

**Polyglycolic acid sheets with fibrin glue (MCFP technique) for  
resection of oral mucosa**

**Short title: MCFP for oral mucosa**

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The partial resection technique is a common modality for the treatment of oral squamous cell carcinoma of stage I and II lesions and precancerous lesions in the oral cavity, if the resection level is so large that a primary closure cannot be successfully made, tie-over dressing would be selected. However, in the case of the dressing, it may be necessary to cover the wounded area until such materials are removed. Furthermore, a tie-over method tends to be uncomfortable for the patient and this condition also leads to longer and more complicated surgery<sup>1</sup>.

Bioabsorbable fabric of Poly glycolic acid (PGA) sheets and fibrin glue are used in cases of pulmonary emphysema who undergo respiratory surgery<sup>2</sup>. In the field of oral and maxillofacial surgery, fibrin glue was used for local haemostasis after surgery<sup>3</sup>, but the use of PGA sheets with fibrin glue has not been reported for oral and maxillofacial surgery yet. We report the technical note that were effectively treated by PGA sheets (Neoveil®) and fibrin glue (Bolheal®) splay after a partial resection of the oral mucosa due to squamous cell carcinoma of Stage I and II and precancerous lesions. The wounds were covered with PGA sheets and fibrin glue splay (Mucosal defect Covered with Fibrin glue and Polyglycolic acid sheet: MCFP technique).

We performed MCFP technique to twelve patients of oral squamous cell carcinoma or precancerous lesion (Table.1). After partial resection, procedure of MCFP technique is described that the wound was covered with bioabsorbable fabric (Neoveil®, Gunze Co., Ltd., Tokyo, Japan) of polyglycolic acid and fibrin glue (Bolheal®, Chemo-Sero-Therapeutic Research Institute, Kumamoto, Japan), which consists of lyophilized powder of fibrinogen, lyophilized powder of thrombin, an aprotinin solution for the reconstitution of fibrinogen, and a calcium chloride solution for the reconstitution of thrombin<sup>4</sup> on the wound. At first, the solution of fibrinogen is

applied on the wound, and the wound is covered with PGA sheet which is slightly smaller than the extent of resection. Finally the wound is atomized a mixture of the solution of fibrinogen and the thrombin<sup>5</sup>. The mixture stiffens approximately three minutes later (Fig.1). Moreover, for 2 days after the surgery, nutrition was supplied by means of tube feeding through a nasal tube due to prevent this covering material from exfoliating. With regard to the course of healing of the wound surface after the surgery, from approximately 2 weeks after the surgery (Fig. 2), the wound surface began to epithelized and the dressing material also started to be exfoliated, only the exfoliated dressing was cut off. Approximately 1 or 2 months after the surgery, the PGA sheet completely exfoliated and the wound surface newly epithelized. Subsequently, 1 year after the surgery, it completely epithelized(Fig. 3). It showed no scar.

According to the cases that we performed, with regard to the indication, we suggested that this technique should be applied that early cancer or precancerous lesion that closure is usually with the tie-over method or a split-thickness skin graft involve complex procedure. But primary closure is enough for the too small lesion. This procedure of MCFP technique is simple, and the surgical duration is also short. Therefore, for the open wound surface after resection of Stage I and II oral cancer and precancerous lesion in the tongue, gingiva, and buccal mucosa, in which primary closure is difficult to perform, it is suggested that it can serve as an alternative technique to a tie-over dressing or skin grafting.

## **SOURCES OF SUPPORT**

None to declare

## **CONFLICT OF INTEREST**

There are no conflicts of interest.

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## FIGURE LEGENDS

Case No.	Age (yrs)	Sex (M/F)	Diagnosis	Site	Extent of resection (mm)
1	37	F	squamous cell carcinoma	tongue	33x14
2	63	M	squamous cell carcinoma	tongue	40x25
3	57	F	squamous cell carcinoma	tongue	16x15
4	82	F	mild epithelial dysplasia	tongue	37x24
5	70	M	squamous cell carcinoma	tongue	35x30
6	74	M	squamous cell carcinoma	tongue	12x12
7	97	F	squamous cell carcinoma	buccal mucosa	40x22
8	34	F	squamous cell carcinoma	tongue	28x18
9	57	M	moderate epithelial dysplasia	tongue	35x25
10	80	M	squamous cell carcinoma	palate, buccal mucosa	20x18
11	75	M	squamous cell carcinoma	tongue	42x25
12	73	M	mild epithelial dysplasia	tongue	25x15

Table.1 Clinical manifestation on each case of MCFP technique.



Figure.1 Intraoral photograph of the wound after partial resection of tongue squamous cell carcinoma (stage I, case no.1) taken during surgery. With respect to the wound surface, a PGA sheet and fibrin glue were coated.



Figure.2 Intraoral photograph taken 2 weeks after surgery. The PGA sheet exfoliated partially from the surrounding area.



Figure.3 Intraoral photograph taken 1 year after surgery. It epithelized completely and showed no scar.