

CASE REPORTS

# Erythema nodosum – diagnostic difficulties in the accident and emergency department

Patrick Hyland-McGuire, Henry Guly

**Abstract**

Five patients presenting with erythema nodosum to an accident and emergency department are described. Initially they were misdiagnosed as cellulitis, infected insect bites, and minor trauma. Suspicious skin lesions or joint manifestations occurring either alone or especially if in combination should alert the wary clinician to the possibility of erythema nodosum and follow up in a few days may help to confirm the diagnosis.

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Key terms: erythema nodosum; diagnosis; misdiagnosis

Erythema nodosum is an uncommon skin eruption<sup>1</sup> which may be a marker of underlying systemic disease. Clinical recognition should prompt investigation into possible causes, some of which are serious and amenable to treatment. In its early stages, the condition may mimic soft tissue infections<sup>2</sup> or sub-acute musculoskeletal conditions,<sup>3</sup> which are commonly seen in accident and emergency (A&E) departments. We report on five patients with erythema nodosum who were initially misdiagnosed in the A&E department

**Case reports**

**CASE 1**

A 36 year old woman with a previous right below knee amputation following trauma presented to the A&E department with a one week history of pain in her left leg with redness extending from the ankle to the knee which had failed to respond to flucloxacillin prescribed by her family doctor. This was initially diagnosed as cellulitis. She was admitted under the A&E service for rest, elevation, and intravenous flucloxacillin and benzylpenicillin.

The next day a “bruise” was noted on the right amputation stump. The original inflammation initially improved but over the next 7 d red patches appeared over both thighs, left elbow, left hand, and neck. A diagnosis of erythema nodosum was made and this was confirmed by a dermatologist. A chest x ray showed hilar lymphadenopathy. Antistreptolysin-O titre was normal. A clinical diagnosis of sarcoidosis was made. Follow up one month later revealed residual bruising over the area of the lesions.

**CASES 2-5**

Four further cases are summarised in the table.

**Discussion**

Erythema nodosum classically presents as bilateral, painful, red, tender nodules of varying size and number on the anterior shins.<sup>4</sup> Much less commonly, lesions occur on the backs of the legs, thighs, soles of the feet, arms, and neck. Nodules may not necessarily be symmetrical and may appear at different times.<sup>5</sup> Areas may become confluent and appear as a single lesion. Erythema nodosum is commonest in the third to fifth decade, with a female to male predominance of 3:1.

Erythema nodosum is associated with a wide spectrum of diseases and thorough investigation has been reported to yield an underlying cause in 67.5% to 95% of cases.<sup>6</sup> Associated conditions include sarcoidosis, streptococcal infection, tuberculosis, histoplasmosis, other infections such as yersinia, mycoses, chlamydia and lymphogranuloma venereum, drugs (for example, oral contraceptives and sulphonamides), ulcerative colitis and Crohn’s disease, and neoplasms such as Hodgkin lymphoma and leukaemia. The

*Clinical details of four further cases of erythema nodosum*

Case	Sex	Age (years)	Presenting symptoms	Initial diagnosis	Initial treatment	Subsequent history	Underlying cause
2	F	31	Pain right hip and knee Red nodule right knee	Minor trauma	Nil	2 d: 5 nodules right lower limb 1 nodule left lower limb Increased pain	Sarcoidosis
3	M	36	Redness and swelling left shin (also bilateral Achilles tendinitis)	Cellulitis	Admitted for IV antibiotics	2 d: Pain and inflammation both shins	Sarcoidosis
4	M	9	“Insect bites” both shins Left worse than right Pyrexia 39°C	Insect bites both shins Left side infected	Chlorpheniramine, flucloxacillin	2 d: Pain left ankle ESR: 68 mm/hour	None found
5	F	43	Pain left wrist with a red area over joint	Non-specific inflammation	Ibuprofen/splint Flucloxacillin	2 d: 8 nodules left shin diagnosed as insect bites 4 d: nodules right shin	None found

IV, intravenous

Accident and Emergency Department, Derriford Hospital, Plymouth PL6 8DH, United Kingdom  
P Hyland-McGuire  
H R Guly

Correspondence to:  
Mr Patrick Hyland-McGuire

condition may also occur in association with streptococcal cellulitis.<sup>4</sup> This sequence was initially suspected in one of our patients (case 1) but subsequently this patient was shown to have sarcoidosis. There is no evidence that antibiotics have an adverse effect on the course of erythema nodosum.

The skin lesions of erythema nodosum are often preceded or accompanied by fever, malaise, and arthralgia. These symptoms are a feature of the underlying condition, and erythema nodosum may be considered a skin marker of the process. Joint manifestations occur in 75% of cases, with arthralgia being more common than synovitis. The synovitis is self limiting and non-erosive and symmetrically affects the knees and ankles and less commonly the wrists, elbows, small joints of the hands, and shoulders in one third of patients with erythema nodosum. The affected joints are painful, stiff and tender, and an effusion is usually present.

There may be difficulty when the condition presents before a classical pattern has evolved. Erythema nodosum has previously been reported as being misdiagnosed as cellulitis<sup>2</sup> and soft tissue sarcoma.<sup>7</sup> Any tender, red nodule, especially on the shin, should be carefully examined and a search made for lesions on the other side and on other typical

areas. The diagnosis should also be considered in patients with arthralgia and synovitis, especially if affecting typical joints. If erythema nodosum is strongly suspected, the patient should have a chest x ray and should be referred to the medical service at the time of presentation for further management. However, if a classical pattern is not recognised, it would be useful to review the patient again in the A&E department in two or three days, at which time more classical features may have evolved. The patient should be advised to return to the A&E department in the interim should the skin lesions progress. It may be necessary to treat the condition as a cellulitis until features of erythema nodosum are recognised.

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## A confused drug addict: the importance of considering sepsis

P Cornelius, E Pourgourides, S Meek

### Abstract

**The case is reported of a 35 year old heroin addict presenting with acute confusion which was later found to be due to meningococcal meningitis. Other than his altered mental state, the only abnormal finding on examination was a mild pyrexia.**

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Key terms: sepsis; heroin addiction; acute confusion

### Case report

A 35 year old male who is a registered heroin addict was brought by ambulance to the accident and emergency (A&E) department at 11 pm, accompanied by his girlfriend, who had found him in an aggressive and confused state. He was on a methadone replacement programme and had taken his normal dose of methadone in the morning, together with a small dose of intravenous heroin. He subsequently went to college and returned at mid-day complaining of a mild headache. His girlfriend then left him alone and returned in the evening to find that the room had been

smashed up and the patient was acutely disturbed, violent, and aggressive.

On examination in the A&E department, he was alert but disorientated in both time and space and was aggressive and uncooperative. General physical examination was unremarkable apart from the presence of a mild pyrexia of 37.5°C; there was no focal neurological deficit, no neck stiffness, and no rash. Venepuncture was difficult because of his intravenous drug abuse and aggressive state. Eventually a small sample was obtained which was sent for a full blood count. This showed a haemoglobin concentration of 16.4 g/litre and a white count of  $28.8 \times 10^9$ /litre, with 89% neutrophils. A diagnosis of toxic confusional state secondary to infection was made and he was admitted for further investigation, including computerised tomography brain scan and lumbar puncture. Because of continued agitation he required sedation and ventilation. *Neisseria meningitidis* was subsequently grown from his blood cultures and CSF samples. Tests for HIV were negative. His inpatient stay was protracted and complicated by broncho-

**Accident and  
Emergency  
Department,  
Frenchay Hospital,  
Bristol**  
P Cornelius  
E Pourgourides  
S Meek

Correspondence to:  
Dr P Cornelius,  
Accident and Emergency  
Department, Bristol Royal  
Infirmary, Bristol BS2 8HW,  
United Kingdom.