

“Bottle cap as bite block”: An innovative intraoral splint

Sir,

Bite blocks^[1] are commercially available devices, which can be used to prop open a patient's oral cavity during a prolonged treatment session. After certain surgeries on the mouth such as temporomandibular joint (TMJ) ankylosis or cases of submucosal fibrosis release the jaw needs to be kept in the open position by using bite blocks. We have devised a simple technique of creating bite blocks using the rubber caps of the glass bottles used for intravenous (IV) infusion.

The material is pliable, easily available with a wide range of innovative options as per the case demands.

After the desired intraoral procedure has been performed (free flap for intraoral reconstruction or release of TMJ ankylosis/submucosal fibrosis), a cap from the intravenous glass bottle which is readily available in the operation theatres is removed after breaking the seal. The inner rim of the cap that fits into the mouth of the bottle is fashioned in such a way to accommodate the maxillary and mandibular molars by cutting two small semicircles of the rubber at 6'O clock and 12'O clock positions [Figure 1]. Then, pack gauze is threaded through the IV set insertion holes and knotted outside and hence that once fitted in the mouth it can then be strapped to the cheek to prevent it from accidental slippage [Figures 2 and 3].



Figure 1: Fabrication of biteblock



Figure 2: Intraoral view of the biteblock



Figure 3: Biteblock fastened to the cheek

We have used this technique in various patients who include; patients undergoing surgeries for intraoral reconstructions, TMJ ankylosis and to those patients with restricted mouth opening following buccal mucosa fibrosis due to soft tissue involvement for whom release with grafting has been done but require postoperative splintage. In all these cases, the method proved effective

in decreasing both the cost factor as well as the preparation time in devising them. These blocks are also easy to maintain and do not break due to their pliability, but at the same time providing the necessary rigidity.

Bite blocks fall in the category of removable passive appliances in the orthodontic management.^[2] These bite blocks are commercially available in normal and also reflect in the total cost of the procedure for the patient. Most techniques that have been described in the making of these bite blocks have used some form of dental amalgam that are cumbersome to prepare. Though elastic rubber tubes have been described in their usage as elastic activators for treatment of anterior open-bites,^[3] these are normally not readily available in today's theatres, which depend more on portex and other tubes. Moreover, they are generally available with the anaesthetists and problems with sterility are in plenty. The IV glass bottle caps that are used by us are most often discarded after the use of the fluid within them and hence they are readily available. The rubber can also be easily cut and modified according to the demands of the procedure.

The technique of using IV glass bottle rubber cap for splintage after TMJ surgeries is very cost-effective as patients can be sent with them at no extra expense. These caps have the advantage of providing a wide spectrum for usage due to the immense ease with which these materials can be modified according to the surgical condition.

These caps are made of simple rubber material which makes them very pliable and can be modified as required for the case that might not be possible with the readily available bite blocks. They are also more tissue friendly for the same reasons. The range of the spectrum in which they can be put to use varies from cases of temporomandibular ankylosis to cases where free flap reconstruction of intraoral cavity has been attempted which demands constant Doppler monitoring. These blocks can be used as props to keep the mouth open. They can be placed on the opposite side of the flap and do not cause pressure related problems especially in these cases. They can also be modified to accommodate the uneven dentition by modifying the slices that are cut from the inner rim so as to accommodate the unevenly placed tooth in certain patients.

The bite blocks that are described here by no means are meant to surpass the already available commercial blocks. But these blocks due to their ability to be modified in a

number of ways and being pliable, can be a useful adjunct in complicated cases, such as free flap, in some cases of TMJ ankylosis and submucosal fibrosis release where the release might not be complete and the usually available commercial splints might need modification.

**Madhubari Vathulya^{1,2}, Prateek Arora²,
Raghav Mantri², Sunil Choudhary²**

Department of Plastic Surgery, ¹Coronation Hospital,
Dehradun, ²Max Super Speciality Hospital,
Saket, New Delhi, India

Address for correspondence:

Dr. Madhubari Vathulya, Coronation Hospital, Dehradun, India.
E-mail: madhubarivathulya079@gmail.com

REFERENCES

1. Dellinger E. A clinical assessment of the Active Vertical Corrector. A nonsurgical alternative for skeletal open bite treatment. AM J Orthod 1986;89:428-36.
2. Iscan HN, Sarisoy L. Comparison of the effects of passive posterior bite-blocks with different construction bites on the craniofacial and dentoalveolar structures. Am J Orthod Dentofacial Orthop 1997;112:171-8.
3. Stellzig A, Steegmayer-Gilde G, Basdra EK. Elastic activator for treatment of open bite. Br J Orthod 1999;26:89-92.

Access this article online

Quick Response Code:



Website:

www.ijps.org

DOI:

10.4103/0970-0358.146694