Unusual presentation of more common disease/injury

Recurrent pyogenic granuloma with satellitosis

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A 26-year-old woman was treated by curettage and cautery for a pyogenic granuloma on her left shoulder. This recurred 3 months later and was excised. After a further 5 months, she developed three vascular papules and one lobulated vascular lesion at the site. These ranged in size from 1–4 mm and the largest of these bled easily on minimal trauma. The authors treated the four vascular lesions with curettage and cautery and took a punch biopsy from an erythematous area in the scar. Histology was identical to the original lesion, confirming a diagnosis of recurrent pyogenic granuloma with satellitosis. One year later she had no evidence of recurrence of the lesions.

BACKGROUND

Recurrent pyogenic granuloma with satellitosis is an uncommon presentation of an otherwise common problem that affects young people. Although the clinical appearance is alarming, the condition is benign.

CASE PRESENTATION

A 26-year-old woman was treated by curettage and cautery for a pyogenic granuloma on her left shoulder. This recurred 3 months later and was excised. After a further 5 months, she developed three vascular papules and one lobulated vascular lesion at the site. These ranged in size from 1–4 mm and the largest of these bled easily on minimal trauma. They were adjacent to a scar, beneath which was an area of erythema (figure 1). Following presentation to our dermatology department, we treated the four vascular lesions with curettage and cautery and took a punch biopsy from the erythematous area in the scar.

INVESTIGATIONS

Histology of the excision specimen showed a characteristic lobular lesion in which clusters of small capillary-sized vessels, some separated by fibrous septa, were present in an oedematous stroma (figure 2). There was no endothelial cell atypia. The subsequent punch biopsy and curettage specimens showed sampling of lesions with the same histological features. Histological evaluation of the specimens was consistent with a diagnosis of pyogenic granuloma. This confirmed the clinical diagnosis of recurrent pyogenic granuloma with satellitosis.

DIFFERENTIAL DIAGNOSIS

The most important differential diagnosis of a solitary pyogenic granuloma is an amelanotic melanoma. Bacillary angiomatosis, caused by infection with *Bartonella henselae*, is a differential diagnosis of recurrent pyogenic granuloma with satellitosis, however this is most common in patients with HIV infection and is confirmed by demonstrating *Bartonella* bacilli in the lesion. *B. henselae* is a gram-negative

bacillus that may cause cat scratch disease or bacillary angiomatosis. In 1994 Itin *et al* described a case of an immunocompetent 27-year-old male cat-owner with recurrent pyogenic granuloma with satellitosis.¹ The patient had evidence of infection with *B. henselae* on serological testing and clumps of dark bacilli, as found in patients with bacillary angiomatosis, were found on staining the lesions with the Warthin–Starry technique. Two further studies have attempted to discover whether pyogenic granulomas may be caused by *Bartonella* infection. Lee and Lynde found that six out of twenty patients with pyogenic granulomas had serological evidence of infection with *Bartonella* compared with none of the control patients with other vascular lesions, however the sample size was small and lesions were not directly examined for *Bartonella* bacilli.² More recently, Levy *et al* found no evidence of *Bartonella* infection in 45 pathological specimens from patients with pyogenic granuloma, using immunohistochemistry and PCR and the authors concluded that pyogenic granulomas were not caused by *Bartonella* infection.³

In our case, our patient does not have a history of contact with a cat and no risk factors for HIV infection. Given the most recent evidence against a role for *Bartonella* infection as a causative agent in this condition, microbiological testing was not considered necessary.

TREATMENT

Apart from the diagnostic curettage and cautery, our patient required no further treatment.

OUTCOME AND FOLLOW-UP

One year later she had no evidence of recurrence of the lesions.

DISCUSSION

Recurrent pyogenic granuloma with satellitosis is a well-recognised, but rare phenomenon with fewer than 50 cases described in the literature.⁴ Pyogenic granulomas, or lobular capillary haemangiomas are common, benign vascular

Figure 1 Excision scar with underlying erythema and surrounding vascular lesions.

proliferations. They can occur anywhere on the skin or mucous membranes, but most frequently on the head and neck or upper limb with only 15% on the trunk.⁵ They usually occur spontaneously, but may arise secondary to other factors, including trauma, burns, localised viral infections, or insect bites and pregnancy.⁴ Treatment strategies include surgical excision, curettage, cryotherapy, cautery and lasers.⁴ In a study of 408 patients, recurrence rates following treatment of pyogenic granulomas were reported as 5% for all treatment modalities, 3.7% following excision and 10.3% following other treatments.⁵

Recurrent pyogenic granuloma with satellitosis most frequently occurs in children or young adults, although cases in middle-aged adults have occasionally been described.^{6 7} As with solitary lesions, the sex distribution is equal.⁸ In a series of 11 cases, Warner and Wilson-Jones found that the majority of cases of recurrent pyogenic granuloma with satellitosis occurred on the trunk, frequently situated over the scapula.⁶ They suggested that this unusual anatomical location occurred as a result of recurrent trauma caused by pressure during sleep. (In this case, our patient mentioned that the largest of the satellite lesions bled when she slept on her left side.)

One to four months following treatment of the primary lesion, new satellite lesions appeared over a period of a few weeks. Satellite lesions appeared either alone, or in association with recurrence of the original lesion. Satellites ranged in size from 1 mm to 1 cm and tended to be larger and more numerous near the scar with smaller satellites situated further away. Histologically satellites generally resembled the original lobular capillary haemangiomas, although some smaller recurrent papules resembled simple capillary haemangiomas and in some of the largest recurrent tumours there was deep extension to the level of the subcutaneous fat.⁶

The underlying pathophysiology for the appearance of multiple satellites is unknown, but may involve the release of vascular endothelial growth factor (VEGF) following trauma of the original lesion.⁴

The condition is benign and in some cases the lesions have resolved spontaneously.^{6 7 9} Several different treatment modalities have been described including surgical excision, curettage and cautery, carbon dioxide laser,

Figure 2 (a) Small capillary-sized blood vessels and no endothelial cell atypia. H&E, original magnification x40. (b). H&E, original magnification x200.

compression, cryotherapy, systemic steroids, intense pulsed light and radiotherapy.^{4 7}

Learning points

- ▶ Recurrent pyogenic granuloma with satellitosis most frequently occurs in children or young adults.
- ▶ In most cases lesions occur on the upper trunk, possibly as a result of recurrent trauma during sleep.
- ▶ Satellites usually appear within 4 months of treatment of the primary lesion.
- ▶ The pathophysiology is unknown, but may involve release of VEGF following trauma of the original lesion.

Competing interests None.

Patient consent Obtained.

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Please cite this article as follows (you will need to access the article online to obtain the date of publication).

George SMC, Gossain SR, Morrison IK, Coburn PR. Recurrent pyogenic granuloma with satellitosis. *BMJ Case Reports* 2012; 10.1136/bcr.11.2011.5162, Published XXX

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