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Scientific letter

Fever of unknown origin and rhabdomyolysis in an immigrant from Africa☆

Fiebre de origen no filiado y rabdomiólisis en una inmigrante procedente de África

Since 2014, an increase in the number of cases of fever associated with rhabdomyolysis of unexplained cause has been reported in African refugee immigrants arriving on the Italian coast after voyaging across the Mediterranean. These migrants come mostly from East Africa, Nigeria and Libya, and some from Gambia.[1–3] This syndrome has been reported in up to 1% of 1500 refugees treated in a hospital in the Italian region of Calabria over three years.[2] We present the case of an immigrant woman from West Africa treated in our hospital for fever and rhabdomyolysis of unknown cause after making the crossing of the Strait of Gibraltar to arrive in Spain.

This was a 38-year-old patient from Conakry in Guinea, from where she had set off two months earlier, arriving in Spain a week earlier across the Strait and subsequently having been transferred to the Zaragoza Red Cross. Four days after her journey, the patient developed a fever of 39 °C, fatigue and aching joints and muscles, particularly in her neck, with no apparent focus of infection. She reported no pharmacological, toxic substance, drug or sea water intake; there was also no history of trauma or overexertion in the previous 72 h. On examination, her vital signs were normal, and she had slight diffuse pain across her abdomen, with no hepatomegaly or splenomegaly palpated. Cervical and axillary lymphadenopathy smaller than 2 cm was detected. Blood analysis showed ions and kidney function to be normal throughout her stay in hospital. The patient had a pyrexia of 39 °C and elevation of rhabdomyolysis enzymes [creatine kinase (CK) and lactate dehydrogenase (LDH)] and liver enzymes [glutamate-oxaloacetate transaminase (GOT) and glutamate-pyruvate transaminase (GPT)] (Table 1), for which she was started on treatment with antipyretics and fluid therapy. The fever disappeared after 24 h and urinary alkalinisation was not considered necessary, as the patient's CK levels were not very high and were showing a tendency to decrease (Table 1). A study of haemoglobinopathies and glucose-6-phosphate dehydrogenase (G6PDH) activity was performed with no abnormal findings. Malaria, syphilis, HIV, hepatitis C, hepatitis B, hepatitis A, cytomegalovirus (CMV), Epstein-Barr virus (EBV), urinary tract infection and bacteraemia were all ruled out; thyroid hormones were normal. In the absence of suggestive symptoms, the patient was not investigated for the presence of coxsackievirus or adenovirus infection.

Many acquired and inherited causes of rhabdomyolysis have been described. It is a potentially serious condition which can lead to acute kidney injury and be a source of major complications. Many infections have been associated with this syndrome, most commonly influenza viruses, but they also include coxsackievirus B[4] and adenovirus.[5] Mechanical causes such as overexertion or prolonged immobilisation, hypernatraemia from ingestion of sea water, the use of medicinal products, toxins or drugs of abuse, haemoglobinopathies or G6PDH deficiency[6,7] can cause or contribute to rhabdomyolysis, with a certain genetic or racial predisposition necessary for it to develop.[8] A number of authors have identified cases[1–3] arriving in Italy after a one to two-day voyage across the Mediterranean. They are young black patients around the age of 20, up to 20% of them asymptomatic, who are found to have CK elevation an average of 10–36 days following their arrival, according to the authors, and they usually recover about two to three weeks after the onset of symptoms.[1–3] The case we have presented here has the same characteristics and, although we cannot rule out mechanical causes, even though it was more than 72 h since the possible overexertion, or certain viruses listed as potential causes, we believe that our case could be included in the clinical spectrum described by these authors.

In conclusion, we believe that migrants with these characteristics have a high risk of rhabdomyolysis and should be studied in this regard, as the complications are potentially serious. We also believe that in a not insignificant number of cases the aetiology cannot be demonstrated, so this phenomenon and its possible relationship with some type of unproven infection, genetic, racial or geographic factor needs to be investigated. Last of all, we need to be aware of the possibility of this condition in African migrants who reach Spain across the sea.

Table 1
Changes in transaminases and rhabdomyolysis enzymes during the course of the admission.

	Day 1	Day 3	Day 5	Day 9
GOT (U/l)	389	1102	653	135
GPT (U/l)	76	427	322	174
CK (U/l)		5030	3158	594
Myoglobin (ng/mL)		3015	1303	
LDH (U/l)		1494	1153	777

CK: creatine kinase; GOT: glutamate-oxaloacetate transaminase; GPT: glutamate-pyruvate transaminase; LDH: lactate dehydrogenase.

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Carlos Ramos-Paesa[a,*], Laura Huguet-Embún[b], Arantzazu Inmaculada Arenas-Miquelez[c], Andrea de los Mozos-Ruano[c]

[a] *Unidad de Enfermedades Infecciosas, Hospital Universitario Miguel Servet, Zaragoza, Spain*
[b] *Unidad de Cuidados Intensivos, Hospital Universitario Miguel Servet, Zaragoza, Spain*
[c] *Servicio de Medicina Interna, Hospital Universitario Miguel Servet, Zaragoza, Spain*

* Corresponding author.
E-mail address: ramosprobable@gmail.com (C. Ramos-Paesa).

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A neglected illness still present nowadays: Tuberculoid leprosy☆

Lepra tuberculoide, todavía presente en nuestro medio

As leprosy is a rare chronic disease in our setting, especially in the paediatric population,[1] we present a case report that we consider of interest.

This was a girl referred to the paediatric infectious medicine clinic while her father, of Brazilian origin, was having tests for non-erythematous, non-pruritic, non-painful infiltrated skin lesions on his chin, pinnae and nose; these were associated with multiple erythro-pigmentary macular lesions on his trunk and limbs, and numbness in the distal region of the left leg.

Our three-year-old patient, born in Spain and with no medical history of interest, had a ring-shaped lesion with a raised, erythematous border and a flatter, hypopigmented centre, 5 cm in diameter, on the medial aspect of her left forearm (Fig. 1). The lesion had been there for a year and had not responded to topical corticosteroids. The decision was made to biopsy the lesion.

The pathology report confirmed the presence of chronic, granulomatous nodular inflammation, with giant cells and a perivascular, periadnexal and perineural lymphocytic crown (Fig. 2). It was stained with the Fite-Faraco technique, with no bacilli observed. A sample of the biopsy was sent for polymerase chain reaction (PCR) for *Mycobacterium leprae (M. leprae)* with *M. leprae*-specific-repetitive-element PCR positive, *M. leprae* Ag 18-kDa PCR positive and GenoType *Leprae*-DR negative. Nasal exudate smear microscopy was negative.

Both clinically and bacteriologically, this seemed to be a case of paucibacillary leprosy, according to the WHO classification, or tuberculoid leprosy (pathologically), one of the most common forms in childhood. Treatment was started with rifampicin (15 mg/kg/dose monthly) and dapsone (2 mg/kg/day) for six months.

A skin biopsy was also performed in the father, who had a dermal histiocytic infiltrate with acid-alcohol-fast bacilli compatible with leproma, and he was diagnosed with lepromatous leprosy.

Leprosy in children is an epidemiological indicator of active foci in adults and recent transmission.[2] Diagnosis is difficult, even in countries with a higher prevalence of leprosy (Brazil, India).[3] In Spain, 168 cases of leprosy were diagnosed from 2003 to 2013, with 128 foreign patients; mainly (71.9%) from South America (Brazil).[4] In our setting, a high degree of clinical suspicion based on an adequate epidemiological investigation is necessary to arrive at the diagnosis. The route of transmission is not very clear, but it is believed that the contagion is by respiratory secretions and not by contact with the skin lesions.

According to the Ridley-Jopling classification (based on the patient's clinical and immunological status), two main forms are described[5]: tuberculoid leprosy, one or a few hypo- or hyper-pigmented lesions with or without loss of sensation; and lepromatous leprosy, with multiple skin lesions and nerve involvement. Between these two forms there is a broad clinical spectrum (borderline-tuberculoid, borderline-borderline and borderline-lepromatous). In the cases tending towards lepromatous, the histology shows inflammatory infiltrates with Virchow cells full of bacilli and absence of appendages. The tuberculoid polarity involves tuberculoid granulomas with epithelioid cells, Langerhans cells and lymphocytic infiltrates with the absence of bacilli. According to the WHO, leprosy is classified as paucibacillary (1–5 skin lesions, only one affected nerve trunk, negative smear microscopy) and multibacillary (>6 skin lesions, more than one affected nerve trunk and positive smear microscopy).

Key to microbiological diagnosis is a skin biopsy, which enables the presence of bacilli to be visualised by Fite-Faraco staining. It has not been possible to isolate *M. leprae* in the usual culture media for mycobacteria. Smear microscopy has a specificity of 100% and

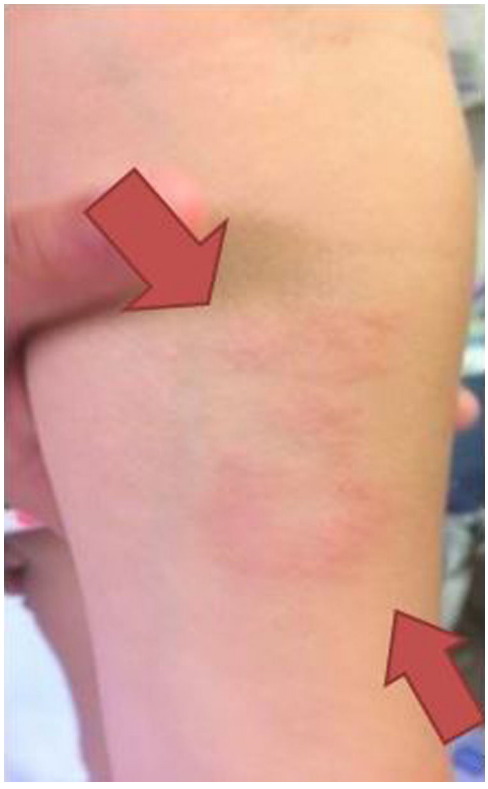

Figure 1. Skin lesion: ring-shaped, erythematous, with raised border and hypopigmented centre.

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