

## **Chapter 3**

### **BONE LID TECHNIQUE**

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#### **INTRODUCTION**

In 1984, Lindorf (1) first described the “bone lid” method as the creation of an access window for the purpose of antrostomy. Later, in 1987, Khoury and Herschner (2) published a study, in which this technique was used for apical root resection in the posterior regions of the mandible.

Bone lids allow the elevation of a cortical shell to create a window, that is then replaced in its original position after the operation (3). This method prevents significant bone deformities resulting from osteotomies (4, 5).

Hence, it is mainly preferred, especially in scenarios where the buccal cortex is relatively thick (6, 7). This technique is aimed at creating acceptable visualization with minimal sacrifice of bone and supporting the mucoperiosteal flap and bone growth (7-10).

The healing process at the surgical site may be hindered or delayed due to the cumulative loss of cortical bone due to chronic inflammation and surgery (8-10). In cases where there is a large apical lesion, especially if it involves a cyst, there is a risk of removing a significant amount of the vestibular cortical plate during the process of completely removing the affected tissue. As a result, the healing process may be incomplete or delayed. (10-12).

The operator should consider using regenerative procedures with bone graft material if there is significant cortical plate loss (8, 13, 14). When it comes to grafting material, using autologous tissue is widely considered the most effective option. To ensure that the healthy bone cortex is utilized as the optimal regenerative material, it is necessary to develop a mechanism that can preserve the plate’s characteristics throughout the process (10, 14).

Enucleation-induced bone loss is the major disadvantage of cystectomy surgeries. It may complicate the placement of future dental implants in this area

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## **IMPROVEMENTS**

The utilization of Cone Beam Computer Tomography (CBCT) and technological advances has been employed in the field of planning, and in the evaluation of postoperative outcomes (19, 57). In recent times, there has been a notable advancement in virtual planning techniques that enable the creation of personalized surgical templates. These templates are fabricated using milling or additive manufacturing methods and serve the purpose of delineating accurate cutting planes (21). A study has documented the use of a computer-assisted navigation system during surgery. This system enhances surgical precision and accuracy, potentially leading to better outcomes (53). Enhancements to the methodology can be achieved by the utilization of computer-aided personalized osteomy guides. These guidelines facilitate the creation of a pre-determined precise shape of the osteotomies, resulting in improved lid realignment and stability (40). This strategy has the potential to enhance the results of the bone lid technique, hence increasing its practicality and feasibility (21, 40, 66, 67). Utilizing personalized computer-aided guides during virtual planning can improve treatment outcomes. (55)

## **CONCLUSION**

The bone lid approach is a surgical tool that can influence the progression and result of the surgical treatment, like any kind of flap or incision, which aims to serve the surgical intention and its outcome. It is a proven safe method, which has many indications and can be utilized with minimal to no bone sacrifice, if a piezoelectric device is used, what is the most certain thing that can be said about this subject. This method will help preserve bone dimensions as much as possible when performing pre-implant procedures, especially in areas where dental implants will be placed later. Nowadays, CBCT and computer support are available for planning. This will improve the intraoperative flow and as well the outcome of the operation.

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