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IMAGES IN CLINICAL PRACTICE

SKIN LESIONS IN AN EXTREMELY LOW BIRTH WEIGHT NEWBORN WITH *STAPHYLOCOCCUS AUREUS*

Nádia Raquel da Silva Santos[1], Sofia Soares Fatela de Sousa Moeda[2], Ana Sofia Medeiros Esteireiro[3], Raquel Alexandra Barbosa de Nunes Gouveia Lopes[4], Maria da Graça Rocha Oliveira[4].

[1]Department of Pediatrics, Hospital do Espírito Santo de Évora, EPE, Évora, Portugal,
[2]Department of Pediatrics, Hospital Beatriz Ângelo, Loures, Portugal,
[3]Department of Pediatrics, Hospital de Caldas da Rainha, Centro Hospitalar do Oeste, EPE, Caldas da Rainha, Portugal,
[4]Neonatology Unit, Department of Pediatrics, Hospital de Santa Maria, Centro Hospitalar Universitário Lisboa Norte, EPE, Lisbon, Portugal.

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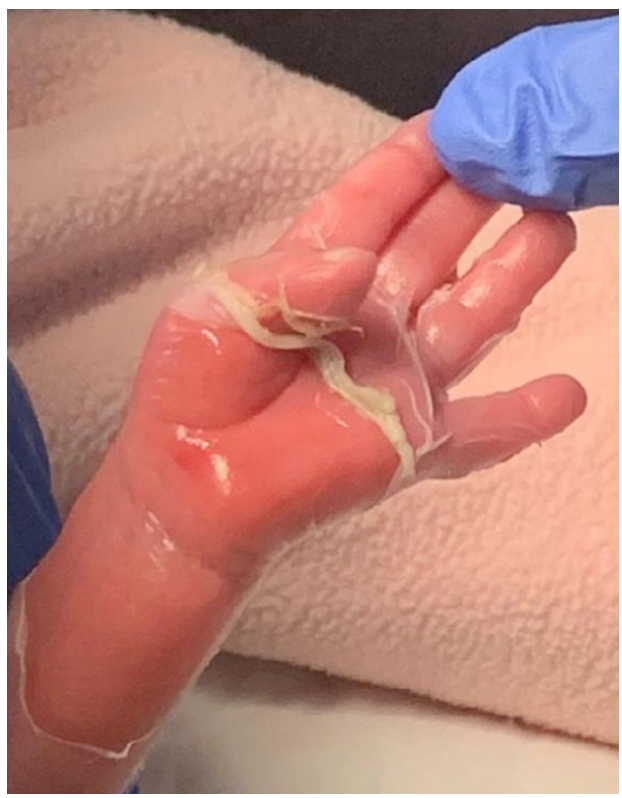
A male newborn born of non-consanguineous marriage was delivered by a lower segment cesarean section at 28 weeks gestational age due to chorioamnionitis after a premature rupture of the membranes at 24 weeks of gestation. The mother received antibiotics and antenatal corticosteroid therapy for fetal maturation. The prenatal serological screening for rubella, toxoplasmosis, hepatitis B, syphilis and HIV was negative in the mother and antenatal ultrasounds in the mother at the 12th week, 22nd week and antepartum were normal. Birth weight of the newborn was 900g, and Apgar scores were 3, 7 and 8 at 1, 5 and 10 minutes, respectively. He required orotracheal intubation and positive pressure ventilation. He was admitted at the neonatal intensive care unit (NICU) of a tertiary hospital for invasive ventilation, which was maintained for 10 days, and for antibiotic therapy. On the 34th day of life (33 weeks of gestational age), a small erosion with yellow crusts was noted on the columella, related to the nasal prongs of non-invasive ventilation. Hours later, he developed diffuse erythema on the left arm and hand, where IV access was attempted before, which subsequently led to skin shed from the glove area (Figure 1). *Nikolsky's* sign was positive. Mucous membranes were spared. He was started on oral linezolid (in the absence of IV access) and analgesics (opioids). Wound care was managed with soft silicone bandages. Over the first 24 hours, there was a progression of the bullous lesion to the inguinal folders, perianal region and limbs, and all of them peeled off in sheets. Simultaneously, the nasal plaque became larger and exudative with honey crusts, probably due to the nasal mask of continuous positive airway pressure ventilation (Figure 2). For this reason, he required invasive ventilation. He remained hemodynamically stable and without fever. Skin culture obtained from the nose lesion was positive for methicillin-susceptible *Staphylococcus aureus* (MSSA) and antibiotic therapy was changed to intravenous flucloxacillin. Blood culture and septic screen reports were negative. No further skin lesions or desquamation developed after two days of intravenous antibiotic therapy. After three days, the newborn developed respiratory distress and the chest radiograph showed right lung consolidation. *Klebsiella oxytoca* was isolated in the respiratory culture, and intravenous antibiotic

Figure 1. Diffuse erythemaon the left arm and hand which led to skin shed from the glove area



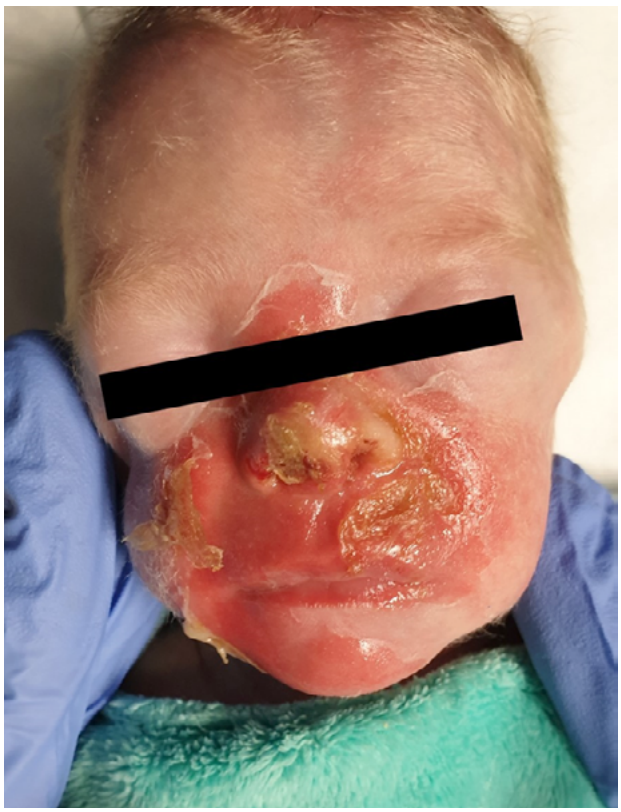
CONTACT Nádia Raquel da Silva Santos

Email: nadiarssantos@gmail.com

Address for Correspondence: Nádia Raquel da Silva Santos, Hospital do Espírito Santo de Évora, EPE, Largo do Sr. da Pobreza, 7000-811 Évora, Portugal.

therapy was replaced to meropenem and linezolid. The skin healed without any scars in a week (Figure 3). In the NICU, the closest neonate also had MSSA infection with cutaneous pyogenic abscesses in the upper limbs and endocarditis.

Figure 2. Large and exudative nasal plague with honey crusts (probably due to hte nasal mask of contineous positive airway pressure ventilation)



What were the skin lesions?

Staphylococcus aureus can cause a spectrum of skin conditions ranging from localized impetigo to generalized cutaneous involvement with systemic illness, such as Staphylococcal Scalded Skin Syndrome (SSSS). This is a bacterial toxin-mediated skin disorder and typically arises from a focus of infection, as for instance impetigo, iatrogenic wounds and other infections (omphalitis, pneumonia, pyomyositis, septic arthritis, or endocarditis).[1,2] SSSS affects mainly children younger than five years old[2,3] but rarely premature newborns.[4] It is caused by exfoliative toxins A and B of *S. aureus* and characterized by blistering of the skin. Blood and blister cultures are usually sterile.[3] Differential diagnosis includes burns, drug-induced toxic epidermal necrolysis, toxic shock syndrome, pemphigus and herpetic lesions. In newborns, one should also consider cutaneous candidiasis and other blistering disorders such as epidermolysis bullosa, epidermolytic ichthyosis, and bullous mastocytosis.[2] SSSS represents a dermatology emergency in the neonatal period and requires prompt and adequate treatment with intravenous antibiotic therapy and supportive care.[4] Most patients recover fully without significant scarring, disfigurement, or other long-term sequelae. However, it can present as severe and fatal, and complications include secondary infection (e.g. pneumonia), septicemia, dehydration and hypothermia.[5] Isolation measures, such as hand hygiene and protection equipment, are essential in order to prevent outbreaks of SSSS in newborn nurseries and intensive care units.[4]

Compliance with ethical standards

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Conflict of Interest: None

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