Anesthetic Considerations For The Child With Oral Cleft Undergoing Repetitive Surgical Operations

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Oral cleft deformities constitute one of the most common congenital anomalies of the craniofacial region. Plastic surgeons and orthodontists perform repetitive surgical interventions for restoring speech, feeding, facial esthetics, development of the skeleton from infancy to adulthood. Unfortunately, the wound contraction and scar tissue formation have resulted in development disturbances involving tissue components such as tissue cells, blood vessels and bone. These scars lead to regional ischemia and hypoxia. Difficult airway may develop during recurrent surgical interventions. In spite of the fact that there are some monitoring tools for tissue reorganization such as laser Doppler flowmetry, tissue reflectance spectrophotometry and near-infrared spectroscopy, the golden standard is the clinical examination of the surgeon. Preoperative evaluation includes detailed anamnese for earlier operations, nutritional status, coexisting anomalies/syndromes requiring specialized anesthetic technic and collaboration with surgical team. Sedating children before transfering to operating theatre is essential. Gentle endotracheal intubation and fixating the tube should be performed in guidance of the surgical team taking care of the vulnerable tissue. Anesthesia related airway emergencies are more common in syndromic patients especially after palatoplasty. Preparation for difficult airway is needed. Anesthesia team should pay attention for monitoring of awareness and pain perception. BIS monitoring would help for preventing overuse of anesthetic drugs. Planning an effective postoperative analgesia and extubation without giving harm to the surgical site help for success. It would be better if anesthetic considerations are made patient-based because each time we have to manage a growing child undergoing different type of surgical procedure.

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Regenerative Techniques in Alveolar Cleft Osteoplasty: Concomitant use of Buccal fat pad derived cells and autogenous bone

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Recently, tissue regeneration has become promising treatment for bone defects which eliminates donor site morbidity. There are little evidences on tissue engineering application in alveolar cleft defects. The purpose of this study was to compare the outcomes of intra and extra oral autogenous bone grafts and buccal fat pad (BFP) derived mesenchymal stem cells (MSCs) with the gold standard method in human alveolar cleft bone defects. Ten patients with unilateral cleft lip and palate were selected for this study and anterior maxillary cleft defects were treated as the following 3 groups: group 1, anterior iliac crest (AIC) and collagen membrane; group 2, lateral ramus cortical bone (LRCP) and MSCs mounted on freeze-dried bone allograft (FDBA); and group 3, AIC, MSCs cultured on natural bovine bone mineral (NBBM) and collagen membrane. The amount of new regenerated bone was measured using cone beam computed tomography 6 months post operation. Higher mean amount of new bone formation in 3rd group suggests that the use of BFP derived MSCs with anterior iliac crest can increase bone regeneration capacity in alveolar cleft bone defects. In addition, there was no statistically significant difference between groups.

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