

Long-Term Outcomes of Korat Nasoalveolar Molding in a Patient with Complete Unilateral Cleft Lip and Palate: A 16-Years Interdisciplinary Follow-up

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Introduction

To present the comprehensive interdisciplinary treatment protocol and long-term outcomes of a patient with unilateral cleft lip and palate (UCLP) using the Korat Nasoalveolar Molding (Korat-NAM) protocol from infancy through adolescence.



Figure 1:Korat-NAM :1a Korat-NAM I 1b:Korat-NAM II 1c: Korat-NAM III

Case Presentation:

A 4-day-old male infant presented with a right complete UCLP, wide alveolar and palatal cleft and severe cleft lip nasal deformity(Figure 2). Korat-NAM-I(Figure 1a). was initiated immediately after birth to approximate the alveolar segments, reduce the alveolar and palatal clefts, elevate the collapsed nasal dome, improve columellar length, and mold the nasal cartilage. Primary cleft-lip repair with nasal-floor closure and primary rhinoplasty was performed at 6-months-old(Figure 3). Korat-NAM-II (Figure 1b)was worn until primary palatoplasty at 18 months -old to maintain nasal correction, followed by Korat-NAM-III(Figure 1c) from 18 months to further preserve nasal morphology. At 7.6-year-old, a fan-shaped maxillary-expansion-appliance was used to correct mid-arch collapse in preparation for secondary alveolar bone grafting. Comprehensive orthodontic treatment with extraction of the four first premolars using fixed appliances commenced at 13.4-year-old to resolve malocclusion. Speech therapy was provided continuously throughout growth.



Figure 2: At beginning, pre KORAT NAM I



Figure 3:Post KORAT NAM I ,before Cheiloplasty



Figure 4: After Cheiloplasty



Figure 5:During orthodontic Tx



Figure 6:Posrt orthodontic Tx



Figure 7:After lip and nose revision



Figure 8:Orthopantomogram and lateral cephalograms (8b)after orthodontic Tx

Results

At 15.8-year-old, patient demonstrated a straight facial profile with good nasal-projection, satisfactory lip and nasal esthetics (Figure 7), Class I occlusion, and 1-mm overjet(Figure 6).Serial lateral-cephalometric analysis from 7.6-year-old to 15.8-year-old showed ANB angle change from 2° to -1°, reflecting mandibula- growth while maintaining acceptable skeletal and dental relationships(Figure 8b).Functional, esthetics and speech outcomes were satisfactory.

Discussion

Korat-NAM represents a critical first step in the interdisciplinary management of complete UCLP. Early correction of alveolar and nasal deformities facilitates subsequent surgical, orthodontic, and speech interventions, reducing treatment complexity and the need for secondary surgical procedures.

Conclusion

This case demonstrates that early nasoalveolar molding, integrated with coordinated interdisciplinary protocol, can achieve favorable functional and esthetic outcomes that are maintained through adolescence.

References

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