

Interdisciplinary approach to treat unilateral Cleft lip and palate – A Case Report

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Abstract : Rehabilitation of cleft lip and palate usually requires a team approach which includes a Plastic Surgeon, Orthodontist, Speech Therapist, Pediatrician and a Prosthodontist. Presurgical Nasoalveolar Molding (PNAM) involve correcting lip segments, lower lateral alar cartilages, and alveolar cleft segments. In present case report we have used an extraoral appliance for the reduction of unilateral cleft lip and palate.

Key words: Presurgical Nasoalveolar Molding (PNAM), cleft lip and palate, headgear.

Introduction

Feeding plate prosthesis and Nasoalveolar Molding techniques are used to bring the cleft segments together¹⁻³. The unilateral cleft deformity is characterized by a wide nostril base and separated lip segments on the cleft side. The affected lower lateral nasal cartilage is displaced laterally and inferiorly, which results in a depressed dome, the appearance of an increased alar rim, an oblique columella, and an overhanging nostril apex. If there is a cleft of the palate, the nasal septum deviates to the non-cleft side with an associated shift of the nasal base⁴.

Case Report

A 5 day old male patient with a right sided unilateral cleft lip and palate, with no significant medical history, reported to our clinic. The face was asymmetric. There was a deviation of the nasal tip towards the left side and a deformed right nasal dome with significant flattening.

The intra- oral view revealed a complete cleft involving the anterior alveolus, hard palate and the soft palate. The unilateral nature of the cleft palate had divided the palate into a larger left half or the major segment and the smaller right half or the lesser segment.

Method

The undercuts of the cleft region in the patient model cast was blocked out with modelling wax and a clear acrylic feeding plate was fabricated. Over the primary cast, a special tray with multiple perforations were fabricated.

A NAM appliance was fabricated after 3 weeks. A hook was fabricated with acrylic to attach elastics. At one month age of patient NAM appliance was inserted in mouth. A cervical head gear was modified to incorporate an orthodontic wire. 2 Red elastics were engaged into the wire loops on the head gear.

Weekly diagnostic impressions were made in putty to evaluate the progress of the treatment. After first month lip taping was added followed by application of the nasal stent. An orthodontic wire was bent in a Swan shape and an acrylic bean shaped dome was incorporated in this nasal stent. This stent was inserted into the collapsed nose. Headgear provided us a stable anchorage.

Result

The distance between the anterior most point of gum pad and posteriorly at cleft region was measured at different time.

Discussion

Matsuo and Hirose used an intraoral acrylic appliance for approximation of the alveolar segments⁵. PNAM technique was first modified by Grayson et al⁶.

PNAM is used to approximate the alveolar cleft segments, correction of the asymmetric nasal cartilage and correction of soft tissue deformity. The nasal stent and alveolar moulding plate are adjusted regularly to correct these anomalies.⁷ The presurgical correction considerably improves surgical outcomes⁶.

This study was performed to evaluate the outcome of PNAM along with head gear in the treatment of unilateral cleft lip and palate. The reading was recorded at each week interval and it reduced. Both alveolar and nasal moulding were started at the same time irrespective of the alveolar ridges cleft distance.

Conclusion

The rehabilitation of cleft lip and palate can be achieved more esthetically with the help of PNAM techniques. Treating at early age gives the advantage of molding the paraoral structures. NAM improves nasal symmetry and palatal closure with minimal soft tissue dissection. Hence performing PNAM before primary lip closure will give psychological reassurance to patients as well as enhancing surgical outcome, reducing need for soft tissue revision surgeries later thereby reducing the overall cost of treatment⁸.

Cervical hedgegear provides more stable and constant support which will help to move the segments uniformly. Thus NAM has proved to be a simple and effective adjunctive therapy for reducing hard and soft tissue cleft deformity before surgery.

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