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Titel des Beitrags:
Pitfalls and solutions in virtual design of nasoalveolar molding plates by using CAD/CAM technology-A preliminary clinical study.

Abstract:
Computer-assisted design and computer-aided manufacturing (CAD/CAM) technology in nasoalveolar molding (NAM) should save time and manpower and reduce family input in cases of cleft lip and palate. Intraoral casts from 12 infants with complete unilateral cleft lip and palate were taken immediately after birth (T1) and after (T2) NAM treatment, digitalized, and transformed into STL data. The infants were randomized into Group 1 (n = 6) receiving conventional NAM treatment or Group 2 receiving CAD/CAM NAM (n = 6). We analyzed the following variables by using Geomagic© software: intersegmental alveolar distance (ISAD); intersegmental lip distance (ISLD); nostril height cleft/noncleft (NHc/nc); nasal width cleft/noncleft (NWn/nc); and columella deviation angle (CDA). In both groups, all variables except NHnc and NWnc were changed significantly between T1 and T2. The analysis of the mean differences of the variables in Group 1 and 2 showed no significant differences, with a comparable incidence of clinical alterations such as skin or mucosal irritations. NAM plates can be produced virtually by using CAD/CAM technology. The CAD/CAM NAM results show no significant differences from the conventional technique. We present our clinically usable virtual CAD/CAM
workflow for producing a basic NAM plate.