Challenging Airway Secondary to Cutaneous Extension of Group B Strep Causing Obstructing Bullae in a 33-week Neonate

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Introduction

Group B streptococcus (GBS) infection in neonates most commonly causes meningitis and/or sepsis. Risk factors for GBS infection include hospitalization, prior treatment with antibiotics and prematurity. A rare complication of GBS septicemia is development of purpura fulminans (PF) which is an acute and frequently fatal disorder that is characterized by a sudden onset of progressive cutaneous hemorrhage and necrosis due to dermal vascular thrombosis and disseminated intravascular coagulation (DIC).

Case Report

A former 25 weeker presented to our institution at 34 weeks post-conceptual age with concern for necrotizing fasciitis. He became septic at an outside hospital and treated with a dopamine infusion and given multiple transfusions of platelets, FFP and PRBC. He then developed large purpuric, bullous lesions scattered over the neck, penis, feet, and hands. Subsequently, the patient was transferred to our facility for higher level of care and potential surgical intervention for what was thought to be necrotizing fasciitis. The patient remained on pressor support and was treated with a complex antibiotic regimen. After being stabilized, he was brought to the OR for excisional debridement of 3% TBSA wounds to the face and neck. At the time of presentation to the OR the patient was intubated with a 3.0 uncuffed endotracheal tube placed prior to development of the bullous lesions. During the course of the surgery there was extensive manipulation of the patient’s head and neck resulting in unintended extubation. The patient was subsequently re-intubated with difficulty secondary to airway distortion by the bullous neck lesions and edematous vocal cords. Surgery was completed and the patient was transferred to the NICU for continued antibiotic therapy.

Discussion

The typical presentation of GBS infection in neonates is of sepsis and/or meningitis and frequently occurs early after birth. A rare complication of GBS infection is Purpura Fulminans which can have a profound impact on the anesthesiologist providing care for these patients. The skin lesions are characterized by areas of ecchymosis with progression to hemorrhagic purpuric bullae. This is a result of a combination of disordered hemostasis involving the protein C system and inflammatory mediated pathology. This presents multiple challenges to the Anesthesiologists treating these patients. The coagulopathy must be corrected with early administration of activated protein C concentrate. Additionally, the patient may need heparin, Lovenox, AT III, TPA and plasmapheresis. In the case presented above the location of the lesions as well as the necessity of debridement created a challenging intubation due to edema of the airway. Prevention of GBS infection in neonates is of the utmost importance in avoiding potentially disastrous complications such as PF and the anesthesia team plays a vital role in managing patients across the spectrum of patient populations from mother to neonate.

References


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