

THE MANAGEMENT OF ANESTHESIA AND SEVERE COMPLICATIONS IN DEFORMITY CHILDREN FOR HAND SURGERY

E. CASALETTI E, R. PESCE, A. ALSHERAEI, G. ALDEGHERI

Istituto MultiMedica IRCCS, Sesto S. Giovanni (MI)

SUMMARY

Purpose: *Anesthesia for children with Pierre Robin Sequence, Apert Syndrome, Treacher Collins and Epidermolysis Bullosa. Materials and Methods:* *General anesthesia: take care airway obstruction, Locoregional Anesthesia: improve postoperative analgesia and increases both patient and parent satisfaction. Conclusions:* *The anesthetic management is the detailed knowledge of problems to avoid the risk of severe complications.*

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KEY WORDS

Deformity children, locoregional anesthetic, Pierre Robin Sequence, Apert Syndrome, Treacher Collins and Epidermolysis Bullosa

BACKGROUND

Hand surgery is a very specialized field of medicine that skillfully employs the principles of both orthopedic and plastic surgeries. All deformity children need elective surgery. In our hand centre, we evaluate and monitor the care of children with Pierre Robin Sequence, Apert Syndrome, Treacher Collins, and other craniofacial anomalies; we also take care of children with Epidermolysis Bullosa.

MATERIAL AND METHODS

General anesthesia

Craniofacial abnormalities are characterized by abnormalities associated with airway obstruction (1). The management of anesthesia for patients with Pierre Robin, Treacher Collins begins with the evaluation of upper airways and a formulation

of the plan for intubation. Intubation of trachea in these infants is difficult and sometimes impossible. Several approaches to intubation of the trachea may be considered, but the alternative methods must be immediately available, as well as emergency bronchoscopy or tracheostomy maybe be needed (2). Techniques that allow spontaneous ventilation by the child until anesthesiologist is sure that the airway can be managed are recommended. Tracheotomy with local anesthesia may be required when all other attempts to intubate the trachea failed. Tracheotomy, in these children, however, may be technically demanding. Extubation after surgery should be delayed until these patients are completely awake and alert. In addition, preoperative assessment should focus on the cardiovascular system: consider the coexistence of congenital cardiopulmonary anomalies, particularly in patients with Apert's syndrome. Another important disease is epidermolysis bullosa (EB). These patients develop severe scarring. A careful airway evaluation

is essential, since these patients may have a difficult airway 2° mucous membrane and skin involvement in the area of oropharynx, face and neck (3). Patients with EB also may have limited mouth opening and neck movement as the result of scarring and contractures. Skin lesion can be painful, and some patients will be on chronic opiate medication for pain management. During intraoperative time, the patients are placed on sheepskin or cushion points. Adhesive portion of ECG leads and electrocautery dispersion plates are removed or secured using lubrication. Blood pressure cuffs are applied over multiple layers of cotton padding. Carefully trim the adhesive off the pulse oximetry probe. Anesthesia masks, endotracheal tubes, and all attached monitoring equipment are lubricated with Albolene. Venipuncture can be difficult, and the iv line are secured with Vaseline gauze.

Locoregional anesthesia

Regional anesthesia (4) can be used to improve postoperative analgesia and reduces the use of postoperative narcotics (thereby reducing postoperative nausea and vomiting, pruritus), and increases both patient and parent satisfaction. Paralleling this increasing use of regional techniques, a number of papers reporting complications have appeared in the medical literature. Some complications are related to the performance of the block technique itself; other complications are related to an inappropriate environmental condition concerning safety precautions, an inadequate monitoring of the patients (especially during the postoperative period). Regional techniques can lead to local or regional complications, general or systemic complications. Which local anesthetic should be used? Metabolism and clearance of these drugs are also reduced with a therapeutic window and an increased toxicity. The availability of new local anaesthetics as Ropivacaine and Levobupivacaine, can reduce this risk of potential cerebral and cardiac toxicity (5).

Brachial plexus anesthesia presents many advantages also in little children: efficacy, simplicity, po-

stoperative analgesia, and outpatient comfort; several authors demonstrated the value of first-line regional anaesthesia, even in very young children. The presence of a parent in the operating room is a valuable aid. Adequate postoperative analgesia and parental presence also in Post anesthesia care unit may be helpful in preventing excessive struggling and skin trauma during recovery.

CONCLUSION

The conclusions are drawn that, even if the patient with deformity represents a challenge to the anesthesiologist, a long-lasting surgical intervention, can be performed successfully. The main aspect in the anesthetic management of these patients is the detailed knowledge of all problems that anesthesiologist must solve to avoid the risk of severe complications. Craniofacial anomalies and Epidermolysis Bullosa are still a difficult challenge for surgeons and anesthetist; the medical team must have a good knowledge of the disease and excellent collaboration between each member of the team, as well as the family is mandatory.

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