QUIZ SECTION

MJS PUBLISHING

Recurrent Red Papules in a Satellite Pattern Following Laser Treatment: A Quiz

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A healthy 10-year-old boy presented to the dermatology clinic with a 1-month history of a solitary red nodule on his right infrascapular region. It was asymptomatic but bled easily. He denied any history of trauma. The papillary nodule measured 7 mm in diameter (Fig. 1). A diagnosis of pyogenic granuloma was made, and it was treated with Nd: YAG laser. Two weeks later, the nodule sloughed, leaving hyperpigmentation behind. However, two months later, numerous bright red papules appeared around the scar. These papules ranged from 0.5 to 2 mm in diameter and were arranged in a satellite pattern (Fig. 2). Hospital level project of Shanghai Children's Hospital (2020YLYM01).

Fig. 1. Primary solitary red papillary nodule with a diameter of 7 mm.

What is your diagnosis?

1: Recurrent pyogenic granuloma
2: Cherry angioma
3: Angiokeratoma
4: Folliculitis

See next page for answer.

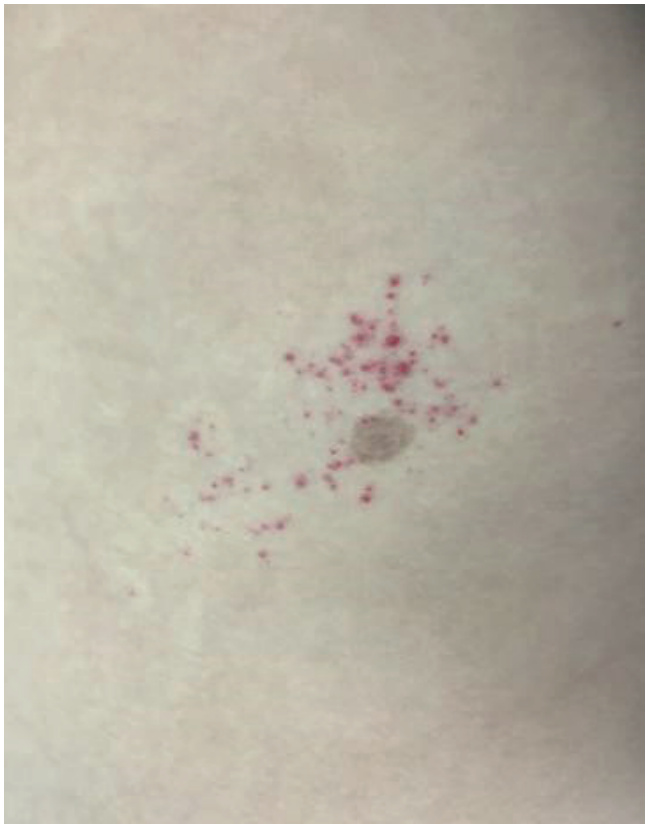

Fig. 2. Recurrent bright red papules in a satellite pattern.

ANSWERS TO QUIZ

Recurrent Red Papules in a Satellite Pattern Following Laser Treatment: A Commentary

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Diagnosis: Recurrent pyogenic granuloma

A skin biopsy was performed. The histopathological features revealed a benign lobular capillary proliferation in the dermal papillae, consistent with lobular capillary pyogenic granuloma (Fig. 3). The boy's lesions did not show any spontaneous regression after 2 months of observation. Consequently, the entire patch was excised due to frequent bleeding. At the 1-year follow-up visit, no recurrence was noted.

Pyogenic granuloma (PG) is a common benign vascular proliferation that typically presents as a single lesion. It is a rapidly growing, red, and fragile nodule that may bleed easily. It can occur anywhere on the skin or mucosa, but most commonly on the head and neck, and may present at any age (1).

The recurrence of multiple satellite lesions is a rare complication following treatment for the primary lesion. It occurs most often on the back, particularly over the scapular regions of young individuals under the age of 25 years (2, 3). Most satellite lesions appear between 1 week and 4 months after the treatment for the primary lesion (2, 3). The satellite lesions tend to be smooth, bright red, sessile papules measuring 1 to 10 mm in diameter, located around the primary site (2, 3).

The histopathological findings of the recurrent lesions are consistent with pyogenic granuloma, except that some of the small recurrent papules closely resemble simple capillary haemangiomas (4).

The pathogenesis of satellite metastasis is not well known. The study by Groesser et al. revealed BRAF and RAS mutations as major driver mutations in the pathogenesis of PG (5). Whether these findings are relevant to the pathogenesis of satellitosis requires further investigation. Most authors hold the view that after treatment or irritation of the primary lesion, angiogenic factors promote the angiogenesis during the natural repair process. This complication has been reported in cases after surgical excision, electrodesiccation, curettage, and carbon dioxide laser excision (2–4). Therefore, the risk of recurrent lesions seems unrelated to the treatment methods used for the primary lesion. It has also been observed after scratching of the primary lesion (4).

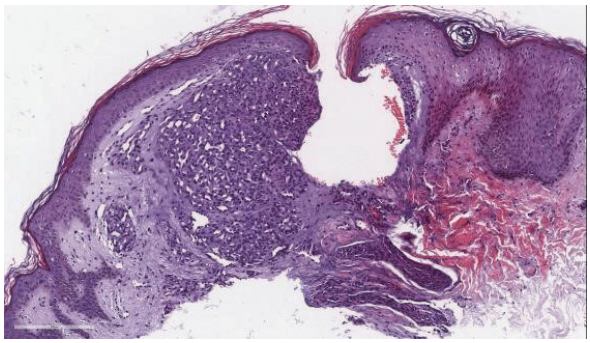

Fig. 3. A benign lobular capillary proliferation in the dermal papillae (haematoxylin and eosin, ×400).

Most untreated recurrent lesions are reported to resolve spontaneously within 2 to 12 months (3), making conservative treatment a suitable option. Depending on the location, size, and patient's preference, recurrent lesions can also be treated with the same methods as the solitary pyogenic granuloma. Dermatologists should be aware of this complication, inform patients in advance, and select the appropriate treatment.

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