Available online at www.sciencedirect.com

ScienceDirect

British Journal of Oral and Maxillofacial Surgery 57 (2019) 383–384

BRITISH Journal of Oral and Maxillofacial Surgery

www.bjoms.com

Technical note

Preoperative nasoalveolar moulding in a patient with a unilateral cleft lip and palate using a modified nostril retainer: a technical note

S. Titiz *

Department of Orthodontics, Faculty of Dentistry, Usak University, Usak, 64200, Turkey

Accepted 21 March 2019
Available online 12 April 2019

Keywords: unilateral cleft lip and palate; presurgical orthopaedic treatment; modified nostril retainer

Preoperative orthopaedic treatment in newbornsis an adjunct for the correction of cleft lip and palate. Grayson et al[1] combined intraoral and nasal moulding, and added a nasal stent after reducing the width of the alveolar cleft to 5 mm. The aim of this technical note is to introduce a new approach to preoperative nasoalveolar moulding for patients with unilateral cleft lip and palate, which removes the need to reduce the width of the alveolar cleft.

Technique

In patients with an alveolar cleft that is more than 5 mm wide, the Grayson technique is used to reduce it, but the modified nostril retainer can be used for nasal moulding before this reduction. The retainer is manufactured from soft acrylic in a special mould without taking an impression of the nose (Fig. 1). Before insertion, an L-shaped piece of tape is attached from the alar groove at the non-cleft part of the nose, before it is stretched, and after the columella has been approximated to the midline (Fig. 1). Subsequently, the retainer is inserted into the nostrils, and tape applied to its wings so that it adheres to the cheek of the infant. Soft acrylic is added to the cleft side of the retainer every week (Figs. 1–4).

In patients with severe unilateral clefts of the lip and palate who are treated using the Grayson technique, the reduction

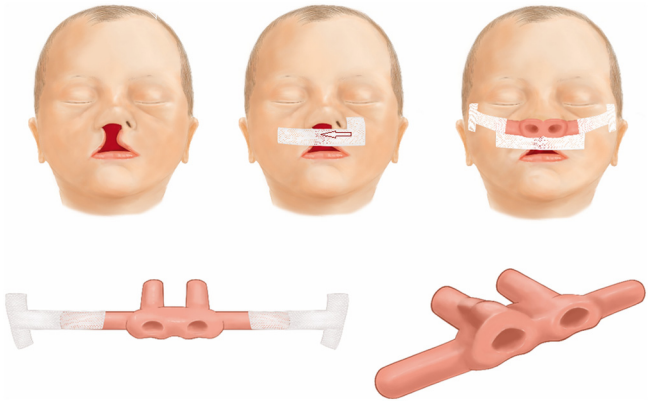

Fig. 1. The steps of treatment. Modified nostril retainer manufactured from soft acrylic material and has two wings and an air canal in each nasal stent. Soft acrylic is added to the cleft side of the retainer every week.

of the alveolar cleft for addition of the nasal stent may not be useful because the optimum timing for use of the retainer is during the first six weeks after birth.[2] With this technique, achieving laxity of the alar rim to obtain sufficient space to insert the nasal stent is less important because the modified nostril retainer is made of soft acrylic, and the tension of the soft tissue does not hinder its insertion. For this reason, nasal moulding can be started without reducing the width of the alveolar cleft.

Preoperative moulding with the modified nostril retainer involves the use of a technique similar to that used by Matsuo et al[2] and Marsuo and Hirose,[3] who used a nostril retainer (Koken Co, Ltd) for nasal moulding. Koken retainers are

* Correspondance to: Tel.: +90 5432423603; Fax: +90 02762212232.
E-mail address: serap.titiz@usak.edu.tr

https://doi.org/10.1016/j.bjoms.2019.03.014

Fig. 2. Basilar oblique view of the 2-week-old infant before treatment; he had an alveolar cleft 15 mm wide with a complete unilateral cleft lip and a bilateral cleft palate without a premaxilla that was observed on intraoral examination. His nose was short with a flat bridge as a result of the absent inferior septum and central structures.

Fig. 3. The patient with nasal moulding in place using the modified nostril retainer. The Grayson technique was used to reduce the width of the alveolar cleft. He was treated as though he had a unilateral cleft lip and palate and this caused a degree of maxillary collapse, which we ignored because he needed comprehensive orthodontic treatment.

made of silicone, however, which does not hold attachments well, and the manipulation of adhesive silicone is more difficult than that of soft acrylic.

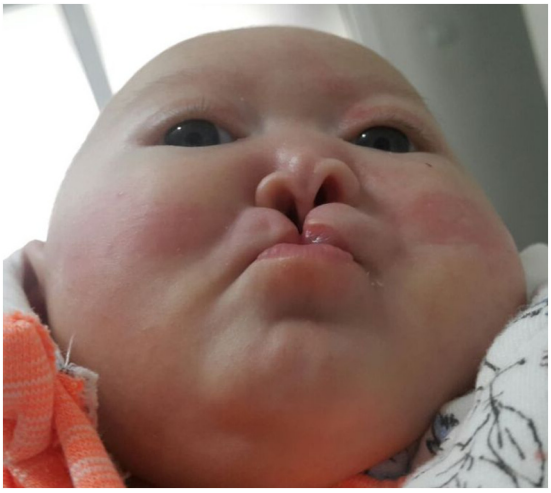

Fig. 4. Basal oblique views of the infant at the end of the preoperative treatment (8.5 weeks). The symmetry of the nose had improved, but an optimum result was not obtained because of the absence of central structures.

Use of the modified nostril retainer is easy and effective. Further studies are needed to investigate its effectiveness in patients with severe unilateral clefts of the lip and palate.

Conflict of interest

I have no conflict of interest.

Ethics statement/confirmation of patient's permission

There is no need for ethics approval. The patient's parents gave permission for the use of the material in this paper.

Acknowledgements

Wolter Kluwer provided help with language and editing.

References

1. Grayson BH, Santiago PE, Brecht LE, et al. Presurgical nasoalveolar molding in infants with cleft lip and palate. *Cleft Palate Craniofac J* 1999;**36**:486–98.
2. Matsuo K, Hirose T, Otagiri T, et al. Repair of cleft lip with nonsurgical correction of nasal deformity in the early neonatal period. *Plast Reconstr Surg* 1989;**83**:25–31.
3. Matsuo K, Hirose T. Preoperative non-surgical over-correction of cleft lip nasal deformity. *Br J Plast Surg* 1991;**44**:5–11.