Alveolar Bone Grafts: The Surgical/Orthodontic Management of the Cleft Maxilla

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Abstract

The purpose of this paper is to discuss the management of the cleft maxilla with emphasis on the controversies concerning the decisions which a cleft palate team makes with limited evidence but strong beliefs in the anticipated outcomes. The orthodontist and the surgeon need to collaborate in determining the timing and sequencing of alveolar bone grafting. Currently the emphasis on secondary bone grafting has superseded primary bone grafting in its effectiveness and efficiency. Contemporary management of infants born with clefts of the lip and palate is to delay bone grafting until the early mixed dentition stage of dental development with the optimal timing being related to the development of the unerupted permanent canine. In the management of patients with cleft palate, the surgeon and the orthodontist need to evaluate the mixed dentition stage of dental development to determine the optimum timing of treatment to coincide with the most favourable eruption of the maxillary canine or the lateral incisor when this tooth is on the distal side of the cleft.

The issues which have led to controversy relate to (i) the age at which alveolar bone grafting should be performed, (ii) the type of bone graft and the site from which the donor bone will be harvested and (iii) the timing of the maxillary expansion and whether this should be performed before or after the alveolar bone graft is placed. A review of contemporary management of the palatal and alveolar cleft is discussed and illustrated in unilateral and bilateral clefts of the maxilla.


Key words: Cleft alveolus, Cleft palate, Craniofacial anomalies, Growth modification, Maxillary protraction

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