

# Problem-based Learning

## CASE ESSAY 7

### 43-year-old Woman with Tender Nodules in Facial Scars

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A 43-year-old Scandinavian woman presented with a 6-month history of tenderness and nodular changes within facial scars. She had 16 years earlier been involved in a car accident, which caused her facial lacerations. These were contaminated by asphalt and fragments of glass and treated by plastic surgeons by minor, uncomplicated scar revisions. There was no history of skin disease, hypertrophic scars or keloids. On examination the patient showed facial scars with brownish discoloration and induration. Especially a scar on the lower lip was hard and indurated



Fig. 1.

with a tender nodule of a size of 2,75 x 0,75 x 1 cm projecting into the oral mucosa (Fig. 1).

**Nodules arising in old scars yield an initial tentative diagnosis of a delayed FOREIGN BODY REACTION as a consequence of particle contamination, or reaction to sutures. The differential diagnoses comprise skin diseases, which may become activated in a scar, such as CUTANEOUS SARCOIDOSIS, GRANULOMATOUS ROSACEA, LUPUS ERYTHEMATOSUS and LUPUS VULGARIS. LEPROSY and DEEP FUNGAL INFECTION are not likely in view of the absence of travel abroad. A biopsy and Mantoux test should be done to clarify the diagnosis.**

Biopsy of the lip showed the non-caseating, sarcoidal type of granulomatous inflammation in the dermis. The granulomas were composed of epithelioid histiocytes and probably also foreign body-type giant cells with a phagocytized dark pigmented material, which was non-birefringent in polarized light. The Mantoux test was negative.

**The above findings suggest a FOREIGN BODY-LIKE REACTION OR SARCOIDOSIS which can be histologically indistinguishable. The most common material precipitating traumatic foreign body granulomas is silica, a very frequent wound contaminant present in glass and sand. The reaction may occur shortly after the incident, or, characteristically, may be delayed for several years, like in the present case. Sarcoidosis**

**is a multisystem granulomatous disorder of unknown aetiology. In Sweden, the incidence is 64 per 100,000 persons. It mainly involves lungs, mediastinal and peripheral lymph nodes, eyes and skin. Cutaneous involvement occurs in 20–35% of patients with systemic sarcoidosis, but the disease may also be exclusively cutaneous. Occurrence of sarcoidosis in scars is a recognized manifestation of this disease and has been reported in lesions after surgery, injections, scars of herpes zoster, tattoos and in ritual scarifications. Scar sarcoidosis may precede or accompany systemic sarcoidosis, or may be indicative of a relapse. This patient should be evaluated for systemic sarcoidosis.**

The patient reported of episodes of minor chest pain and chronic backache, but was otherwise healthy. General physical examination revealed additional discoloration and induration in the cicatrices of neck, chest and leg, but was otherwise irrelevant. Chest radiography was normal. A pulmonary function test showed a marginal decreased diffusion capacity (73%), and the pulmonologist considered this a potential indicator of pulmonary sarcoidosis. Routine laboratory studies of blood showed serum angiotensin converting enzyme (s-ACE) level and calcium level within normal range.

**There is no single diagnostic laboratory test for sarcoidosis. The diagnosis is established most securely when clinical and radiological fin-**

**dings are supported by histological evidence of widespread noncaseous granulomas in one or more tissues. Chest X-ray is essential as it is abnormal in more than 90% of cases of systemic sarcoidosis, most frequently bilateral hilar lymphadenopathy is found. Pulmonary function test often demonstrates a decreased diffusing capacity, and fluctuations in this parameter is probably the most sensitive parameter of pulmonal disease. s-ACE level is elevated in about 60% of patients with sarcoidosis and reflects granuloma load, but is not specific for the disease. Hypercalcaemia is seen in 5–15% of patients and related to alveolar macrophage secretion of 1,25 dihydrovitamin D3.**

The patient was treated with high-potency topical steroids that did not produce any effect. Methotrexate (MTX) 12,5 mg once weekly was instituted and the lesions cleared during the following 8 months. A control pulmonary function test showed normalization.

**Sarcoidosis resolves spontaneously in up to 60% of cases. Thus, observation or topical steroid is recommendable as a first choice, or excision of a single deforming lesion. MTX is effective in chronic cutaneous, as well as in systemic, sarcoidosis. The observation that MTX was helpful may indicate a diagnosis of sarcoidosis, but may also be a stochastic phenomenon. One would have a conclusive answer if lung function test deteriorated after treatment cessation.**

Five years later the patient was referred once again because of recurring activity within the facial scars. Biopsy showed a comparable granulomatous reaction pattern, but this time polarizable foreign matter was found too, possibly representing fragments of glass. Observation was chosen as the initial approach. Unfortunately, the patient has not been seen for further controls.

**In cutaneous silica granulomas birefringent particles are seen under polarized light, believed to be foreign bodies containing silica. Several silica granulomas may develop concurrently in noncontiguous parts of the body, and may even include regional lymph nodes. Spontaneous resolution is described, and initial observation is reasonable. Surgical excision is the most common method applied, but other modalities include intralesional or systemic steroid therapy. In any case, recurrence may occur.**

### Diagnosis

FOREIGN BODY GRANULOMA (SILICA)  
SARCOIDOSIS OBS. PRO.

### Comments

**This case reflects the situation often encountered in the daily clinic where it is not possible to make a definite diagnosis. In dermatology, the definitions of many disease entities are diffuse, and diagnoses are made on the basis of a constellation of findings, rather than a single diagnostic test or symptom. In these**

**situations, the tentative diagnosis is made on the basis of probability, preferring the common diseases before the uncommon ones. It is, however, important to appreciate that such decisions represent only half-truths, and that the physician should remain open-minded to any new symptoms and findings, which may change the initial diagnosis. We consider foreign-body granuloma to be the preferred diagnosis; however, we would also recommend follow-up of this patient for the possible symptoms of lung sarcoidosis.**

Demonstration of foreign matter is traditionally thought to exclude sarcoidosis, but reports exist of patients with systemic sarcoidosis presenting with cutaneous elements harbouring birefringent foreign material on polarized microscopy. Several studies have proposed that a granulomatous foreign body reaction and sarcoidosis are not mutually exclusive and that foreign material may actually act as a nidus for cutaneous granuloma formation in individuals with sarcoidosis.

### Further reading

- Callen JP. The presence of foreign bodies does not exclude the diagnosis of sarcoidosis. *Arch Dermatol.* 2001 Apr; 137: 485–486
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