

# Ligature Coil Spring: A Clinical Tip for Activation of FORSUS

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**Abstract:-** In Orthodontics, we usually face a challenge to treat skeletal malocclusions. For treating skeletal problems preferably in Class II skeletal pattern there are a variety of myofunctional and fixed functional appliances available in the market and among these few gains quite well popularity with ease of treatment with desired results and patient's co-operation. One of the appliance which is commonly used is Forsus Fatigue Resistant Device (FORSUS™), it comes with its easy to assemble parts and gives a great result. Here we tried to solve a little problem with a simple hack for activation of the appliance which we faced in our practice due to lost crimps that have come to activate the appliance.

## I. INTRODUCTION

In Orthodontics, skeletal Class II correction is a challenge in both children and adults.

In 1905, Emil Herbst introduced fixed functional appliances for patients with temporomandibular joint problems<sup>1</sup>. But with the advance in time, these appliances were more widely used for class II correction. There are a variety of functional appliances available to correct this

problem in the growing age. Power scope and Forsus Fatigue Resistant Device (FORSUS™) are commonly used devices.

Including all Class II correctors, the FORSUS™ has been accepted to be the most comfortable for the patient and exerts milder forces in comparison to other functional appliances, thus allowing the adaptation of the patient's oral musculature and dental changes<sup>2</sup>. Manufacturers provide Forsus in multiple sizes according to the requirement; consists of push rods, spring assembly, and L-pin. This appliance is provided with the metallic crimps to accordingly activate the appliance<sup>3</sup>.

It has been noticed that sometimes these crimps are lost during the work, or is not sufficient to activate the appliance as per the need. So here we come with a simple clinical tip to activate the FORSUS solely or with the combination of crimps.

- **Design:** ligature coil spring as the name describes is made up of thick ligature wire (0.011") and is very easy to fabricate at the chairside and saves time.

## II. METHOD

- Armamentarium required are- ligature wire spool, ligature wire cutter, artery forceps, and the Forsus appliance kit (fig. 1A,1B)



Fig. 1A: Ligature wire spool, Ligature wire cutter, Artery forceps



Fig.1B : FORSUS appliance tools

- A ligature coil spring is fabricated over the push rod of the appliance by using an artery forceps and both ends are tied together and covered under the spring so it won't pinch the patient. (fig. 2).

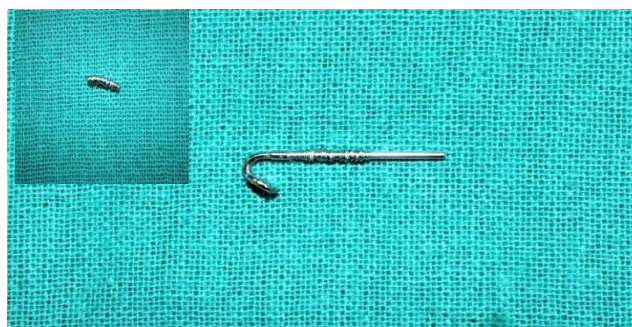


Fig. 2: Ligature coil spring over the push rod (Ligature coil spring in upper left corner)

- All three parts of FORSUS were assembled with a ligature coil spring over the pushrod and placed in the patient's mouth and checked for activation. (Fig3A,3B,3C).



Fig. 3A: pre treatment



Fig. 3B: Insertion of FORSUS



Fig 3C: Activation of FORSUS with

- A Good pleasant profile of the patient can be appreciated (Before and after placement of Forsusappliance)(Fig.4)



Fig. 4: Profile picture of the patient, Before and After FORSUS Activation

- Facial asymmetry correction after placement of Forsus appliance(Fig. 5).

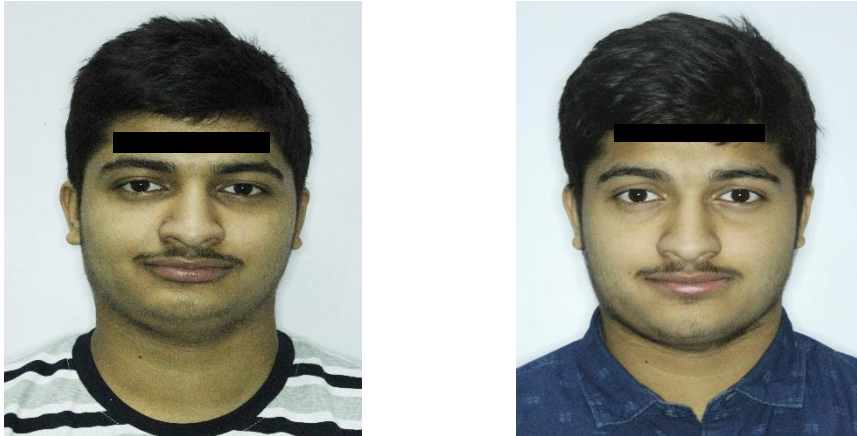


Fig. 5: Before and After frontal photo of the patient.

### III. DISCUSSION

Activation of Fixed Functional Appliance is sometimes problematic if we lost the crimps and to activate with the ligature coil spring seems easy and an effective alternative. We have also come across different methods of activation. We have tried multiple methods of activation with acrylic beads or activation with rectangular wire, which can be a little difficult to make appropriate spring around the pushrod due to its thickness and stiffness and it also causes discomfort to the patient due to impinging ends. On the other hand, a thick ligature wire serves the purpose quite effectively as it won't distort during the process and is moldable enough to make an accurate spring around the rod.

### REFERENCES

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