

## TREATMENT OF RESTRICTED JAW MOVEMENT DUE TO SCARS AFTER PALATOPLASTY

BY

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### ABSTRACT

In order to correct the condition of restricted jaw movement due to hypertrophic scar tissue after palatoplasty, the scar is first cut laterally. After cutting away the scar tissue from under the mucosa and suturing the incision longitudinally, a drastic improvement in free jaw movement is obtained.

### INTRODUCTION

After a palatoplasty operation, a large amount of scar tissue forms when sutures of the right and left mucosal flaps and incision lines between the upper and lower alveolar ridges have been made at right angles to the long axis of the mucosal cleavage lines. On the other hand, when the incision lines are parallel to this long axis, the amount of scar tissue is remarkably small<sup>1,2)</sup>. To prevent the formation of scar tissue in the sutures of the right and left mucosal flaps, we have obtained good results by using PGA sutures in the muscle layers and not removing the sutures afterwards. However, it was not always possible to avoid making a prolonged incision between the upper and lower alveolar ridges, resulting in the formation of hypertrophic scar tissue. We now report a successful operative procedure for correcting the condition of patients afflicted with restricted jaw movement because of the scar tissue.

### CASES TREATED

Among the 48 cases of palatoplasty reported by us previously<sup>2)</sup>, we treated 7 patients between the ages of 3 and 6 who had much hypertrophic scar tissue between the upper and lower alveolar ridges, and who either had restricted jaw movement because of the scar tissue, or simply desired to have it removed. Among these patients was one who had jaw movement restricted to a width of only 10 mm, resulting probably from a Z-plasty, as evidenced by the scars on the cheek mucosa.

### OPERATION AND ITS RESULTS

Fig. 1 shows the hypertrophic scar tissue between the upper and lower alveolar ridges. When a lateral incision is made across this scar, as in Fig. 2, and the submucosal tissue is prised away with a blunt instrument, fibrous scar tissue can be seen. This scar tissue is cut away under the mucosa, as in Fig. 3, and the mucosa is sutured as in Fig. 4, permitting a wider

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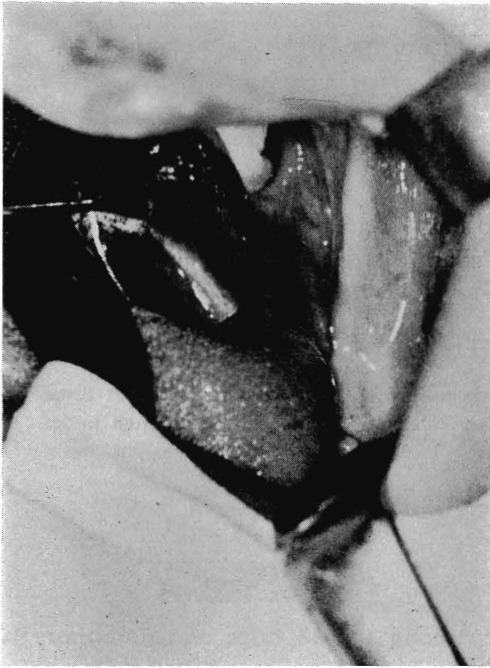


Fig. 1. Funicular hypertrophic scar tissue between upper and lower alveolar ridges on the left side.

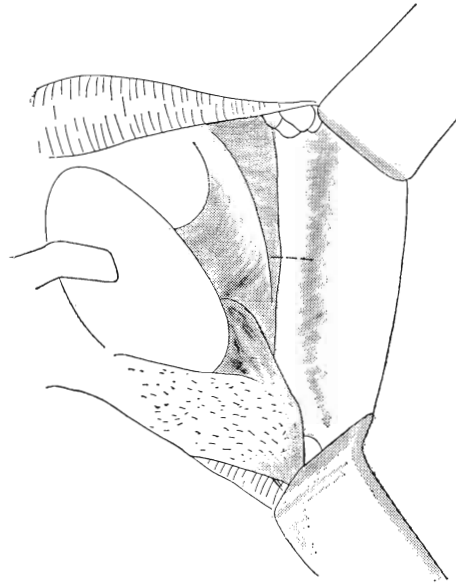


Fig. 2.

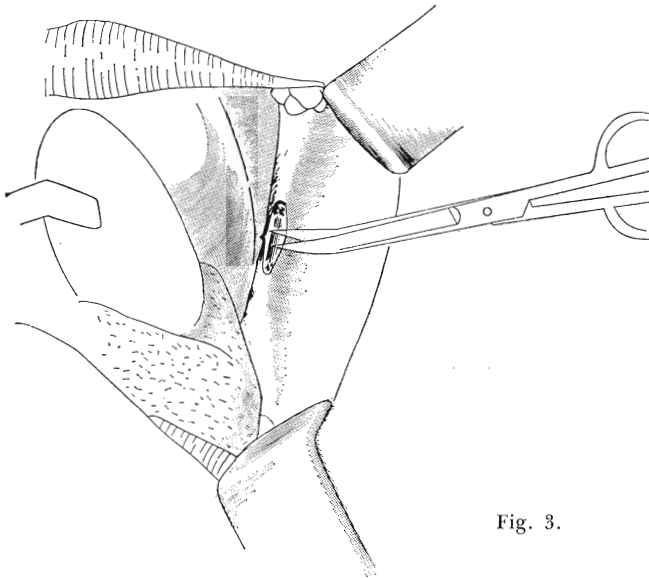


Fig. 3.

separation of the upper and lower alveolar ridges.

The patients were made to perform mouth-opening exercises for a month be-

ginning a week after the operation. Table I shows the extent of maximal incisal opening before the operation and at the end of the period of exercise after the operation.

Table 1. Extent of maximal incisal opening (mm)

Patient	Sex	Age	Before operation	After operation	Amount of improvement
H. H.	Male	3	33	40	+ 7
Y. K.	Male	3	34	40	+ 6
S. H.	Male	5	35	44	+ 9
N. N.	Female	5	10	40	+30
O. M.	Female	6	38	50	+12
M. M.	Female	6	14	39	+25
M. K.	Male	6	39	50	+11
Average			29.0±11.0	43.3±4.5	14.3±8.7

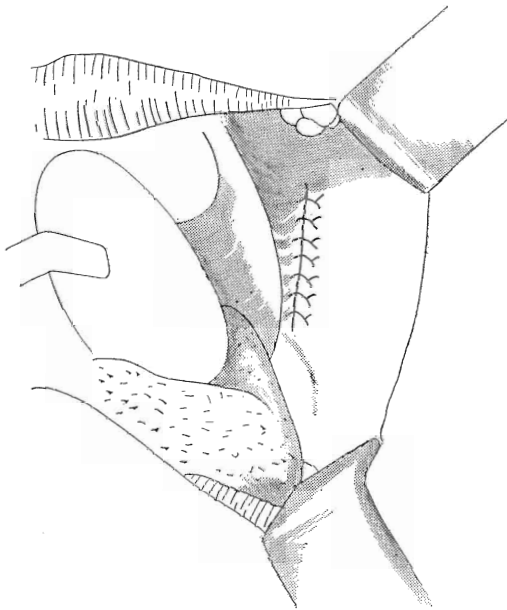


Fig. 4.

The measurements were made between the edges of the upper and lower deciduous incisors, or between the upper and lower permanent incisors. As can be seen from this

table, the limits of maximal incisal opening varied from 10 to 39 mm before the operation, with an average of  $29.0 \pm 11.0$  mm, and from 39 to 50 mm, with an average of  $43.3 \pm 4.5$  mm, after the operation. All the patients showed an increase in the extent of maximal incisal opening, varying from 6 to 30 mm, with an average of  $14.3 \pm 8.7$  mm. When these pre- and post-operative figures are compared statistically, the jaw opening is seen to have been increased by a significant amount (level of significance 5%). Therefore this operation can be considered effective in correcting the condition of restricted jaw movement due to hypertrophic scar tissue after palatoplasty.

## REFERENCES

- 1) Motegi, K., Azumi, Y., and Ueno, T.: Cleavage lines in the oral mucosa of Japanese cadavers. *Bull. Tokyo Med. Dent. Univ.*, 21: 163-171, 1974.
- 2) Motegi, K., Matsuo, T., Ito, S., Azumi, Y., and Ueno, T.: Cleavage lines in the oral mucosa and oral scars. *Bull. Tokyo Med. Dent. Univ.*, 22: 155-159, 1975.