

## Case Report

## Orthodontic-orthognathic management with secondary lip and nose revision of unilateral cleft lip and palate individual



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## ABSTRACT

**Background:** This case report describes orthodontic, orthognathic, and secondary lip and rhinoplasty treatment of a patient with a unilateral complete lip and palate. Multidisciplinary treatment approach is used for the correction of severe crossbite, hypoplastic maxilla, large mandible, and collapsed arch along with a lip scar and deformed nose.

**Methods:** Emphasis is placed on a phased treatment approach with orthodontic treatment, orthognathic surgery, and adjunct surgical procedures carried out at phased intervals, accentuating the achievement of objectives with each phase.

**Results:** The treatment via the multidisciplinary approach brought good results and showed good retention at 3 years post-treatment.

**Conclusion:** A multidisciplinary treatment approach is the treatment of choice for cleft lip and palate case to achieve a realistic outcome.

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## 1. Introduction

A multidisciplinary treatment approach is often the treatment of choice for most patients with cleft lip and palate, requiring meticulous treatment planning and execution. Because the deformity consists of a plethora of problems such as dental malocclusion, skeletal disharmony, and soft tissue aberrations; the correction of these dentofacial deformities should consist of planning that encompasses esthetic harmony, functional efficiency, and structural durability. Hence, a multidisciplinary team approach is deemed essential to improve dental malformations, especially through orthodontic treatment and surgery.

In this case, we performed both orthodontic treatment and orthognathic surgery for correction of collapsed bite, anterior and posterior severe crossbite, and secondary lip and nose revision surgeries for the optimal correction of the dentofacial deformity in a unilateral complete lip and palate (UCLP) individual [1–5].

This article describes treatment of the aforementioned problems in a UCLP individual and emphasizes how a multidisciplinary

approach in treating individuals with this deformity can lead to an optimal level of care.

## 2. Case presentation

A 19-year-old attended the cleft and craniofacial centre of KK Women's and Children's Hospital, Singapore, with the chief complaint of irregularly placed upper front teeth, a large lower jaw, and difficulty in chewing food with his front teeth. Also, he wanted to have his lip and nose corrected. His history revealed that he was born with a UCLP, and primary cheiloplasty and primary palatoplasty were performed at an early age, with subsequent alveolar bone grafting carried out at age 12 years. His family history revealed that none of the family members had cleft deformity.

## 3. Diagnosis and etiology

On clinical examination; extraoral evaluation revealed severe concave profile, acute nasolabial angle, lip scar, asymmetrical nose, marked positive lip step, and reverse smile. Worm's-eye view showed drooping of alar cartilage, depressed nasal tip projection, unequal nostril sill, septal deviation, and alar web. Intraoral evaluation revealed collapsed upper arch with severe anterior and posterior crossbite, missing upper right lateral incisor, missing upper right first premolar, malformed upper lateral incisors, palatally blocked upper left second premolar, and palatal scarring. All lower teeth were present from the left

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second molar to the right second molar with a moderate amount of crowding. Molar relationship showed bilateral Angel's Class II molar relationship with reverse overjet of 5 mm and reverse overbite of 4 mm (Fig. 1).

Lateral cephalograph and panoramic radiograph confirmed the clinical findings with impacted bilateral lower third molars. No temporomandibular joint abnormality was noted. The alveolar bone grafted site showed no bony defect with good bony coverage (Fig. 2).

Cephalometric analysis showed a skeletal Class III pattern with hypoplastic maxilla (sella-nasion to point A (SNA),  $78.9^\circ$ ) and prognathic mandible (sella-nasion to point B (SNB),  $81.7^\circ$ ). Skeletal growth pattern was hypodivergent in nature (mandibular plane angle (MPA),  $25.1^\circ$ ) with upward and forward movement of the mandible, and lingually inclined upper incisors. The individual was diagnosed with a severe skeletal Class III growth pattern with reverse overjet and overbite and severe upper arch crowding and collapsed arch (see later Fig. 7).

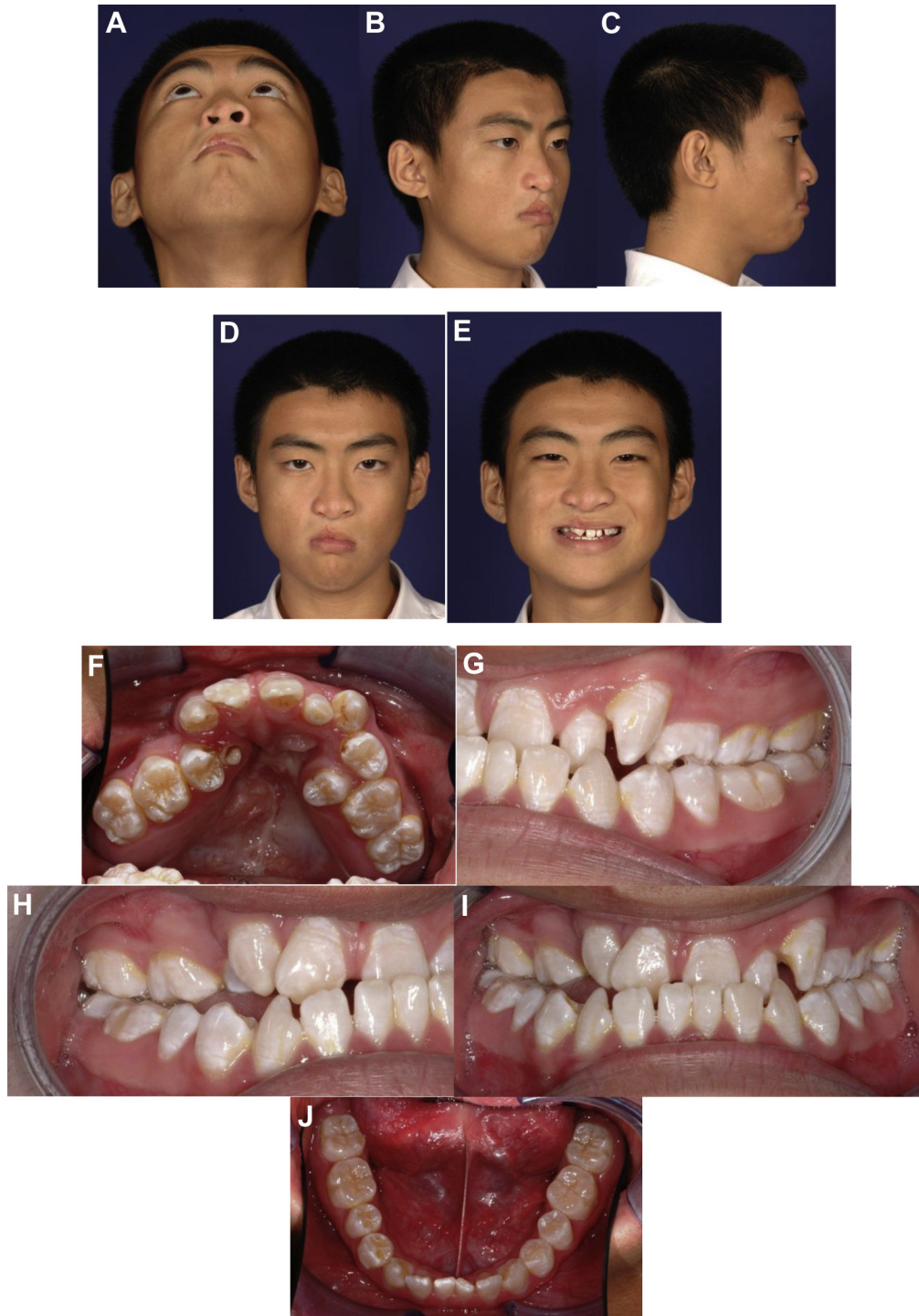


Fig. 1. (A–J) Pretreatment facial and intraoral photographs.

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