Presurgical orthopedic treatment in cleft lip and palate patients: series of cases

Francisco do Vale[1-6], Catarina Nunes[1-6], Vanda Conceição[7], Anabela Pedroso[7],Raquel Travassos[1-6], Inês Francisco[1-6]

1- Institute of Orthodontics, Faculty of Medicine, University of Coimbra, 3000-354 Coimbra, Portugal; 2 Laboratory for Evidence-Based Sciences and Precision Dentistry (LACBE–MDP), Faculty of Medicine, University of Coimbra, 3000-354 Coimbra, Portugal; 3 Institute for Clinical and Biomedical Research (iCBR), Area of Environment Genetics and Oncobiology (CIMAGO), Faculty of Medicine, University of Coimbra, 3000-354 Coimbra, Portugal; 4 Clinical Academic Center of Coimbra (CACC), 3000-354 Coimbra, Portugal; 5 Center for Innovative Biomedicine and Biotecnhology (CIBB), 3000-354 Coimbra, Portugal; 6 CEEMPRE, Department of Mechanical Engineering, University of Coimbra, 3030-788 Coimbra, Portugal; 7- Coimbra Hospital and University Center, Coimbra, Portugal

INTRODUCTION

Cleft lip and palate (CLP) represent the most common congenital malformation of the head and neck. Several genetic and epigenetic factors are identified in its etiology. In the first two years of life, several surgeries are performed in order to closure the lip and palate cleft and correction of the nose. In 1999, the first treatment protocol with a nasoalveolar molding (NAM) was defined. The NAM consists of a presurgical orthopedic device that allows the reduction of the size of the cleft and the modulation of the nasal cartilage.

AIM

The main purpose of this poster is to present two clinical cases that underwent NAM.

CLINICAL CASE PRESENTATION

Two patients, one with bilateral CLP and the other with left unilateral CLP, followed at the Institute of Orthodontics of the Faculty of Medicine of the University of Coimbra and the Pediatric Hospital of Coimbra were submitted to the presurgical NAM protocol. In the extra-oral physical examination, it was possible to identify prolabium eversion, lateral deviation of the premaxilla, and nasal cartilage deformity in both cases. In the intraoral examination, misalignment of the alveolar segments was observed with an interalveolar gap in case (A) of 2.1 cm on the right and 1.9 cm on the left and in case (B) with 3.5 cm on the left.

The NAMs were placed on the eighteenth day of life and the parents were instructed to put the appliances day and night, removing only to perform daily hygiene. NAM control was performed weekly for 12 weeks until the time of lip closure surgery.

Figure 1. Pre-surgical extra-oral photograph of case A

Figure 2. Pre-surgical extra-oral photograph of case B

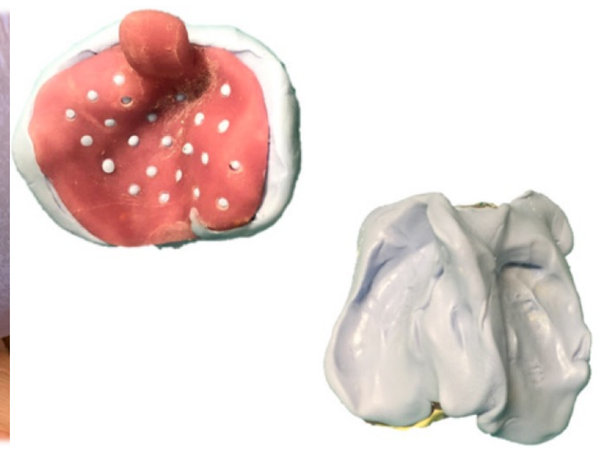

Figure 3. Impression for NAM appliance confection

Figure 4. Work model

Figure 5. NAM on Work model

Figure 6. NAM

Figure 7. NAM with a nasal stent

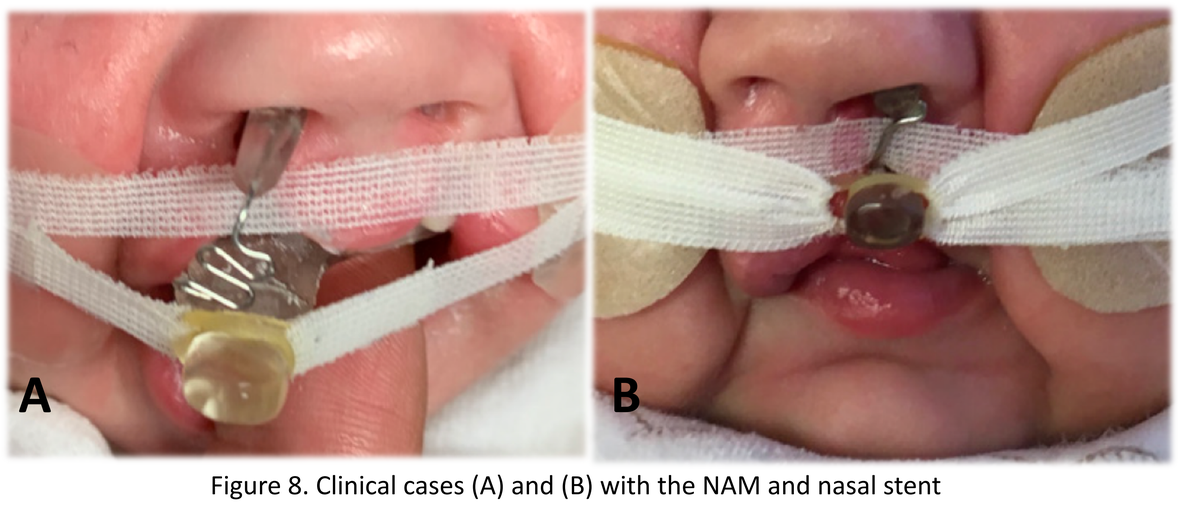

Figure 8. Clinical cases (A) and (B) with the NAM and nasal stent

RESULTS

A significant reduction of the cleft before surgery with the approximation of the cleft lip segments and the improvement of nasal projection with columella lengthening was observed in both cases.

Figure 9. Post-surgical extra-oral photograph of case A

Figure 10. Post-surgical extra-oral photograph of case B

CONCLUSIONS

Presurgical treatment with NAM in CLP patients improves surgical results which may contribute to aesthetic and functional improvement.

REFERENCES