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postoperative cleft palate patient

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Minor prosthesis for the postoperative cleft palate patient

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Not every patient with cleft palate must be referred to a cleft palate team. The general practitioner can perform a service for the patient with cleft palate whose rehabilitation needs include replacing of missing teeth, restoring occlusion, closing small residual clefts and plumping of the upper lip. A treatment technic is described.

The comprehensive treatment of the cleft palate individual entails coordination and cooperation among the medical, dental, and speech professions.¹ This paper deals only with a phase of cleft palate rehabilitation that can be adequately performed by the general practitioner without his having had any specialized training.

An outline of treatment is presented for a hypothetical cleft palate individual who has missing anterior teeth, a re-truded upper lip, small palatal or labial

perforations or both, and a mutilated alveolar ridge. He has had surgical closure of the hard and soft palates and has socially acceptable speech. This patient, therefore, will not need a velopharyngeal section or speech aid.

A removable appliance is indicated as the treatment of choice rather than fixed bridgework because of poor bony support in the region of the cleft, the need for plumping of the lip, and for the closing of all residual openings in the hard palate and labial sulcus (Fig. 1 and 2).

All deviations from normal are noted during a visual examination of the orofacial regions. This is important because any aberrations such as small residual clefts will necessitate changes in impression technics (Fig. 3). Any adhesions in the labial sulcus or bony protuberances in the ridge area of the cleft should be removed before construction of the appliance. Sound principles of oral hygiene and education in the future care of the

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prosthetic appliance should be initiated at the beginning.

TREATMENT

Impressions for study models are taken with an alginate material. All perforations should first be packed gently with gauze so that the impression material is not forced into the nasal cavity. The gauze should be treated with petroleum jelly. A wax occlusal registration is taken for mounting the study models on an articulator. A preliminary survey of the models is then made.

Normal procedures of sound operative dentistry and all other indicated disciplines are then carried out. Occlusal rests are prepared on the abutment teeth. It is suggested that thought be given to the idea of clamping as many teeth as possible. The bone support in the cleft ridge is not as sturdy as a normal uninterrupted arch, and therefore, a splinting effect is desirable (Fig. 4).

After preparation of the mouth, an elastic compound impression should be taken for the fabrication of a custom-made tray. This step is emphasized because an accurate impression of the periphery is essential for sealing any labial openings.

Gauze treated with petroleum jelly is once again loosely packed into all perforations. The gauze is placed in such a

way that at least 3 mm. of the residual cleft is left open for registration in the impression. An alginate type material is then used to fill the custom-made tray

Fig. 1 • Patient shows a severe Class III relationship. Upper lip is retruded because of inadequate support of underlying structures

Fig. 2 • Proper plumping of the upper lip can effect a great change in the patient's appearance

Fig. 3 • Residual clefts will necessitate changes in impression technics. All perforations should be packed gently with gauze to prevent pushing impression material into the nasal cavity. The gauze should be treated with petroleum jelly

Fig. 4 • Clamping as many teeth as possible for a splinting effect and sharing of abutment stresses is indicated when dealing with a cleft alveolar ridge

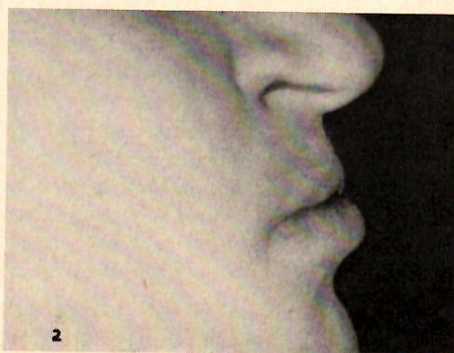
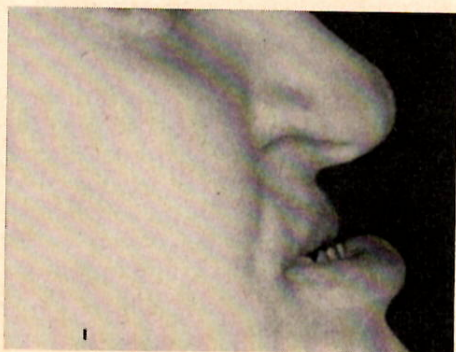
Fig. 5 • Bilateral cross-bite with only three teeth in contact

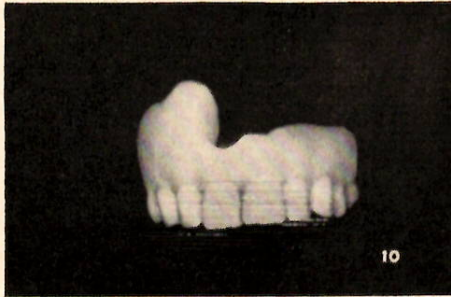
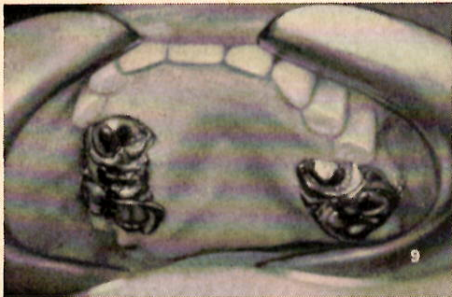
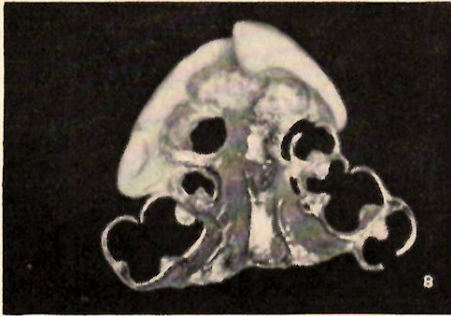
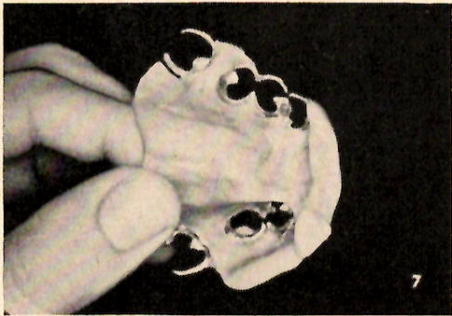
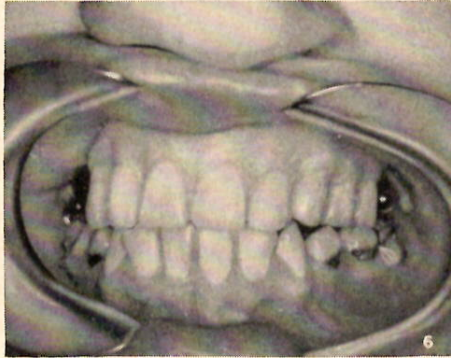
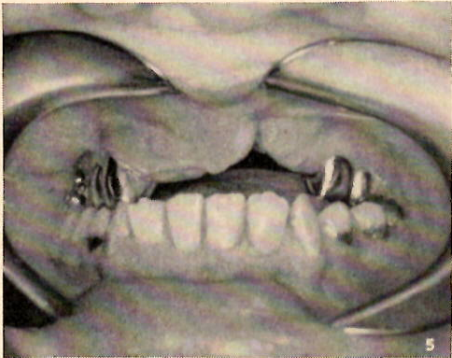
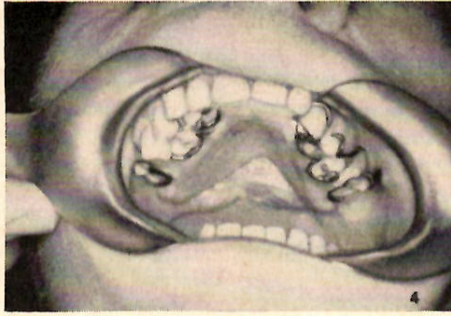
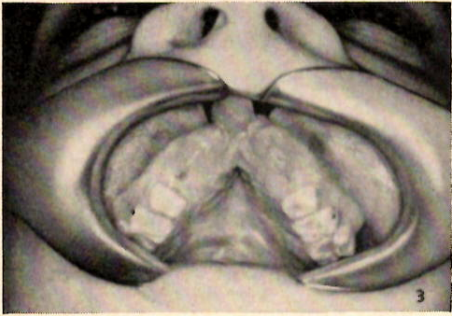
Fig. 6 • Occlusion is corrected by placing acrylic teeth buccal to the abutment teeth. The teeth are set up as if the patient were edentulous

Fig. 7 and 8 • Abutment teeth are actually enclosed in the appliance in regions where the arch is constricted

Fig. 9 • Acrylic teeth placed buccal to the abutment teeth

Fig. 10 • View of the anterior border of an appliance. The extent that the lip on the right side is built up to achieve a balanced esthetic result can be seen





for the final impression. Care is exercised so that the material and tray are placed on the tissues without pressure. The impression, when set, can be removed without difficulty or breakage providing all openings have been properly sealed off. Models are poured and final surveying is completed. The usual laboratory procedures are carried out for the wax-up and casting of the framework. The casting is tried in the mouth and the occlusion is adjusted.

A modification of the normal technic for setting up teeth may be necessary at this point. Because of the abnormal forces of the buccal and labial musculature, often found in the cleft palate individual, the maxillary arch may be severely constricted. This may cause a resultant unilateral or bilateral cross-bite, or lack of occlusion except for one or two posterior teeth (Fig. 5). If there is this severe degree of malocclusion the patient is treated as if he were completely edentulous. The usual methods of establishing centric relation will then be used. Occlusion is corrected with the use of acrylic posterior teeth placed buccally to the abutment teeth and set up to restore some semblance of a normal occlusion (Fig. 6). Often the acrylic teeth will have to be severely ground on the lingual aspect for their proper placement. In other words, the abutment teeth may actually be enclosed in the appliance (Fig. 7-9).

After the teeth have been set up, the denture is tried in the mouth. Proper

plumping of the lip is now carried out (Fig. 10). After the occlusion is checked and esthetic requirements are satisfactorily met, the appliance can be sent to the dental laboratory for processing and polishing.

Adjustments on the finished denture should be made with care in the region of the labial periphery. It is important not to underextend the denture by grinding and polishing in the region of any labial perforation.

SUMMARY

The treatment of the cleft palate patient requires the coordinated services of several specialists. This does not mean, however, that every cleft palate patient who presents himself must be referred to a cleft palate team. The general practitioner can perform a service for the individual whose rehabilitation needs include replacing of missing teeth, restoring occlusion, closing small residual clefts and plumping of the upper lip. Treatment of such an individual promises the general dentist the satisfaction of knowing that his services may be utilized in the rehabilitation of the cleft palate patient. *24 N. Lime Street*

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1. Cooper, H. K. Integration of services in the treatment of cleft lip and cleft palate. *J.A.D.A.* 47:27 July 1953.