

# Novel Use of a Disposable Syringe Barrel as a Mouth Prop in Emergency Maxillofacial Trauma Cases to Access Intraoral Soft Tissue Injuries

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**Abstract** Oral and maxillofacial surgeons are often called in emergency situations during odd hours to manage facial trauma cases. While addressing these patients, many a times the surgeon might require to keep the patients mouth open for long time while accessing intraoral injuries. This can become difficult for a surgeon if in case regular dental mouth props/mouth gags are not available at a particular surgical setup. The author here describes a technique of using a standard disposable syringe as a mouth prop in emergency cases to access and repair any intraoral injury in absentia of a regular mouth prop/mouth gag.

**Keywords** Syringe mouth prop · Maxillofacial trauma · Emergency mouth gag

## Introduction

Maxillofacial surgeons are often called during an emergency in odd hours for management of facial trauma cases. Immediate surgical intervention is most often required in many such cases in compliance of golden hour repair protocol [1]. While addressing these injuries under general anesthesia, an oral and maxillofacial surgeon might require keeping the patients mouth open intraoperatively for a long

period of time, especially while managing soft tissue repair of the floor of mouth, tongue, buccal mucosa and retro-molar region.

We here present a simple and an effective method to secure the desired mouth opening intraoperatively under general anesthesia with a conventional disposable 5-ml syringe in absentia of conventional mouth gags and dental mouth props.

## Technique

A routinely used sterile disposable “Dispovan” syringe (Make-Hindustan Syringes and Medical Devices Limited, Faridabad, Haryana, India) is used here. The barrel of this presterilized disposable syringe is disconnected from its plunger, and the tip of the barrel is cut either using a sharp sterile scissors or using a 23 number blade making it suitable enough to be engaged between both the jaws on the premolar/molar teeth. Once engaged between the cusps of premolar/molar tooth properly, syringe mouth prop enables the operator to have a stable and an unhindered access to most of the parts of oral cavity (Figs. 1, 2, 3, 4). The level of cut over the barrel of syringe can vary depending on the surgeon’s need of amount of interincisal opening and patients’ clinical condition prior to the injury. In general, if we cut the barrel near the 1-cc mark as marked on the above-mentioned syringe, the remnant barrel length corresponds to 40 mm of interincisal opening suitable enough to give good amount of intraoperative accessibility for the desired period of time (Fig. 3), in the cases where patient already had a reduced preoperative mouth opening due to any reason an operator might cut the syringe at a slightly lower level, i.e., 2 cc or 2.5 cc to obtain a satisfactory mouth opening for those respective

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**Dispovan Disposable syringe**



**Fig. 1** Dispovan disposable syringe

**Syringe barrel separated from plunger and tip of syringe cut at 1cc marking**



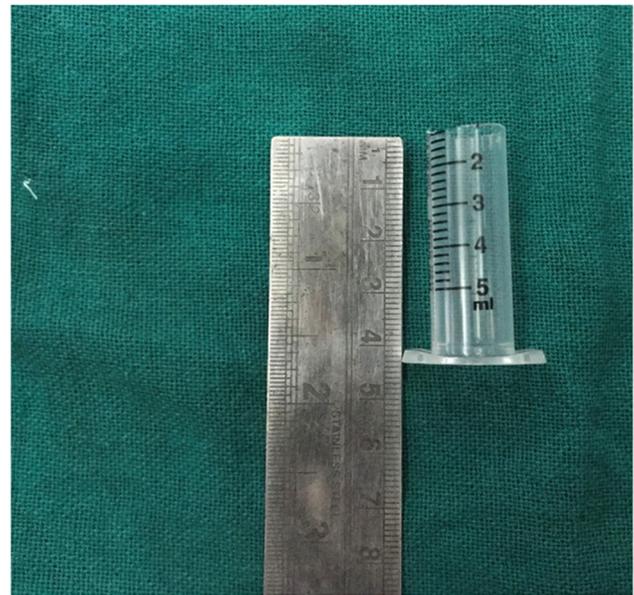
**Fig. 2** Syringe barrel separated from plunger and tip of syringe cut at 1-cc marking

cases. Depending on the injury site and side (right/left/bilateral), the operator can engage the syringe mouth prop accordingly. Once the intraoral injury is addressed, the engaged syringe mouth prop can be easily removed and can be discarded as per protocol.

**Discussion**

Simple, easy and effective innovations in the surgical armamentarium have been reported previously in the surgical literature [2–4]. Freudenberg et al. [2] have successfully used locally available nylon mosquito mesh as an alternate to the conventional nylon mesh in case of inguinal hernia repair. Wagnis et al. [3] have reported the efficient use of stationery paper clips as an alternate to RANEY clips while taking a bicoronal incision. An oral and maxillofacial surgeon is quite often called to attend a patient of

**Resultant Syringe Barrel Corresponds to 40mm (Approx) on measurement**



**Fig. 3** Resultant syringe barrel corresponds to 40 mm (approx) on measurement

**Syringe Mouth Prop in place Intra operatively**



**Fig. 4** Syringe mouth prop in place intraoperatively

facial trauma at odd hours in emergencies [4]. Many a times, in the middle of management of these emergencies the surgeon might require the patients mouth to be opened for a long period of time for unhindered access to structures such as floor of mouth, tongue, buccal mucosa; the above-mentioned syringe mouth prop can be used very easily and effectively where routine mouth gags/dental mouth props are not available. Custom-made mouth props have been reported prior in the literature and have been used efficiently in specific cases [5, 6]. The syringe mouth prop is extremely efficient in the context of cost, availability and its intraoperative effectiveness in holding the mouth open

while the patient is under general anesthesia. Since these disposable syringes are commercially available in a presterilized pack, the chances of infection because of their use are negligible. A retrospective evaluation of personal record from July 2008 to July 2017 showed that the author has used this syringe mouth prop very effectively in 17 patients. In all the above-mentioned patients, the non-availability of conventional mouth gags/dental mouth props at the operative setup was the reason that the syringe was converted into a mouth prop with the technique described here.

## Conclusion

In the absence of conventional mouth gags/dental mouth props, syringe mouth prop is a very simple and a effective tool in holding the patients mouth open under general anesthesia thus allowing unhindered access to the intraoral soft tissue injuries.

## Compliance with Ethical Standards

**Conflict of interest** The authors declare that they have no conflict of interest.

**Ethical Approval** Not required.

**Informed Consent** Obtained from all patients before procedure.

## References

1. Booth PW, Epply B, Schmelzeisen R (2012) Maxillofacial trauma and esthetic facial reconstruction, 2nd edn. Elsevier Saunders, New York
2. Freudenberg S, Sano D, Ouangré E, Weiss C, Wilhelm TJ (2006) Commercial mesh versus Nylon mosquito net for hernia repair. A randomized double-blind study in Burkina Faso. *World J Surg* 30(10):1784–1789
3. Wankis P, Prasad GSV, Wadje S (2013) A simple method to control bleeding by stationery paper clips as an alternate to Raney's clips during coronal incision. *J Maxillofac Oral Surg* 12(1):117–119
4. Woods GD, Leeming KA (1995) Oral and maxillofacial surgery in accident and emergency department. *J Accid Emerg Med* 12:270–272
5. Nagori SA, Chattopadhyay PK, Kumar S, Kamalpathey K (2017) Custom made mouth prop for TMJ arthrocentesis: a technical note. *Oral Maxillofac Surg* 21:75–77
6. Geary JL, Kinirons MJ, Boyd D, Gregg TA (2000) Individualized mouth props for dental professionals and carers. *Int J Pediatr Dent* 10:71–74