

Erythematous Plaque on the Back of a Newborn

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An 8-day-old female infant presented with a mass on the lower back that had been present since birth. The patient was well appearing, alert, and active. Physical examination revealed a 6×5-cm, erythematous, ill-defined, indurated plaque on the lower thoracic back. There was no associated family history of similar findings. According to the mother, the patient was feeding well with no recent fever, irritability, or lethargy. The patient was born via elective induction of labor at term due to maternal intrauterine infection from chorioamnionitis. The birth was complicated by shoulder dystocia with an Erb palsy, and she was hospitalized for 5 days after delivery for management of hypotension and ABO isoimmunization and to rule out sepsis; blood cultures were negative for neonatal infection.

WHAT'S THE DIAGNOSIS?

- a. bacterial cellulitis
- b. cutis marmorata
- c. infantile hemangioma
- d. sclerema neonatorum
- e. subcutaneous fat necrosis

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The authors report no conflict of interest.

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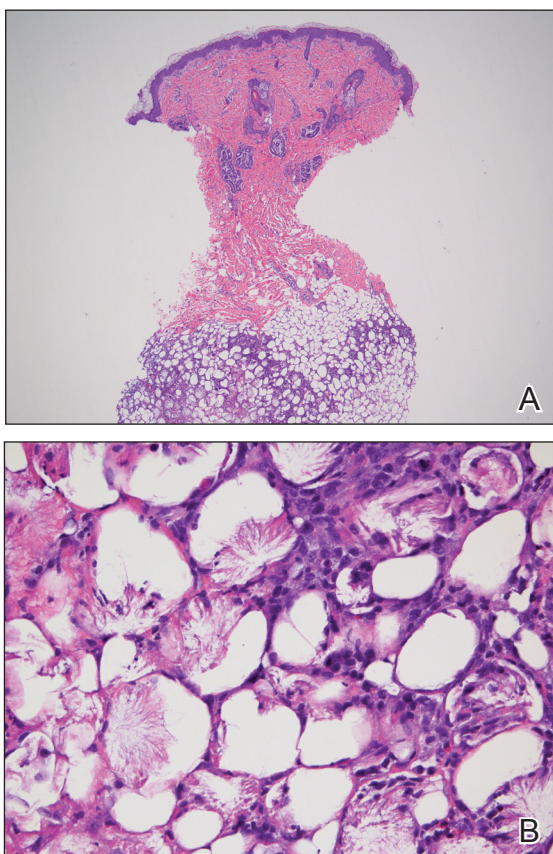
THE DIAGNOSIS: Subcutaneous Fat Necrosis

Subcutaneous fat necrosis of the newborn is a benign and self-limited condition that commonly occurs in term to postterm infants.¹ However, it is an important diagnosis to recognize, as the potential exists for co-occurring metabolic derangements, most commonly hypercalcemia.¹⁻⁴ Subcutaneous fat necrosis of the newborn is characterized by a panniculitis, most often on the back, shoulders, face, and buttocks. Lesions commonly present as erythematous nodules and plaques with overlying induration and can appear from birth to up to the first 6 weeks of life; calcification can be present in long-standing cases.² Biopsy is diagnostic, showing a normal epidermis and dermis with a diffuse lobular panniculitis (Figure, A). Fat degeneration, radial crystal formation, and interstitial histiocytes also can be seen (Figure, B).

Patients with suspected subcutaneous fat necrosis should have their calcium levels checked, as up to 25% of

patients may have coexisting hypercalcemia, which can contribute to morbidity and mortality.² The hypercalcemia can occur with the onset of the lesions; however, it may be seen after they resolve completely.³ Thus, it is recommended that calcium levels be monitored for at least 1 month after lesions resolve. The exact etiology of subcutaneous fat necrosis is unknown, but it has been associated with perinatal stress and neonatal and maternal risk factors such as umbilical cord prolapse, meconium aspiration, neonatal sepsis, preeclampsia, and Rh incompatibility.¹ The prognosis generally is excellent, with no treatment necessary for the skin lesions, as they resolve within a few months without subsequent sequelae or scarring.^{1,2} Patients with hypercalcemia should be treated appropriately with measures such as hydration and restriction of vitamin D; severe cases can be treated with bisphosphonates or loop diuretics.⁴

Cutis marmorata presents symmetrically on the trunk and may affect the upper and lower extremities as a reticulated erythema, often in response to cold temperature. Lesions are transient and resolve with warming. The isolated location of the skin lesions on the back, consistent course, and induration is unlikely to be seen in cutis marmorata. Infantile hemangiomas present several weeks to months after birth, and they undergo a rapid growth phase and subsequent slower involution phase. Furthermore, infantile hemangiomas have a rubbery feel and typically are not hard plaques, as seen in our patient.⁵ Patients with bacterial cellulitis often have systemic symptoms such as fever or chills, and the lesion generally is an ill-defined area of erythema and edema that can enlarge and become fluctuant.⁶ Sclerema neonatorum is a rare condition characterized by diffuse thickening of the skin that occurs in premature infants.⁷ These patients often are severely ill, as opposed to our asymptomatic full-term patient.



Subcutaneous fat necrosis. A, Histology of a punch biopsy showed a normal epidermis and dermis with a diffuse lobular panniculitis (H&E, original magnification $\times 4$). B, Fat degeneration, radial crystal formation, and interstitial histiocytes also were seen (H&E, original magnification $\times 40$). Images courtesy of Stephen Somach, MD (Cleveland, Ohio).

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