Caudal Anesthesia and Natural Airway for Ambulatory Urologic Surgery in Infant with Epidermolysis Bullosa

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INTRODUCTION

Epidermolysis Bullosa (EB) encompasses a group of rare inherited disorders featuring fragile epithelium with painful bullae formation. We present our anesthetic management of this condition during ambulatory urologic surgery.

CASE REPORT

A 13 month-old male (7.6 kg) born full term with junctional type EB presents to our ambulatory surgery center for bilateral congenital chordee repair and circumcision. His EB was managed with home dressing and bathing practices. While there was no history of oral ulceration or dyspnea, exam was significant for multiple blisters overlying his hands, forearms, legs, feet, neck and face.

After oral midazolam was given, the infant was brought to the OR, prepared with extra table padding, warm ambient room temperature, an underbody forced air warmer, and bipolar electrocautery to avoid application of a grounding pad. Around his moist home dressings, modified ASA monitors were applied. Adhesives from EKG stickers were removed, a non-adhesive SPO_2 sensor was applied, and moist gauze was inserted under the NIBP cuff.

After sevoflurane induction with a lubricated face mask, a peripheral IV was started atraumatically and secured with wet gauze ties. All emergency airway equipment was available warmed and lubricated. A propofol infusion was started (50 mcg/kg/min) and IV ketamine (10mg) was administered. After gentle antisepsis, a single-shot caudal injection of 7mL 0.25% bupivacaine and 1 mcg/kg clonidine was administered in the lateral position, while maintaining spontaneous ventilation. After careful repositioning, eyes were protected with lubricant and a moist towel for closure and a pre-lubricated nasal cannula was applied for capnography. The infant maintained spontaneous ventilation without airway intervention throughout the 1.5 hour surgery and the infant was discharged home after an uneventful PACU recovery.

Figure 1: *Meticulous care in positioning and placement of ASA monitors is essential to prevent further mucocutaneous injury.*

Figure 2: *Caudal anesthesia provides satisfactory intra and post-operative analgesia, permitting avoidance of a fragile airway.*

DISCUSSION

Though rare, children with EB require frequent anesthetics and thoughtful perioperative care, despite sparse literature describing EB anesthetic considerations (1). The disease course can be life-threatening early in infancy and clinical features include mucocutaneous blisters (skin, conjunctival, oral, respiratory), dental caries, muscle contractures, and urogenital abnormalities. During preoperative evaluation, the severity and management of skin lesions and the presence of airway involvement must be identified. Primary goals include maintenance of skin, mucous membrane integrity, careful airway manipulation, prevention of heat and fluid loss, and effective analgesia. In this case, caudal anesthesia offered satisfactory intra- and post-operative analgesia and permitted avoidance of a potentially fragile airway, which is favorable in the ambulatory setting.

LESSONS LEARNED

- EB is a rare condition featuring mucocutaneous bullae.
- Anesthetic goals include avoidance of mucocutaneous injury, temperature fluctuation as well as safe airway management and effective analgesia.
- Regional anesthesia can permit airway avoidance, even in infants.

REFERENCE

1. Narejo AS.. Anesthetic consideration in dystrophic epidermolysis bullosa. Saudi J Anaesth. 2016 Jan-Mar;10(1):110-2.