



Use of Hawley's Appliance to Prevent Dead Space Formation After Minor Oral Surgery: A Novel Technique

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Abstract

Dead space, or a space remaining in the tissues due to improper closure of surgical wounds, permitting the accumulation of blood or serum underneath the tissues. Although seen commonly after general surgical procedures but is also commonly noticed after minor or major oral and maxillofacial surgical procedures. For example, enucleation of a cyst, excision of the exophytic growths etc. All such procedures requires elevation of a full thickness mucoperiosteal flap leaving behind a large portion of unsupported tissue due to excision of lesion. Such flaps when sutured back tend to develop dead space beneath which in turn can get infected and lead to secondary morbidity.

Usually, dead space of accessible areas can be managed easily but management of dead space in areas with minimal accessibility in challenging for the surgeons. This paper brings on a simplest and customized technique in avoiding dead space creation and or its management after oral and maxillofacial surgical procedure.

Keywords: Dead Space; Hawley's Appliance; Oral and Maxillofacial Surgery

Origin and genesis of the article

The term 'Dead Space' describes an empty space that might result after the excision of a space-occupying tissue mass or evacuation of collected fluid, tissue dissection leading to disruption of tissue planes and tissue separation or disruption secondary to trauma.

This empty space can accumulate fluid or blood leading to seroma or hematoma respectively. Persistent accumulation of fluid separates the tissue planes which may delay or prevent normal healing, moreover it can contribute to infection. Therefore, appropriate measures taken at the time of surgery to avoid formation of

a dead space and or dead space management well in time is of utmost importance.

There are numerous methods considered for the management of dead space. Choice of the same depends on the size, location, and the cause. These options may range from no treatment to external bandage compression, suture placement, use of drains, and aspiration. Any of these can be used alone or in combination to combat dead space. Dead space management becomes challenging for the surgeons especially if it happens in one of the most inaccessible parts of the body like the oral cavity.

Intraoral space occupying lesions like cyst, fibromas, lipomas, benign tumors etc. are quite commonly excised by the oral surgeons via intraoral approach leaving back a potential tissue pocket which may turn out to be a dead space in the initial post-operative period.

Commonly described methods for dead space management like compression bandage, drains etc. are not deemed feasible in such an inaccessible area. Although suturing of such wounds helps to some extent but tissue excess and laxity after mass excision leading to collection of fluid and blood along with the flora rich, anaerobic intraoral environment complicates the situation to next level.

Taking all the factors into consideration, author being an oral and maxillofacial surgeon along with his team started searching for an more feasible and extremely effective way of managing such clinical scenarios. The search came to an end the day author excised an intraoral tissue mass present on the lingual aspect of the mandibular left premolars (Figure 1).



Figure 1: Preoperative clinical picture showing lesion lingual to the mandibular left premolars.

This patient reported to the author with the chief complain of difficulty in wearing her orthodontic appliance past 2 to 3 weeks due to a swelling in lower left back teeth region towards the tongue. On examination a round, rubbery, non-tender, mobile tissue mass was felt extending from 33 region to 36 region measuring approximately 2 x 2cms. Aspirate was found negative and the lesion was provisionally diagnosed as a lipoma. Excisional biopsy was planned under local anesthesia.

After administering local anesthesia a crevicular incision was made and the mass was dissected out slowly (Figure 2). The entire mass was excised in toto (Figure 3) followed by gingivoplasty and tight closure using Mersilk 3-0.

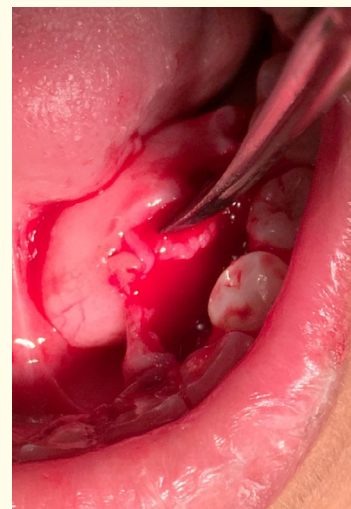


Figure 2: Intraoperative picture.



Figure 3: Lesion excised in toto.

Looking to the tissue laxity and the tongue interference even after tight suturing, operator wondered how to give a pressure pack and avoid hematoma and probable dead space at this surgical site. The very next though was to check the fit of the patient's old Hawley's appliance, the moment appliance was found to fit well (Figure 4), the surgeon decided to use the appliance itself as a pressure pack and observe the patient for tissue blanching or necrosis.

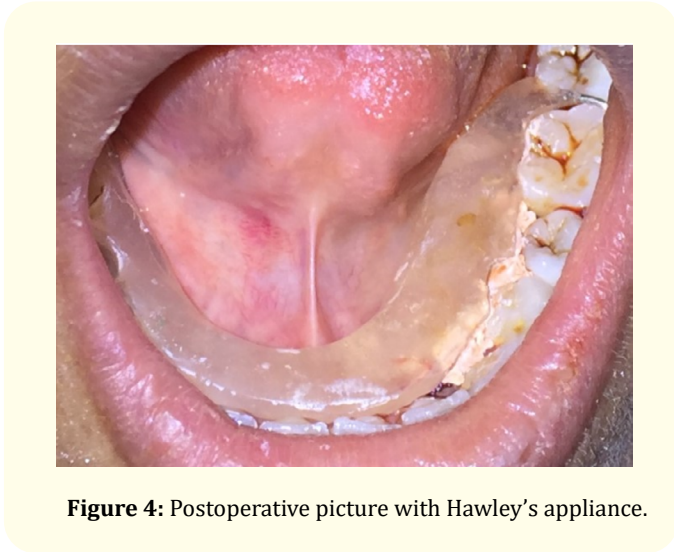


Figure 4: Postoperative picture with Hawley's appliance.

The patient was recalled after 24 hours, 3 days and 1 week post-operatively and there was no tissue blanching neither there was any tissue necrosis noticed [1].

Conclusion

Looking to the results, author suggested that the use of Hawley's appliance can be a novel technique in preventing development of intraoral dead space after minor oral and maxillofacial surgical procedures performed in the lingual aspect of the mandible or else over the hard palate. For all such cases, preoperative impressions can be made and a Hawley's appliance can be fabricated after trimming the swollen part in the cast and kept ready, sterilized and same can be inserted postoperatively and patients observed for the results. Based on the similar concept author is enthusiastic to use a modified Frankel's Appliance in avoiding development of dead space for the intraoral lesions presenting in the buccal aspect of the jaws and operated intraorally.

Bibliography

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