Our Dermatology Online

Case Letter

Strange febrile nodular rash in an infant with muscle atrophy: Candle syndrome to be evoked

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Sir,

CANDLE syndrome is a recently described autoinflammatory syndrome. It is characterized by the onset of recurrent fever in early childhood, skin lesions and multi-systemic inflammatory manifestations [1]. The skin lesions made mainly of nodules and nodes with its lipodystrophic evolution represent a key element for the diagnosis. We report a case of skin lesions revealing a histopathologically confirmed Candle syndrome.

An 8-month-old infant, the first of a twin pregnancy, born to healthy, non-consanguineous parents. At the age of 3 months, he had developed nodular skin lesions of the trunk associated with unexplained recurrent episodes of fever. Three months later, the infant was hospitalized for a pulmonary infection with deteriorating general condition and hypo-reactivity. During his hospitalization, we noted the development of nodular lesions of the trunk. General examination found a febrile infant at 40 years of age, muscle atrophy (Fig. 1a) and joint stiffness more marked at the cervical level. His height and weight were below the third percentile. Physical examination revealed pale skin with firm erythematoviolet nodular skin lesions distributed mainly on the trunk, thighs, and arms (Figs. 1b and 1c), a prominent abdomen, hepatomegaly, contractures of both knees, and hyper-extension of the head with bilateral mobile inguinal adenopathies.

Blood tests revealed microcytic hypochromic anemia at 7 g/dl, schyzocytes present in the blood smear, and a correct white blood cell count. The haptoglobin level was low. The C-reactive protein level was very high. Increased erythropoiesis on bone marrow examination, mildly increased liver enzymes and increased triglycerides.

TAP scan revealed bilateral inguinal adenopathies, homogeneous hepatomegaly, pulmonary interstitial syndrome, and diffuse brain atrophy without basal calcifications.

Skin biopsy showed a dense infiltrate of the dermis forming nodules composed of mononuclear cells with large reniform nuclei. Some myeloid cells and immature neutrophils were found. CD68 and MPO were positive.

The symptoms were complicated by drug-refractory septic shock with DIC, and the infant died.

Candle syndrome results from dysfunction of the proteasome system responsible for the cell's inability to rid itself of protein waste [2].

Proinflammatory substances increase and immature myeloid cells are rapidly mobilized from the bone marrow, contributing to an atypical skin infiltrate [3].

Candle syndrome usually begins in the first months of life with unexplained fever and characteristic skin lesions [3]. They are of 3 types: Perniotic lesions in the form of edematous red patches on the nose, ears, or fingers, perioral or periorbital edema, or purplish nodules on the trunk and upper extremities [4].

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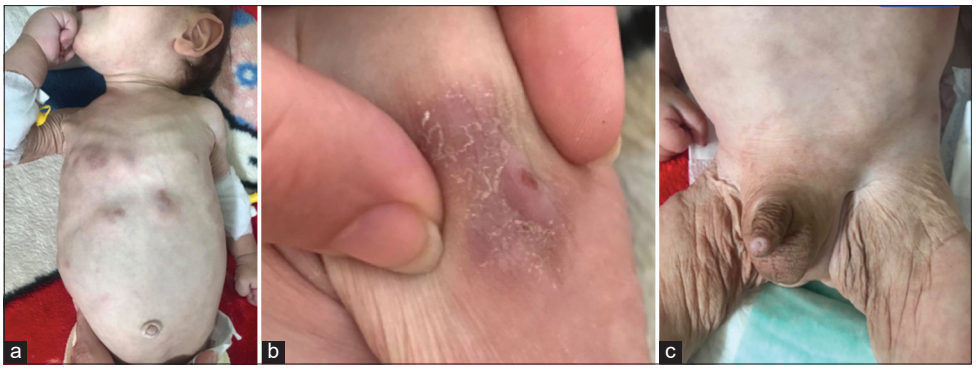

Figure 1: (a) Muscle atrophy with abdominal swelling, and multiple subcutaneous nodules. (b) Large plaque of 3cm long erythematovioline with a fine scaly surface of firm consistency opposite the BCG site. (c) Abdominal swelling with an appearance of spindly limbs, obvious muscular atrophy of the thighs.

Furthermore, as in our clinical case, an overlap of autoimmune, infectious inflammatory and lymphoproliferative manifestations can be observed to varying degrees. Growth retardation, muscle wasting and lipoatrophy, hepatosplenomegaly or generalized lymphadenopathy are also important factors [5].

Our patient's mental retardation was explained on imaging by diffuse brain atrophy. The presence of fever, lymphadenopathy, and hepatomegaly in our patient necessitated the exclusion of possible underlying malignant diseases such as leukemia or lymphoma. Bone marrow examination and lymph node biopsy excluded these disorders [6].

In addition, mononuclear interstitial infiltrate with large reniform nuclei, immature neutrophils, and positivity for CD68 and MPO have been reported as pathognomonic for Candle syndrome [7].

Consent

The examination of the patient was conducted according to the principles of the Declaration of Helsinki.

The authors certify that they have obtained all appropriate patient consent forms, in which the patients gave their consent for images and other clinical information to be included in the journal. The patients understand that their names and initials will not be published and due effort will be made to conceal their identity, but that anonymity cannot be guaranteed.

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