A Male Infant with Bumps on His Feet

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A 7-month-old male infant was referred by his pediatrician for evaluation of “two small bumps on the feet” since a month before. The size of these lesions reportedly had not changed in the past month, and they did not seem to bother the patient.

The patient was born full-term with no complication, was at the 25th percentile for birth weight, and was average for height and head circumference. The patient and his mother were discharged from hospital after 2 days. The patient was solely breastfed up until 2 months of age, at which point mother added formula.

He was noted to have a small umbilical hernia at 1 month and was diagnosed with bronchiolitis at 4 months. At 5 months, he was diagnosed with atopic dermatitis by his pediatrician. At about the same time, he also developed a small red papule on the right abdomen, consistent with infantile hemangioma. The patient’s vaccinations were up to date. Despite the underlying atopic dermatitis and hemangioma, the patient had developed normally and reached all the milestones appropriately.

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Figure 1. The bumps on the feet were solitary, 0.5 cm in diameter, flesh-colored, soft, symmetrical papules on the inferomedial aspect of the bilateral feet. (Source: Elizabeth Yen, MD)

For diagnosis, see page 18.
There is a history of asthma in paternal grandmother and seasonal allergy in several family members on the maternal side. Atopic dermatitis was reported in the patient’s mother and older sibling. The sibling, a 20-month-old sister, reportedly had also developed hemangioma on her temple. Family history noted no use of smoking, drinking alcohol, or drug use. The rest of the family and social history is noncontributory.

Physical examination revealed a healthy, well-developing, and interactive boy. Moderate eczematosus skin rash was noted on the head, face, and flexors of upper and lower extremities. Hemangioma on the right abdomen was slightly enlarged since the last visit, presenting as 6- to 10-mm erythematous superficial papules coalescing to a linear plaque of 5.5 cm x 1.5 cm. The bumps on the feet were solitary, 0.5 cm in diameter, flesh-colored, soft, symmetrical papules on the inferomedial aspect of the bilateral feet. Patient did not cry or seem to be in pain when both papules were palpated (see Figure 1, page 16, and Figure 2).

**Figure 2.** The patient did not cry or seem to be in pain when both papules were palpated. (Source: Elizabeth Yen, MD)
Based on the clinical presentation and examination performed, it was concluded that the patient had the rare yet benign condition known as pedal papules of infancy. This report aims at reviewing this condition, highlighting the benign nature of pedal papules of infancy, and urging medical practitioners to avoid unnecessary management and treatment.

Pedal papules in adults were first recognized in 1968 by Shelly and Rawnsley.\(^1\) This condition can develop in childhood but usually develops later in life. Childhood and adult forms may be asymptomatic but are often tender. They are termed “piezogenic pedal papules.” In 1990, Larralde de Luna\(^2\) provided the first report of pedal papules in neonates and infants. Unlike piezogenic pedal papules, pedal papules of infancy are non-tender and asymptomatic. Other names that have been used in the literature include infantile pedal papules;\(^3\) bilateral congenital adipose plantar nodules;\(^4\) precalcaneal congenital fibrolipomatous hamartomas;\(^5\) benign anteromedial plantar nodules of childhood;\(^6\) congenital piezogenic-like pedal papules;\(^7\) and bilateral congenital fatty heel pads.\(^8\)

Pedal papules of infancy usually are present since birth; with more subtle ones, they are discovered in infancy. The papules are usually symmetrical, although cases of asymmetrical papules have been noted.\(^9\) They are usually soft, mobile, flesh-colored, and nontender. They are about 0.5 cm to 1 cm and increase paralleling the infant’s growth. This condition tends to be sporadic in occurrence, although there are reports of familial cases.\(^10,11\) A male predilection has been reported throughout the literature.

The etiology of these papules is unknown, although it is believed that these papules are resulted from fat herniation through a tear in the dermis. It has been postulated that some individuals have a greater tendency to develop tears in the fibrous trabeculae of the heel pad, combined with degeneration of collagen and elastin fibers.\(^1\) Another theory predicts that these papules are secondary to incomplete regression of fetal tissue because the fetal feet do not show any evidence of hypertrophy in the hypodermis area.\(^12\)

Due to its uncommon nature, some physicians opt to biopsy the papule. Literature review reveals that biopsy of these papules usually gives a benign picture with the presence of mature adipose tissue in the mid- and reticular dermis, surrounded by collagenous, nonhypertrophic, fibrous septa.\(^3\)

Infants with pedal papules grow normally with no delay in the developmental milestones, especially with standing and walking. The natural history of this condition is unknown; cases in the literature mainly focus on the first years of infants’ lives. Few reports mentioned the involution and absence of these papules when children reach 2 and 3 years, although one reported persistence of these papules into early adolescence. Regardless, due to the consistency of the benign nature of this condition from the histology and developmental course points of view, it is not necessary to biopsy or even operate on the papules and render the infants to possible complications.

**CONCLUSION**

To date, this condition has been cited as uncommon or rare; however, a study done by Greenberg and Krafchik\(^3\) revealed incidence rates of 5.89% and 39.4% in newborns and infants, respectively. As more literature is published, it is more likely that physicians will recognize the presence of papules, especially the more subtle ones, in newborns. Earlier recognition of these papules will prevent any psychosocial and financial strains that parents and families may go through.

Upon recognition, parents must be immediately counseled regarding the benign nature of this condition and reassured of their children’s well-being. Periodical observation and follow-up by pediatricians will provide the ongoing assurance to parents and families.
REFERENCES