

**Short Communication****Sector footprints in occlusion: when and how?****Morchad Bouabid***From, Professor, Department of Fixed Prosthodontics. Faculty of Dentistry, Rabat, Morocco***Correspondence to:** Dr. Morchad Bouabid. A4 oued elmakhazine, ibn khaldoune harhoura, 12000 Temara. MAROC.Email: [morchad.bouabid@hotmail.com](mailto:morchad.bouabid@hotmail.com)*Received – 29 July 2019**Initial Review – 08 August 2019**Accepted – 28 August 2019***ABSTRACT**

For the sake of saving time and material, sectoral impressions are used to record the prepared tooth, the adjacent teeth and the antagonistic teeth in occlusion. The occlusion sectoral impression technique is recognized as a precise and easy fast technique for inlays, onlays, unitary crowns or small bridges. The synergy of new fast-setting impression material with adapted impression gates is the key to the success of this technique.

**Key words:** *Imprint tray, occlusion, sectoral impressions*

**F**ixed unitary or small restorations of the cusp areas are most often developed on working models derived from global impressions of the two arches. Nevertheless, the clinical results of the fitting of the finished parts prove to be inconstant and imprecise. Faced with these difficulties, several authors have proposed to make limited recordings to a semi-arcade simultaneously performing fingerprints and occlusion or sectoral imprints in occlusion. Sectoral fingerprints in occlusion allow the realization of the impression of the preparation(s) and the opposing arch in a single clinical step as well as the recording of the occlusion in maximum intercuspation using a door, a bivalve sectoral imprint tray such as: occlusion spoon, bit-trays, chek-dick [1-3]. In this article we will discuss the advantages and limitations of this technique compared to global footprints.

**INDICATIONS**

The clinical cases that can benefit from this technique are precise and limited to the presence of a stable maximum intercuspation position and an effective previous guidance [4,5].

- One or more elements, on the first molars or premolar provided that the meshing is stabilized by a mesial tooth and a distal tooth.
- The construction of glued bridges and unitary implant crowns.
- A quadrant restorative dentistry (inlays, onlays)
- In the development of provisional elements and space maintainers [6-8]

**CONTRAINDICATIONS:**

- Absence of vertical and frontal wedging by cusped teeth
- Reconstitutions distributed on the two half-arcades
- Insufficient distal space to the posterior tooth (risk of contact with the posterior bar of the imprint tray)
- Presence of significant abrasion of cuspidated teeth

**ADVANTAGES**

- Greater reliability (reducing the number of teeth to be registered and the number of clinical steps, reduce the risk of error)
- Facility and speed of execution;
- Saving time and materials (impression paste, plaster)

- Comfort for the patient (easy insertion-deinsertion, reduced nausea reflex) [8-10].

### DISADVANTAGES

- Risk of patient not finding the maximum intercuspidity (OIM) during repeated procedures.
- The lack of rigid support at the level of flexible gauze would seem to predispose the impression to distortions.

During disinsertion and casting, the use of a rigid material after setting can overcome this disadvantage [6,7,11].

### MATERIALS USED

#### Imprint Tray

They are available as metal or plastic, with or without side walls for single or multiple use. They all have a curved shape comparable to that of the arch, the vestibular wall is connected to the lingual wall by a bar circumventing the distal last molar or tuberosity. They are called bivalve

imprint tray [8, 12].

The two types which we use are:

- Bite trays: It is a cardboard tray and starched gauze in the shape of H. (Figure 1)
- The occlusion spoon: It is a perforated metal tray with concave fins towards the outside, these include a slot allowing the interposition of a sheet of parchment (Figures 2, 3).

### Impression materials

Elastomers, particularly addition silicones, and reversible hydrocolloids are the most used materials for this technique. The ideal is to use a bite material presented with a quick-setting auto-mixer system [13]. Indeed, a dispensing by pistol with self-mixing system makes it possible to reduce the risk of incorporation of blanks and air bubbles (increase in spreading, resistance to tearing and tearing) [8, 11, 15].



**Figure 1: Bite trays: cardboard impression tray, Figures 2 and 3: The occlusion spoon with concave lateral edges and the presence of lateral slits**

### OPERATING PROCEDURE

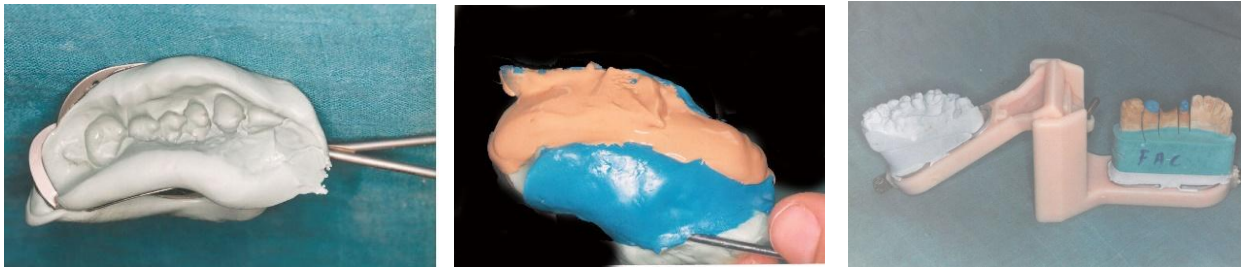
According to the process of Wash technic or Double mixture [7,12,15], After retraction of gingiva and before fitting of the tray, the operator must check for the presence of sufficient space for the establishment of the tray-imprint; control the patient's ability to recover his maximum intercuspид position without difficulty and take proper closure marks on the contralateral side.

The assistant loads the two sides of the tray with the heavy material by depositing the dough more on the side

concerned by the preparation, while the operator injects the fluid material into the syringe. During the placement of the impression tray, the patient is invited to progressively regain his position of intercuspид maximal, which he must keep until the complete polymerization of the material (Figures 4, 5, 6, 7). Immediate casting of the impression is imperative. First we cast the arcade interesting preparation. The counterpart will only be poured after hardening of the first deposit of the plaster. Before any demolding, the assembly is fixed on an occlusor, then the usual manipulations for the manufacture of fixed prostheses can be undertaken. (Figures 8, 9, 10)



Figure 4: Preparation of 35 and 37, bridge pillars, Figure 5: Imprint tray in maximum intercuspidity, Figure 6: Footprint of the prepared area; the presence of perforations testify to a rigorous intercuspidity.



Figures: Figure 7: Footprint of the antagonist sector, Figure 8: Milled cavity impression casting, Figure 9: Work model and its antagonist on occlusor.



Figure 10: Bridge in the state of biscuit, Figure 11: Bridge in the mouth and occlusion control, Figure 12: Laterality movement showing the canine function.

## CONCLUSION

Occlusal registration is an essential parameter of prosthetic success. It complete the information provided by the imprint. When the clinical context is favourable for the realization of a sectoral imprint in occlusion, it is desirable then to benefit from the advantages of this technique which does not dissociate the notions of imprints and occlusion and this for a better integration of the prosthesis within the mandatory system.

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