



## INNOVATIVE MODIFICATION FOR ORTHOGNATHIC SPLINTS.

### Orthodontology

<b>Dr Bhavna Virang</b>	Reader, Department of orthodontics and Dentofacial Orthopedics, Aurobindo college of Dentistry, Indore, Madhya Pradesh, India. - Corresponding author
<b>Dr Parag Virang</b>	Private practitioner, Indore, Madhya Pradesh, India.
<b>Dr Sumeet Hardiya</b>	Reader, Department of orthodontics and Dentofacial Orthopedics Modern Dental College. Indore, Madhya Pradesh, India.
<b>Dr Suyash Jain</b>	Reader, Department of Pediatric and preventive dentistry Aurobindo college of Dentistry, Indore, Madhya Pradesh, India.
<b>Dr Amit Tripathi</b>	Senior Lecturer, Department of orthodontics and Dentofacial Orthopedics Aurobindo college of Dentistry, Indore, Madhya Pradesh, India

### ABSTRACT

Dentofacial deformities which commonly affect jaws and dentition are mostly corrected by orthodontic treatment combined with orthognathic surgeries. Fabrication of a correct splint is the key factor for a successful orthognathic surgery, which is used as a surgical guide for repositioning maxilla and mandible osteotomized segments. Here the authors presented a new and more efficient splint which increases the stability of the jaws after surgery.

### KEYWORDS:

articulators, orthognathic surgery, occlusal splints.

### INTRODUCTION:

Surgical splints are also known as occlusal wafer splints which are commonly used in orthognathic surgery after osteotomy of the jaws for a proper intra-operative jaw positioning<sup>(1-3)</sup>. Considerable time, armamentarium and assistance is required to fabricate and position the conventional types of splint which require either drilling of holes in splint & ligating it by ligature wire intra-orally or by just placing the acrylic splint in the mouth and tying them by bracket hooks with the help of elastics, which reduce the stability.

We have fabricated a new and more efficient type of surgical splint with e-chain incorporated within the acrylic. (Figure.1)



(Figure1. E-chain Splint)

This new & more efficient type of surgical splint with E-chain provides more stability and less assistance to fix the jaws more accurately after orthognathic surgery. (Fig.2)



(Figure 2. Placement of E-chain splint after osteotomy)

### CONSTRUCTION OF SPLINT:

The splint is made on the casts after mock surgery and checked by orthodontist and surgeons, the following steps are undertaken:-

1. Separating media is applied on the casts with the help of paint brush. (Fig.3)



### (Figure 3. Application of separating media)

2. Self curing acrylic is formed into the desired U- shape configuration and placed on the lower occlusal surface.(Fig.4)



(Figure 4. U-Shaped acrylic bar placed on lower cast)

3. Incorporate the e-chains at-least at 5 places between central incisors, distal to lateral incisors and distal to second premolars.(Fig.5) Then the articulator is closed.(Fig.6)



(Figure 5. Placement of E – Chain in acrylic at different place)



(Figure 6. Closure of articulator)

4. While the acrylic is still soft (dough stage), trim and contour the excess on the labial, lingual and buccal aspect to avoid the interference with orthodontic appliance and ensure that it does not tear away while carrying out this procedure. (Fig.7)



**(Figure 7. Trimming of excess material)**

1. Routine finishing and polishing must be carried out for patient comfort and maintenance of oral hygiene.

**ADVANTAGES:**

1. It is much easier way to ligate the E-chain into the surgical hooks as compare to conventional method of ligation.
2. Less operating time is required to place the E-chain surgical splint.
3. By placing the e-chain into the splint it increases the stability of the splint.
4. Less armamentarium and assistance is required for placing E-chain surgical splint.

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