CASE REPORT

Pseudo-Koebner phenomenon: Unusual manifestation of tuberculosis after venepuncture

N. Aslam*, V. Spiteri, I. McNab

Nuffield Orthopaedic Centre, Windmill Road, Headington, Oxford, OX3 7LD, UK

Accepted 24 March 2005

Introduction

The Koebner phenomenon occurs after a variety of traumatic insults. It involves the development of pathological lesions at distant sites following trauma in patients with cutaneous diseases. It is well described in cases of psoriasis and other dermatological conditions. It has been reported after insect bites, burns, tattoos and surgical wounds. Pseudo-Koebnerization is used to describe the spread of an infective agent in the traumatised area.

This is a case of a patient who developed this phenomenon after venous venepuncture with no previous history of tuberculosis.

Case report

A 57-year-old Asian lady presented with a 3-month history of an enlarging swelling on the dorso-ulnar aspect of her hand after multiple attempts at blood venepuncture. She also had a longstanding history of left iliac crest pain with thigh paraesthesia. There was no past history of tuberculosis or recent travel.

Clinical examination revealed 8 cm x 10 cm swelling on the dorsum of her hand with limited flexion of the MP joints (Fig. 1). The swelling was cool, tender and fluctuant. General examination showed tenderness over the left iliac crest. Hip movements were painfree with a normal range of motion. Spinal examination was normal.

Blood tests revealed raised inflammatory markers with a CRP of 15 and ESR of 47. The urate level (187 μmol/l) and WCC (6.88) were within normal limits.

Left hand radiographs showed periosteal reaction around the midshaft of the ring finger suggesting osteomyelitis (Fig. 2a).

An ultrasound and MRI scan was requested for preoperative localisation of the swelling. A surgical biopsy was planned. The ultrasound scan and MRI confirmed a large collection on the dorsum of the hand deep to the extensor tendons and involving the interossei (Fig. 2b).

Chest radiograph was normal. A pelvic radiograph showed a circular lytic lesion within the left iliac crest (Fig. 3a). Further MRI scanning revealed an ilio-psaas abscess with a collar stud abscess through the left iliac wing (Fig. 3b). An ultrasound-guided aspiration of this pelvic collection was carried out.

Surgical biopsy specimens from the hand swelling showed granulomatous inflammation. Ziehl Neelsen stains were negative as were cultures for mycobacteria and fungi. The investigations and histology
were strongly suggestive of TB and a course of antituberculous treatment (Rifampicin, Ethambutol and Pyrazinamide) was started. She had a good response to treatment.

Latest follow up showed excellent recovery. She had a well-healed wound with full painfree finger flexion. A repeat MRI scan showed resolution of the iliacus abscess.

Discussion

The Koebner phenomenon was first described by Dr. Heinrich Koebner in 1876 who discovered the appearance of psoriatic lesions in traumatised skin. This has now been described for a whole range of dermatological and infectious conditions. The predisposing trauma can vary from closed blunt injury to
surgical incisions. There is controversy over the depth of injury required, the phenomenon usually occurs after both the epidermis and dermis are damaged. The lag period before development of lesions is usually weeks but has been reported up to 2 years.11

This the second reported case of tuberculosis gumma after venepuncture in the literature,10 in our patient this led to a new diagnosis of pelvic tuberculosis.

Previous reports have shown the development of tuberculous gumma after blunt injury to the chest wall9 and experimental animal studies have shown cases of tuberculosis to localise around sites of injury.2,3 Reactivation of cutaneous tuberculosis1 and tuberculosis after contaminated needle stick injury are well documented.5

The pathogenesis of this condition is not well understood. The injury, such as a venepuncture site haematoma may act as a focus for blood bourne bacilli to settle and develop into an abscess.3 There appear to be no specific anatomical preferences for the phenomenon.

Figure 3  (a) AP Pelvis radiograph with a circular lytic area in the left ilium. (b) MRI scan of pelvis showing a large pelvic abscess communicating via the ilium to the gluteal area.
Diagnosis of cutaneous tuberculosis is challenging and requires the correlation of clinical findings with diagnostic testing. In addition to traditional acid fast bacilli smears and cultures, which are often negative, there has been the increased use of polymerised chain reaction (PCR). In this case the histology showed granulomatous inflammation, which was highly suggestive of mycobacteria infection, and there was a good response to anti-tuberculosis therapy.

Our case highlights the importance of general examination in the assessment of hand swellings. Cutaneous tuberculosis is usually associated with systemic disease. This lady had a pelvic collection tracking via her iliac wing, which had not been previously identified and responded well to aspiration and anti-tuberculosis treatment.

A painless cold abscess should lead to a high index of suspicion of underlying tuberculosis.

References


