pressed aluminium, German silver and porcelain were the most commonly used impression trays.

An impression tray consists of a body which has flanges and floor. A handle is placed to stabilize the tray inside the oral cavity. There is an upper and lower tray separately for the upper and lower arches. The difference between them is that, in the upper tray there is a palatal portion we call vault and in lower tray there are lingual flanges with tongue space. The handle is an extension from the union of the floor and labial flange in the mid line, lower tray is in shape so that it will not interfere with the lip during impression procedures. Impression trays are classified as, STOCK trays and CUSTOUM trays.

Stock Trays

Stock trays are so called because they are commercially fabricated in stock. These trays are used in taking primary impression which is used for diagnostic purpose. Depending on the type of impression needed and the procedure indicated stock trays are further classified as:

- Edentulous
- Non- edentulous
- Perforated
- Non-perforated

Stock tray is usually made of metal or plastic. Metals such as stainless steel, aluminium are used to make metallic stock trays.

Custom Trays

The use of custom trays is recommended to reduce the quantity of material required to make the impression.

Thus any dimensional changes attributed to the material are minimized.^[5] Custom impression trays should be used in partially edentulous situation under conditions such as, when stock tray do not cover the proposed denture bearing area. When there is unusual distribution of missing teeth. And when mobile teeth are to be recorded with viscosity impression material, which is most difficult to be confined within the stock tray. Materials used for custom tray fabrication are: pikka-tray material and visible lightcure dimethacrylate resins.^[6]

Recent Advancements

Optical impressions-CAD-CAM- aquisition only and scan and mill.

CONCLUSION

Impression tray selection is the most important part of a accurate cast. Disposable impression trays can be very useful in prevention of cross contamination of infections.

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