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Long term stability following maxillary distraction osteogenesis using rigid external distractor in cleft lip and palate patient: Case report

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ABSTRACT

Keywords:

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Cleft lip and palate resulting in midface hypoplasia requires distraction of the midface. Rigid External Distractor (RED) has been used successfully for correction of this hypoplasia with stable results. This case reports highlights the long term followup of stability of DO using RED in a patient with cleft lip and palate.

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1. Introduction

Maxillary hypoplasia resulting in skeletal class III malocclusion is common among patient with cleft lip and palate (25%).¹ The standard approach for correction of midface hypoplasia is maxillary advancement with or without mandibular setback. Midface distraction osteogenesis (DO) as described by Polley and Figueroa,² advances the maxilla according to Ilizarov's principles and is employed for longer advancement especially in patients with cleft lip & palate. Because of difficult stabilization along with large discrepancies and surgical scarring, the stability of maxillary advancement with Le Fort I surgery is unpredictable and is known for high percentage of relapse (4–40%).³

The purpose of this case report is to highlight the stability of midface distraction in a patient with cleft lip and palate managed with Rigid External Distractor (RED) device. The results were compared immediately after distraction and in the retention phase past 1 year.

2. Case report

16 yr old patient with unilateral cleft lip & palate (left) reported tertiary care hospital for improvement in facial aesthetics. Patient had undergone lip repair, soft tissue closure of palate and alveolar grafting previously at different time intervals. Patient had concave profile with retruded and hypoplastic maxilla. Maxillary arch was constricted with missing 14, 22 & 24 (Fig. 1). Presurgical orthodontics was initiated to decompensate and level & align the arches with 022 MBT Preadjusted edgewise appliance. After 04 months, the reverse overjet increased to 6 mm (Figs. 1 and 2) and midface distraction using RED device was planned. High level Le Fort surgery was performed under general anesthesia and traction wires were placed. RED device (Rigid External Distraction II System, Martin Medical, Tuttlingen Germany) was fixed after 3 days of surgery (Fig. 3). Distraction was initiated at a rate of 1 mm/day for 10 days. Consolidation period was kept for 3 weeks following which face mask traction at night was given for 6

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Fig. 1 – Pre-treatment.



Fig. 2 – Pre-surgical.

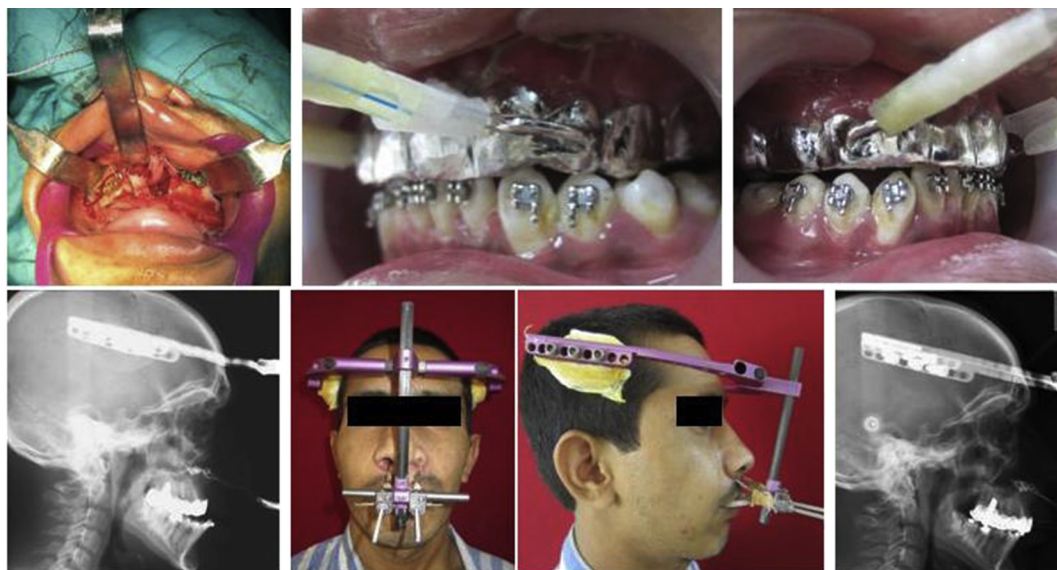


Fig. 3 – Surgical phase.

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