

Anesthetic Related Cancellations of Surgery in Cleft Lip and Palate Patients. A Bad Habit?

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Introduction

Cleft lip and palate (CLP) are the most common craniofacial anomaly worldwide. In most children, it is an isolated malformation. However, according to Shprintzen, 50% have one or more major abnormalities and 22% are syndromic. The isolated cleft palate (CP) has a higher incidence in presenting with an associated malformation (28-47%), while the CLP presents in 28 to 37% of the cases, and the isolated cleft lip (CL) in 8 to 13 % [1]. Historically, the surgery is planned according to the "Kilner's rule of 10": 10 weeks of age, a weight of 10 lb and hemoglobin of 10 g/dl for the CL, and 10 months, 10 kg and 10 g/dl of hemoglobin for the CP [2]. When anesthetic procedures are developed in CLP patients, there are multiple considerations that we must take into account. Among them, the degree of deformity of the lip and / or palate that could make intubation difficult, as well as airway malformations that could generate laryngospasm or bronchospasm. When all these factors are well controlled together with the experience of the team, adverse events will be significantly reduced [3]. The objective of our research is to describe the anesthetic considerations to avoid surgical cancellations in CLP patients.

Anesthetic Considerations

There are probably many anesthetic techniques described for CLP patients, however, there are a number of factors to take into account before giving anesthesia to this group of children [3]. Through the pre-anesthetic evaluation, the risk of morbidity and / or mortality related to anesthesia should be reduced. The airway, heart defects, kidney disease or other malformations need to be evaluated primarily [4,5]. Given the facial abnormalities,

there is concern regarding optimal ventilation through the mask and endotracheal tube. Although there are no useful criteria to identify a difficult airway in a child with CLP, in a recent study including 985 children, Xue et al. found a 4.77% incidence of difficult laryngoscopy in patients under 6 months of age, combined with bilateral CLP, micrognathia and to a lesser degree, left labial and alveolar clefts, which were important risk factors for difficult laryngoscopies [6]. The preoperative history should also focus on determining the presence of an upper respiratory tract infection (URTI). Patients with URTI are at risk of developing events such as bronchospasm, laryngospasm, desaturations and postintubation croup. The presence of sputum and copious secretions, nasal congestion, recent URTI (less than 2 weeks) and / or history of reactive respiratory disease, present a high risk of presenting adverse respiratory events [7]. CLP patients with recent URTI are at a higher intraoperative risk of presenting respiratory events compared to children without this condition. To minimize the risk, it is recommended to postpone the surgery for 4 to 6 weeks after the URTI has resolved, especially if the symptoms are acute. However, in the hands of experienced anesthesiologists there are no risks for substantial morbidity or mortality in these patients when the symptoms are mild [8].

Intraoperative Anesthetic Management

General Anesthesia is the most indicated technique for these cases, with non-invasive monitoring including capnography. Anesthetic induction is initiated by inhalation with Sevoflurane preferably in those cases where it is required to take a peripheral

IV line in the operating room, gaining the advantage of maintaining spontaneous ventilation through the process. Once the Peripheral IV has been secured, the anesthesiologist can proceed with intravenous induction, usually carried out with Propofol at a dose of 3-5mg/kg/dose, Fentanyl 1-2mcg/kg/dose, Rocuronium 0.6mg/kg/dose. Lidocaine at a dose of 1mg/kg/dose can also be added, which allows extending the safety margin and attenuating the response to laryngoscopy. For maintenance, the use of Sevoflurane only has been satisfactory and in cases of balanced techniques, Fentanyl has been applied at a dose of 0.5-1mcg/kg/every 40 minutes with good results observed in the hemodynamic stability and emersion of the patient. Regarding emersion, Neostigmine is usually applied in a preventive way at a dose of 0.04mg/kg/dose in combination with atropine 0.02mg/kg/dose. Acute pain management in these patients is carried out using a multimodal protocol starting in the preoperative period, coupled with regional block with local anesthetic applied by the surgeon.

Conclusion

An adequate physical examination by means of a systematic review focusing in identifying those clinical signs and symptoms that influence and / or modify our anesthetic behavior is of utmost importance in order to avoid unnecessary cancellations. Always having in mind that these patients can remain continuously with

mild upper reactive respiratory processes, related to their oronasal communication.

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