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Orthodontic camouflage treatment of skeletal class II malocclusion with severe maxillary dentoalveolar protrusion

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ABSTRACT

This case report describes the orthodontic treatment of a 14-year-old male patient who presented with prognathic maxilla, severe dentoalveolar proclination, deepbite and retained deciduous tooth. We selected headgear and fixed appliance to correct malocclusion but cooperation towards headgear was found less during treatment. So we chose orthodontic camouflage treatment to correct dentoalveolar problems without altering the skeletal base relation. The final treatment results were good and patient had improvement in esthetic and function.

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1. Introduction

Class II malocclusions are considered to be the most frequent problem encountered in orthodontic practice.[1] It occurs due to problem in skeletal and dental structures. Skeletal reasons are maxillary prognathism, mandibular retrognathism and combination of maxillary prognathic and mandibular retrognathic. Whereas dental reasons are mesialization of maxillary first molar, distally positioned lower first molar and abnormal habits.[2] Class II malocclusion can be managed in three different ways, growth modification, orthodontic camouflage and orthognathic surgery.[3] Factors which decide treatment options are timing of treatment, severity of skeletal and dental problems and cooperation of the patient.

This paper report a case of orthodontic camouflage treatment of skeletal class II malocclusion with severe dentoalveolar protrusion.

2. Diagnosis and etiology

A 14-year-old male patient presented to our clinic with a complaint of protruding upper front teeth. Dental history revealed that he had undergone endodontic treatment of lower permanent tooth and extraction of over retained upper deciduous tooth, 6 months back. On extraoral examination he was found to have symmetrical face, brachycephalic head, mesoprosopic facial form, convex profile, acute nasolabial angle, potentially competent lips and deep mentolabial

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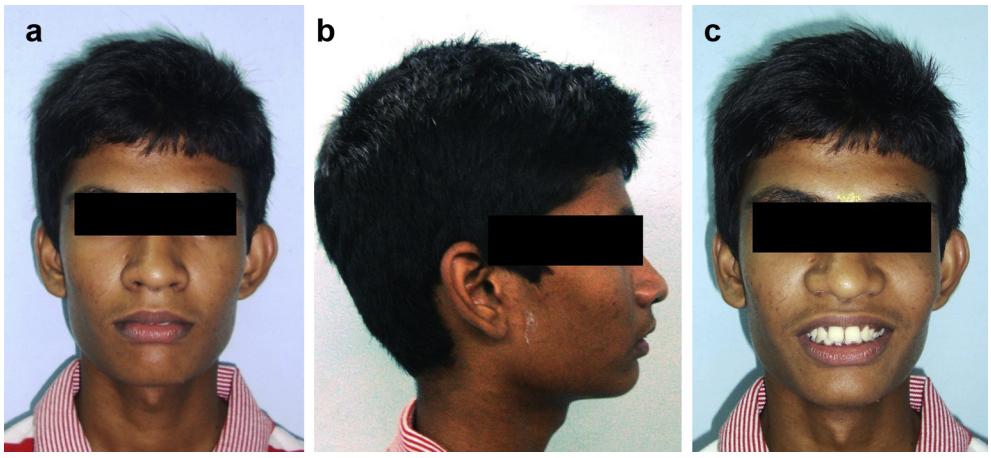

Fig. 1 – Pre-treatment extraoral (a) frontal view (b) profile view (c) smile view.

sulcus. Clinical Frankfort mandibular plane angle was average (Fig. 1). Intraoral examination revealed ¼ class II molar and full cusp class II canine relation on both sides. Over retained deciduous tooth 63 was present. He had an overjet of 14 mm and an overbite of 6 mm. Distopalatal rotation of 13 and 23 was also present. Incisal edge fracture was noted in 31 & 41 and restoration was found in lingual aspect of 41 (Fig. 2).

Standard panoramic and lateral cephalometric radiographic were obtained. The panoramic radiograph confirmed the presence of all the permanent teeth, including the unerupted third molars and endodontic treatment of 41. 13 and 23 roots were found to be distally tipped in the radiograph. Over retained deciduous tooth 63 with root resorption was also observed (Fig. 3). The lateral cephalometric analysis revealed mild prognathic maxilla (SNA 85°), orthognathic mandible (SNB 80°), low mandibular plane angle (SN-MP 22°) and protrusive incisors (Interincisal angle 103°, U1-NA 45°, 15 mm, L1-NB 29°, 8 mm) (Table 1). The case was diagnosed as a class II skeletal malocclusion due to maxillary prognathism with severe maxillary dental protrusion and deepbite (Fig. 4).

3. Treatment objectives

1. Extraction of over retained deciduous tooth 63
2. Closure of existing and extracted spaces
3. Correction of class II molar and canine relation
4. Derotate 13 and 23
5. Establishment of correct overjet and overbite
6. Level the curve of spee
7. Reduce lip strain and profile convexity

4. Treatment plan

Comprehensive fixed appliances in both arches and headgear for restriction of maxillary growth and maxillary first molar distalization were planned.

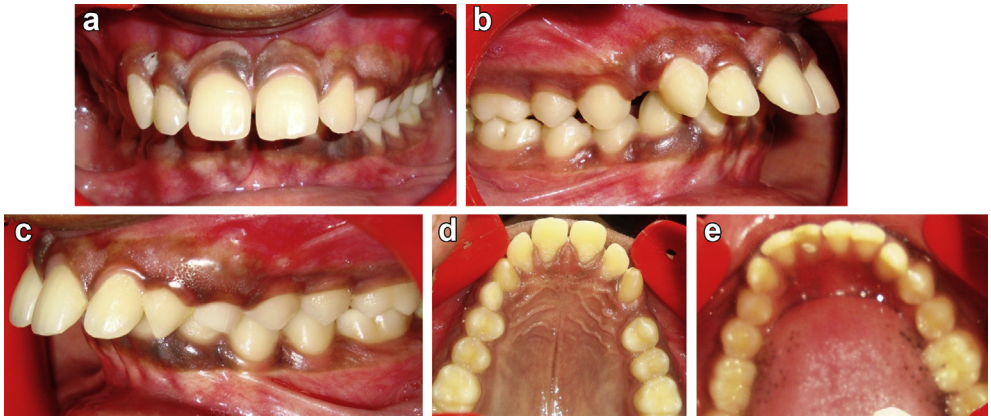

Fig. 2 – Pre-treatment intraoral (a) front view (b) right view (c) left view (d) maxillary occlusal view (e) mandibular occlusal view.

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