Letters to the Editor

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Foreign body synovitis induced by a crown-of-thorns starfish

Sir, Penetrating foreign bodies are a frequent cause of synovitis affecting the extremities, and can be associated with a local, granulomatous inflammatory reaction. Foreign body synovitis is often not considered in patients presenting with an acute monoarthritis, tenosynovitis or dactylitis [1].

A 33-yr-old Englishman was stung by a crown-of-thorns starfish (Acanthaster planci) in his right hand in Sharm El-Sheik, on the Red Sea. The index, middle, ring and little fingers immediately became swollen with pain and there was severe limitation of flexion of the fingers. The swelling was mainly over the palmar aspect of the fingers, with severe local tenderness; the stung areas were clearly visible (Fig. 1). Local application of ice and elevation of the hand did not help, and neither did a maximum dose of a non-steroidal anti-inflammatory agent. A radiograph showed a linear, calcified foreign body on the palmar aspect of the middle phalanx of the right middle finger (Fig. 1). A few days later he was started on 30 mg prednisolone, decreasing by 5 mg every 5 days. The pain and swelling started to ease within a few days. One month later the pain had settled but there was significant limitation of flexion in the four fingers. Thickening of the long flexor tendons with tenderness was clear on physical examination. A second course of oral prednisolone was prescribed but the starting dose was lower (20 mg per day) and the dose was reduced by 5 mg every 10 days.

Six months later, flexion in the right index finger was still limited, with thickening along the long flexor of the same finger. With regular passive and active exercise, flexion was almost full a year after the incident. A repeat of the X-ray showed that the foreign body along the middle finger was fading.

Sea urchin spines, along with other foreign bodies, are known to cause dactylitis, tenosynovitis or non-infectious monoarthritis [1–3]. The crown-of-thorns starfish belongs to the phylum Echinodermata, which also includes the long-spined sea urchin Diadema setosum and the sea urchin Toxopneustes pileolus. The nature of the poison of the Echinodermata is unknown. Penetration by the spines of the crown-of-thorns starfish may produce a painful wound, redness, swelling, vomiting, numbness and paralysis [4]. The spines of the crown-of-thorns contain calcium carbonate and hence are visible on plain radiographs [2, 5]. The spines

Fig. 1. The swelling was mainly over the palmar aspect of the fingers and the stung areas were clearly visible. The radiograph shows a linear calcified foreign body on the palmar aspect of the middle phalanx of the right middle finger.
induce a foreign body reaction that eventually settles down. However, in our patient, the tenosynovitis, affecting a number of fingers, ran a rather protracted course and required fairly intensive passive and active exercises.

Although our patient developed local complications induced by the foreign body, sea urchin spines have been reported to cause systemic upset [2]. A combination of proteinaceous material and toxins produced by the spines is probably responsible for the acutely painful and systemic reaction [6]. We did not feel that this patient’s symptoms were caused by a penetrating joint injury as the finger that settled down the soonest was not the one with radiographic evidence of the spine. Surgical excision of the foreign body is really only necessary when a severe reaction leads to granuloma formation.

Sea urchin stings can cause a very nasty inflammatory response, and the main point from this case is that a detailed travel and occupational history should be sought in all patients presenting with acute monoarthritis. Furthermore, the possibility of a penetrating injury should be borne in mind in patients presenting with acute monoarthritis.

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