Impression trays, stock tray and primary impression

Introduction:-

An Impression is defined as :- negative likeness of the teeth and/or edentulous areas where the teeth have been removed ,made in a plastic material which becomes relatively hard or set while in contact with these tissues. Impressions may be made of full complements of teeth , or areas where some teeth have been removed , or in mouth from which all teeth have been removed.

COMPLETE DENTURE IMPRESSION:-

is a negative registration of the entire denture bearing, stabilizing and border seal areas of either the maxilla or the mandible present in the edentulous mouth.

Impression making is the primary step in the process of complete denture fabrication . Impression are made to produce a negative replica of the patient’s mouth into which plaster or stone can be poured to form the positive replica –the cast. The cast act as a template over which complete denture is fabricated. Error in impression making can lead to treatment failure.

Objectives of impression making

1-Retention
2-Stability
3- Support
4-Aesthetic

5-Preservation of remaining structure.

Retention: is the ability of the denture to withstand displacement against its path of insertion.

Stability: is the ability of the denture to withstand horizontal forces.

Support: In order to provide good support, the denture base should cover as much denture-bearing area as possible. This ability of the denture to distribute forces over wide areas due to an increase in the denture-base areas.

Aesthetics: Impression should perfectly reproduce the width and height of the entire sulcus for the proper fabrication of the flange.

Preservation of remaining structures: Impression should record the details of the basal seat and the peripheral structures in an appropriate form to prevent injury to the oral tissues.

Primary impression is defined as an impression made for the purpose of diagnosis or for the construction of a special tray.

It is the first impression made for the patient and from which the study cast was produced. These impressions are obtained by a stock tray. When the primary impression is made, the objectives are to record all areas to be covered by the impression surface of the denture and the adjacent landmarks with an impression material that is accurate.
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The maxillary impression should include the hamular notches, fovea palatina, frenum attachments, palate, and the entire labial and buccal vestibules.

The mandibular impression should include the retromolar pad, the buccal shelf areas, the external oblique ridges, frenum attachments, sublingual space, retromylohyoid space, and the entire labial and buccal vestibules.

**MATERIALS USED FOR MAKING PRIMARY IMPRESSION:-**

1. IMPRESSION COMPOUND
2. ALGINATE (ELASTIC MATERIAL)
3. Silicone rubber base (putty type)

**Impression tray:-** is defined as a device which is used to carry, confine and control an impression material while making an impression.

**PARTS OF THE TRAY:-**

1. Body (floor & flange)
2. Handle

There is upper tray and lower tray, the difference between them is that, in the upper tray, there is a palatal portion that called (vault), and in the lower tray, there is a (lingual flange).
Classification of impression trays:

Based on whether they are prefabricated or individualized:

1. **Stock tray** (ready made) - Used for making primary impression

2. **Special tray** (special made for individual patient) - Used for making secondary or final impression

Trays used for primary impression making are called **stock trays**. They are factory prepared and are available in standard sizes. They are made of metal or plastic, can be perforated or non-perforated. Disposable stock trays are also available. As standarized trays will not adapt closely to the patients arch, an approximately tray should be selected for each patient. The stock tray must cover all the anatomical landmarks needed in complete denture and give a sufficient space (4-5 mm) for the impression material in all directions.
COMMON FAULTS IN IMPRESSION MAKING

1- Poor selection of the tray and materials
2- Insufficient material loaded in the tray
3- Excessive material loaded in the tray
4- Failure to press the tray completely to position (insufficient seating pressure or excessive seating pressure)
5- Incorrect position of the tray before finally seating it

Production of study cast:- The primary cast is produced by pouring the primary impression with plaster which is the positive reproduction of the oral tissues.

The plaster mixed with water by the saturation method in the rubber bowl and pour in the impression. When the plaster becomes hard, the cast is separated from the impression.
The special tray, which is used to make the final impression, will be constructed on the primary cast.
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