A Case Study of Cutaneous Mastocytoma in a 9-Month-Old Infant

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Abstract

This is a case study of a 9 month old infant presenting with a blistering lesion on the left foot previously misdiagnosed as a benign birthmark. Pathology revealed cutaneous mastocytoma which required no further intervention.

Case Presentation

Patient: 9-month-old infant female

History of Lesion: Skin lesion located on the foot which arose at age three days. Twice the lesion formed a bulla that ruptured clear fluid. The lesion did not cause pain or itch, and no history of purulent discharge. The lesion was previously diagnosed as a birthmark by the pediatric care provider..

Medical History: No topical or oral medication had been used. Growth of the lesion was at the same rate as the foot. The patient and family history was unremarkable, and the patient was up to day on immunizations.

Physical Examination: Revealed a solitary 2 cm x 1 cm minimally-elevated erythematous plaque with central shiny skin to the dorsum of the left foot with no active bulla (Figure 1). No other abnormalities were noted during a full skin exam. Shave biopsy was performed and sent to a children's hospital for expert consultation.

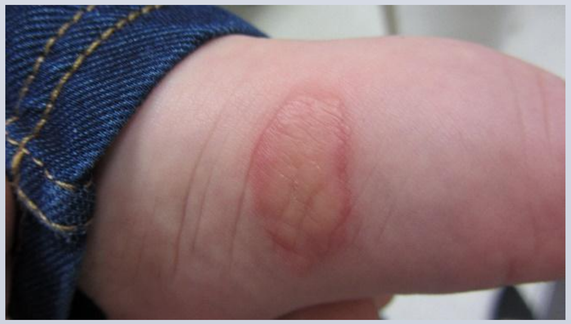

Figure 1 Erythematous plaque on left foot. Photo taken in clinic.

Histopathologic Diagnosis: Mastocytoma

Microscopic Findings

Epidermis: Acral skin with elongation of the rete ridges

Mid-dermis and within the superficial: Proliferation of monotonous cells with round to oval nuclei, mild hyperchromasia, inconspicuous nucleoli and abundant pale, faintly granular, cytoplasm

Deeper dermis: The cells presented as single cells and thin trabeculae. Mitotic figures were inconspicuous. The cells showed strong, diffuse membranous positivity for C-KIT (CD117) and were negative for S100 and MARTI1. The lesion extended to the peripheral and deep margins.

Outcome

Treatment: After diagnosis was confirmed, no further intervention was required. Nursing interventions included counseling and reassurance. Mother was advised to avoid rubbing the area. Over time the lesion is likely to flatten, the frequency of blistering episodes will decrease, and the lesion is likely to fully regress around the onset of puberty.

Characterization of the Diagnosis of Mastocytoma

Mastocytosis is a group of disorders characterized by excessive mast cell accumulation in one or multiple tissues. It is subdivided into two forms: cutaneous mastocytosis (CM) which is limited to the skin, and systemic mastocytosis (SM) which involves other organs. The World Health Organization further subdivides CM into four subtypes: urticaria pigmentosa (UP), diffuse cutaneous mastocytosis, solitary mastocytoma, and telangiectasia macularis eruptiva perstans.

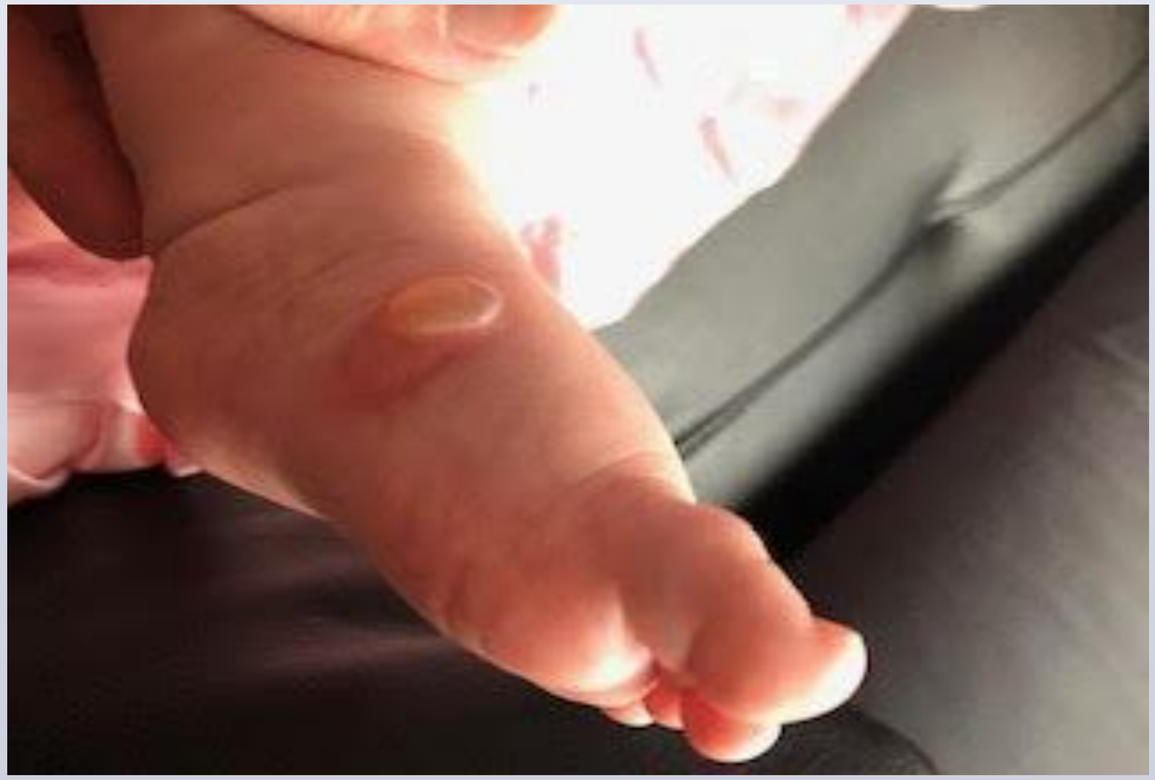

Figure 2 Bulla on left foot. Photo taken by mother.

An Overview of Mastocytosis

Symptoms of CM in Children: Include macules, papules, and nodules. Erythema, edema, and bulla formation can occur, and are associated with pruritus and dermographism.

Most Common CM: UP often mistaken for freckles

Frequency of Pediatric CM: 1 in 1000 and are commonly diagnosed at age two.

Techniques for Diagnosis and Treatment

Techniques for Diagnosis

- **Biopsies:** Difficult with pediatric patients to tolerate
- **Darier Sign:** Clinical test that is 95% in positive CM cases

Treatment

- Monitor lesion and address purulent discharge or ruptures.
- In case of pruritus or unacceptable cosmetic appearance, Techniques for Diagnosis and Treatment
- oral antihistamines and topical immunomodulators can be prescribed such as Tacrolimus and pimecrolimus.

Prognosis

Prognosis is good!

10% patients show complete resolution

70% patients show significant improvement in symptoms by age 10

Reference

Jellerichs, B., & Kim, M. (2020). A case study of cutaneous mastocytoma in a 9-month-old infant. *Journal of the Dermatology Nurses' Association*, 12(4), 168-169.