

Occlusal Contact Recordings in Static and Functional Occlusion: Description of an Observational Method

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Introduction

Centric occlusion, (CO), refers to occlusal contact of one jaw to another in a central location. Incisal guidance, (IG), describes the occlusion in anterior motion. Retro occlusion, (CR), transfers the central occlusion to a closed posterior position; it may be called a pseudo centric relation. In left lateral, (LL), occlusion the mandible moves in a lateral direction and in right lateral, (RL), it moves in the opposite direction. All these movements whether they take place in space or in occlusal contact are used to describe the occlusion.

Method

When a dentist takes an occlusal record, it is

of a static position however there are many other positions that can be recorded. When we examine and restore the dentition, we address various occlusal positions. Centric relation is a spatial position that is neutral from occlusal proprioception. It is used to position dental casts on an articulator. This spatial position is a baseline for a repeatable jaw position that is transferred to a dental articulator. The casts are then articulated. When we make a recording, it is a one-dimensional occlusal position such as centric occlusion. The term centric occlusion refers to a commonly used articulation which is centrally located between other areas of articulation. A composite of the various articulations could be of clinical value if used for diagnosis, treatment planning, and subsequent clinical examination.

When we study articulation, we use occlusal contact indicators [1,2]. The indicators provide a practical means to efficiently mark occlusal contact areas. The markings are not permanent, nor do they include contact intensity and measured surface area.

New materials bring new ideas [3]. A silicone material can be used to record the occlusion It consists of a crystal-clear material that does not harden. It has a unique rheological response; It flows

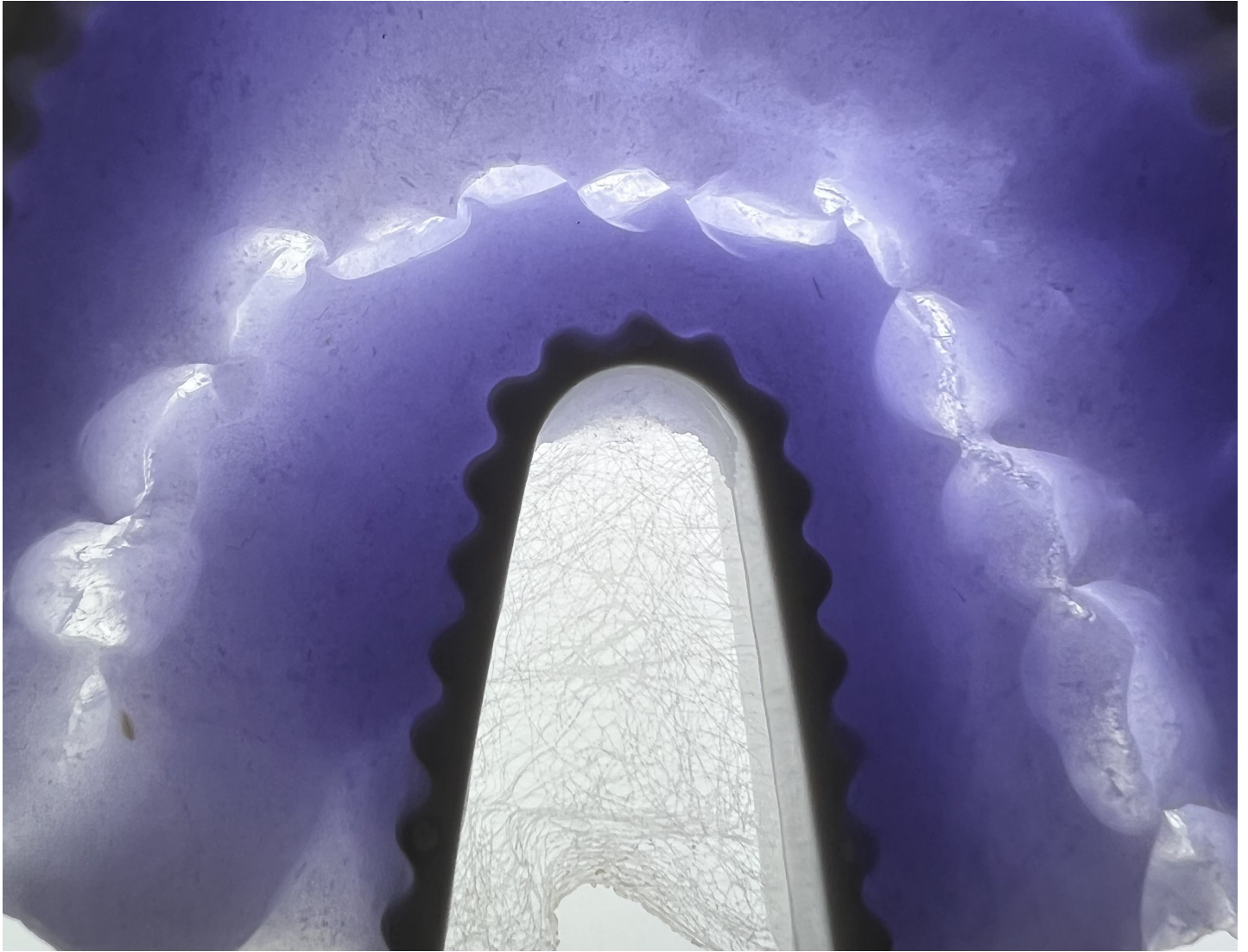


Figure 1. Centric Occlusion



Figure 2. Functional Recording

very slowly under gravity and can be mechanically deformed. Fillers can be incorporated and dispersed to make the material opaque. The material remains viscous. A dentist or staff member can make an instant impression and process it immediately for visual analysis. Mandibular excursions from one articulation to another can be made in a closed position [4,5]. An instant impression of centric occlusion and associated excursive articulations (CR, IG, LL ,RL) can be taken and imaged instantly. The cost is negligible.

To make an impression a triple tray is required [6]. The procedure follows: the opaque material is placed in a triple tray which is carefully positioned intraorally and the patient is asked to close and 'bite hard'. This is centric occlusion. We can stop at this articulation, or we can add other excursive articulations. With additions the recording becomes a functional occlusal recording (FO). The impression is placed on a light box and is photographed with a handheld phone/camera. We now have a permanent occlusal contact record. Fig.1 represents closure in centric occlusion. Contact areas are shown in white. Fig.2 represents a functional recording. Note the increase in volume.

Discussion

If we as clinicians think in terms of making a composite recording as described, we will view the occlusion in terms of coordinated movements. A synchrony of static and functional articulations should provide the clinician with an assessment system that represents a more functional restoration and ultimately enhanced patient outcomes.

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