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Microstomia Correction with Fishtail Flap: Technical Strategy

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Abstract

Microstomia is the decrease of the oral aperture due to acquired or congenital diseases. The pathology is challenging for surgeons due to recurrence rates and function loss. The patients suffered from deglutition, speech, aspiration, respiration problems etc. Treatment can be supplied by surgical methods described before but none of the methods is gold standard yet. Fishtail flap technique which is cheap and efficient method, is choice of microstomia reconstruction. In this report we presented a surgical correction of a microstomia patient after successful vermilionectomy due to lip cancer. After 9 month follow up the patients inter comissure distance is enough.

Keywords: *Microstomia; lip cancer; fishtail flap; vermilionectomy*

Introduction

Lips which are located on the central of the face, are functional units related with speech, preservation of the oral contents. Their movement by muscles surrounding the lips is important for function. Microstomia is used for the situation of the small oral aperture. Many reasons can cause microstomia such as genetic (Freeman-Sheldon syndrome), traumatic, cohesive substance injury, burn injury, connective tissue diseases (scleroderma) etc. (1-3)

There are plenty of reports about correction of the microstomia surgery due to high level of recurrence rates and complex way of surgery. The correction of such challenging pathologies might be supplied via fishtail technique by increasing the distance 10 mm on inter comissure and 5 mm on inter incisional level (3). Fishtail flap technique is cheap reliable method for correction of microstomia defect (4). In this report we present a fishtail flap method to correct the microstomia defect.

Case Report

Fifty six years old man was operated due to micro invasive cancer of the lower lip by vermilionectomy 9 months ago. The surgery was successful about tumour control but after surgery opening of the mouth was restricted due to contracture formation on the angle of the mouth (Figure 1a, b).

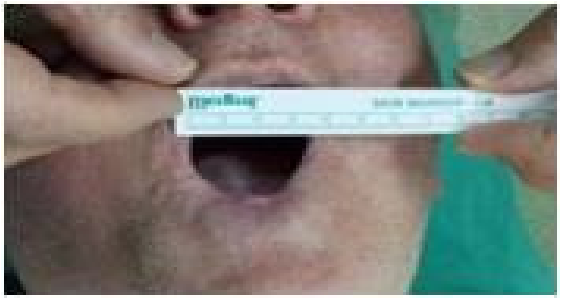

Fig 1a. *Preoperative intercomissural line 1b Postoperative intercomissural line*

Fig 1b. *Postoperative intercomissural line*

Patient also could not use his dental prosthesis effectively. Physical examination reveals the decreased inter commissural distance and restricted muscle function of the mouth, also during opening of the mouth (Figure 1a, b). We planned to apply fishtail method to correct the microstomia defect. Peri comissural mucomusculary advancement flap is used for this case. After 9 month follow up we can supply enough oral opening and inter comissural distance (Figure 1a, b).

Technical Strategy

Correction of the microstomia defects can be supplied via advanced knowledge about perioral anatomy of the muscles, oral mucosal tissue and surgical experience. New comissural line is measured and marked according to vertical line crossing the eye pupils. Inferior and superior vermillion points are joined together and the formed triangular region is resected including the skin, submucosal region and muscle tissue. Mucosal incisional line is prepared for superior, inferior and lateral wide based flaps. Superior and inferior vermillion lines are prepared with inferior and superior flaps whereas lateral flap is used for new oral comissure formation (Figure 1).

Discussion

Microstomia is the decrease of the distance among lateral comissure of the lips. This might be related with congenital or acquired pathologies. We have known that most of the cases are acquired reasons and one of the most important reasons is the surgery of the lip cancers.

Microstomia might cause several problems such as malnutrition, speech difficulties, poor oral hygiene, inability to use dental prosthesis, risk of aspiration (2). In our case the patient is treated from a lip cancer by vermillionectomy successfully but 9 months after surgery the patient suffered from microstomia. The patient chief complaint was the inability to use his dental prosthesis. This can interfere with his speech and nutritional habits.

Surgical correction of the microstomia is challenging practice due to supplying of the functional and aesthetic orifice. Several procedures are applied to correct the microstomies.

Dieffenbach is first described the surgical correction of the microstomia involving the different advancement flaps after contracture resection (6). Many modifications of this methods by vermillion advancement or buccal transposition are described then (6-8). Moreover, different methods might be used to correct microstomia such as z-plasties, rhomboid flaps, and scar excision with full-thickness or split-thickness skin grafts (9). We used the fishtail method which was described by Monterio et al (4). This method is not used for patient after vermillionectomy before. The method includes the;

Marking of the new comissure lateral to mid pupil line bilaterally. Next, skin incisions were designed in the shape of fishtail. Orbicularis oris muscle fibers must be preserved. A posteriorly based triangular mucomuscular flap is prepared. Previously designed mucomuscular flaps should be rolled outward around the remaining intact muscle fibers and advanced laterally and new comissure is created bilaterally.

Adequate oral orifice distances both horizontal and vertical diameter can easily be supplied by this method. The patient can use his dental prosthesis comfortably after surgery. In our belief this method also decreases the recurrence rate of the microstomia. Preservation of the muscular tissue and creation of the sufficient mucomuscular flaps are the key points of the diminishing recurrence rates. We believe this method is safe and practical for microstomia after vermillionectomy surgery.

Conclusion

In this case we apply fishtail technique to deal with microstomia defect after vermilllionectomy due to lip cancer. This comissuroplasty method is safe, functionally reasonable, practical and cheap. After 9 month follow-up the inter incision distance is 45 mm and intercomissural distance is 65 mm.

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