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Correction of Complete Maxillary Crossbite with Severe Crowding using Hyrax Expansion and Fixed Appliance

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Abstract

An 18-year-old Thai man who presented with a secondary cleft palate, maxillary hypoplasia and severe crowding was treated by rapid maxillary expansion and fixed orthodontic appliances. Initial assessment found skeletal Class III malrelationship and dental Class II malocclusion with anterior and bilateral posterior crossbites. Camouflage orthodontic treatment was planned using a rapid maxillary expansion appliance and correcting crowding with extraction all four premolar teeth. A Hyrax appliance and vertical loop arch wire were placed for maxillary arch expansion of 9.5 mm at first molars and canines, and 5.5 mm at the premolars and obtained positive overjet. Both acceptable skeletal and soft tissue relationships and satisfactory occlusion were produced. After 14 months of postoperative follow up, the occlusal result was stable and no skeletal reversals could be detected.

Keywords: Cleft palate, Rapid maxillary expansion, Hyrax appliance, Camouflage orthodontic treatment treatment

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