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Diagnosis at first sight

Abdominal violaceous skin lesions of a 47-year-old woman following a geometric pattern



Lesiones cutáneas violáceas en el abdomen de una mujer de 47 años siguiendo una distribución geométrica

Andrea Combalia*, Daniel Morgado-Carrasco, Xavier Fustà-Novell, Jose M. Mascaró-Galy

Servicio de Dermatología, Hospital Clínic, Barcelona, Spain

Case report

We present the case of an obese 47-year-old woman from the Dominican Republic, living in Spain since 2003. She came to our outpatient department reporting a 15-day-history of painful nodules and ulcerations on the abdomen that had been treated by her general practitioner with amoxicillin/clavulanate 875/125 mg t.i.d. for 7 days with no improvement. She mentioned that 8 weeks previously, during a vacation trip to her country, she had undergone a mesotherapy session with injections of a liquid formula containing phosphatidylcholine to reduce the fat from her abdomen.

On physical examination redness, swelling, drainage and ulceration were seen at the sites of mesotherapy injection (Fig. 1). Ultrasound imaging revealed subcutaneous edema, but no signs of deep abscessification, and MRI (T2) showed fat necrosis at the sites of injection. A punch biopsy was performed. Histopathologic examination revealed only mild dermoepidermal edema and a mixed infiltrate on the dermis without granulomas (Fig. 2). Periodic-Acid Schiff (PAS) and silver staining were negative as well as Ziehl-Neelsen. *Mycobacterium abscessus* was identified on skin cultures. Antibigram is shown in Table 1.

Outcome

The patient began treatment with doxycycline 100 mg b.i.d and clarithromycin 500 mg b.i.d for 2 months. Although identification of *Mycobacterium abscessus* subspecies was not provided, drug susceptibility testing assay showed a pattern of multidrug resistance except for clarithromycin. Therefore, doxycycline was stopped, and clarithromycin was administered 1 g b.i.d during the following 4 months. The patient completed a six-month course of antibiotics with complete resolution of the swelling, drainage and ulceration, but the lesions resolved with hypertrophic scars. Some of the scars



Fig. 1. Redness, swelling, drainage and ulceration at the sites of mesotherapy injection.

were surgically excised to get a better esthetic result and to discard the possibility of persisting infection. Cultures and PCR for mycobacterium of the samples were negative, confirming the cure of the infection.

Commentary

Mesotherapy is a treatment involving local subcutaneous injections of minute quantities of various substances for cosmetic purposes (non-steroidal anti-inflammatory medications, enzymes, nutrients, antibiotics, hormones, vitamins or plant extracts). Mesotherapy may be used to aid weight loss in conjunction with dietary modification, hormone replacement therapy, exercise and nutritional supplements. Both infectious and noninfectious complications of mesotherapy have been described previously. However, injection-site infections with non-tuberculous mycobacteria are often reported.

* Corresponding author.

E-mail address: andreacombalia@gmail.com (A. Combalia).

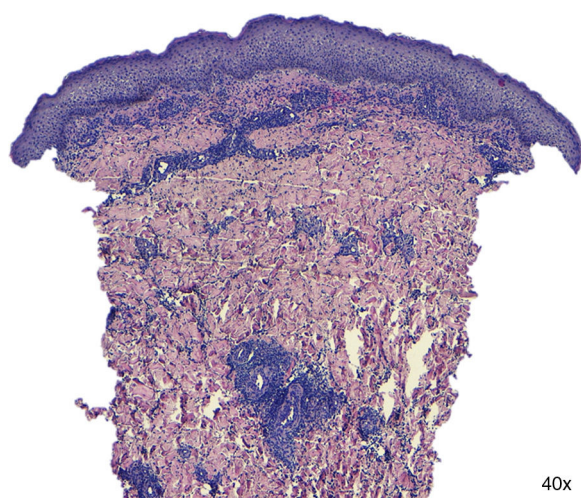


Fig. 2. Histopathologic examination revealed only mild dermoepidermal edema and a mixed infiltrate on the dermis without granulomas.

Table 1

Drug susceptibility testing assay: antibiogram and minimal inhibitory concentration ($\mu\text{g/ml}$).

Antibiotic	MIC ($\mu\text{g/ml}$)
Amikacin	S (16)
Amoxiciline/Clavulanate	R (>64)
Cefepime	R (>32)
Cefoxitin	R (64)
Ceftriaxone	R (>64)
Ciprofloxacin	R (34)
Clarithromycin	S (0.5)
Cotrimoxazole	R (>8)
Doxycycline	R (>16)
Imipenem	R (32)
Linezolid	R (32)
Minocycline	R (>8)
Moxifloxacin	R (8)
Tigecycline	S (0.25)
Tobramycin	R (8)

Mycobacterium abscessus is an atypical fast-growing mycobacterium, ubiquitous in the environment that can be found in water, soil and dust. Several outbreaks of *M. abscessus* skin and soft tissue infections have been reported¹ mostly associated with medical procedures,² cosmetic surgery,³ acupuncture and tattoos.⁴

The skin infection typically presents as nodules, recurrent abscesses or non-healing ulcers. Multiple lesions may be observed at the same time.⁵ The diagnosis is confirmed by positive

cultures from drainage material, surgical debridement or skin biopsy. However, the isolation of *M. abscessus* is very difficult. Therefore, PCR, a rapid diagnostic method that allows both diagnosis and species identification, can be performed. Differential diagnosis is broad and bacterial and fungal infections, granulomatous and tumoral diseases must be ruled out.^{5,6} However, mycobacterium infection secondary to mesotherapy must be suspected when lesions appear in a geometrical pattern or match the sites of mesotherapy injections.

Infections due to *M. abscessus* are difficult to treat because these mycobacteria are intrinsically resistant not only to the classic anti-tuberculous drugs, but also to most of the antibiotics that are currently available.^{6,7} *M. abscessus* can be divided into at least three subspecies: *M. abscessus abscessus*, *M. abscessus massiliense*, and *M. abscessus bolletii* which is rarely isolated. The 2 major subspecies, *M. abscessus abscessus* and *M. abscessus massiliense*, have different *erm*(41) gene patterns, which provides *M. abscessus abscessus* intrinsic resistance to macrolides. For this reason, an individualized therapeutic approach, based on a combination of minimum 2 antibiotics is usually recommended. Surgical management of atypical mycobacterial is sometimes required.^{8,9}

To minimize the risk of infectious complications from mesotherapy, providers should adhere to recommended standard precautions, and follow safe-injection practices with appropriate aseptic techniques, although there are currently no FDA-approved injectable drugs for fat elimination.

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