A Modified Kole’s Osteotomy for Correction of Anterior Open Bite and Macrogenia in a Cleft Patient

Manikandhan Ramanathan, BDS, MDS, FDSRCS, FPD RCS1,2  Srinivasan H. Rao, BDS, MDS3

1 Department of Cleft and Craniofacial Surgery, Meenakshi Cleft and Craniofacial Centre
2 Department of Oral and Maxillofacial Surgery, Meenakshi Ammal Dental College, Chennai, Tamil Nadu, India
3 Department of Oral and Maxillofacial Surgery, Priyadarshini Dental College & Hospital, Thiruvallur, Tamil Nadu, India

Craniomaxillofac Trauma Reconstruction 2013;6:57–60

Abstract

Keywords

► anterior subapical osteotomy
► orthognathic surgery
► Kole’s procedure

We present a modified technique to close anterior open bite as well as to correct anterior and vertical macrogenia without sacrificing the lowermost symphyseal segment, in comparison with conventional Kole’s osteotomy, which can alter the symmetric bone architecture of the chin and jeopardize the blood supply of the sandwich segments.

Surgical Method

The subapical osteotomy cuts were made between the first and second premolar (no extraction) as in diagram (►Fig. 1). The subapical osteotomy segment was repositioned superiorly as in standard Kole’s technique to correct the open bite. After a low-level genioplasty, a 5-mm wedge of bicortical bone was removed above the level of genioplasty cut as in the picture (►Fig. 2). This bone wedge was used to fill the defect below the subapical bone defect (subapical sandwich with vertical and anterior genial correction; ►Fig. 2). Because the pogonion had soft tissue excess, an intraoral symmetrical soft tissue excision also was done to improve the chin’s soft tissue profile.

This modified technique is done to close anterior open bite as well to correct anterior and vertical macrogenia without sacrificing the lowermost symphyseal segment, in comparison with conventional Kole’s osteotomy, which can alter the symmetric bone architecture of the chin and jeopardize the blood supply of the sandwich segments (►Figs. 5, 6).
Figure 1  Diagrammatic presentation of surgical procedure.

Figure 2  Intraoperative view. Arrow shows the sandwich of bone below the subapical segment.

Figure 3  Preoperative profile view.
Conflict of Interest
None.

References
1 Kole H. Chirurgische kieferorthopadie am alveolarkamm Ost. Z. Stomato Vol. 1959;56:427

Figure 4  Preoperative intraoral view.

Figure 5  Postoperative profile view.

Figure 6  Postoperative intraoral view.