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Cutaneous Infection in a Tattoo Due to *Mycobacterium Chelonae*: A Report of 2 Cases and a Review of the Literature[☆]

Infección cutánea por *Mycobacterium chelonae* en un tatuaje. Presentación de 2 casos y revisión de la literatura

Skin complications arising from tattoos include contact dermatitis, photodermatitis, lichenoid reactions, granulomas (foreign body, sarcoid), and infection.^{1,2} Small outbreaks of skin infections due to *Mycobacterium chelonae* in contaminated tattoo ink have recently been reported.

Patient 1

Patient 1 was a 33-year-old man who had had a tattoo placed on his right leg 4 years previously. Three months before consulting, he had the shield outlined in black and a gray flame added. Asymptomatic lesions appeared 2 weeks later and were treated unsuccessfully with topical corticosteroids and antibiotics. The patient was then referred to the dermatology department.

Physical examination of the gray flame revealed several papulopustules measuring 1 mm to 4 mm in diameter (Fig. 1A). The border drawn in black ink the same day was not affected. Analysis of a biopsy specimen revealed granulomas with abscess formation (Fig. 1B); Kinyoun staining was negative. *M chelonae* grew in culture 15 days later. The chest x-ray was normal, and laboratory tests (including serology for HIV and hepatitis) were negative. The patient was treated empirically with clarithromycin (500 mg/12 h) for 3 months. The lesions disappeared.

Patient 2

Patient 2 was a 25-year-old woman who had had a black and grey tattoo placed on the dorsum of the foot 5 months previously by the same tattoo artist. Five days later, an asymptomatic lesion appeared on the gray areas. The lesion had been treated unsuccessfully with topical antibiotics and corticosteroids. Physical examination revealed an ery-

thematous plaque measuring 1 cm in diameter that was soft to palpation with occasional pustules on its surface (Fig. 2A). Analysis of a biopsy specimen revealed granulomas with abscess formation; Kinyoun staining showed a small accumulation of acid-alcohol-fast bacteria (Fig. 2B), but culture was negative. The patient was treated with clarithromycin (500 mg/12 h), although the drug was withdrawn in less than a month because of digestive tract intolerance. As the lesion had disappeared, no further treatment was administered.

Discussion

M chelonae is a fast-growing saprophytic mycobacterium that is found in tap water and water tanks and can contaminate surgical material. Skin infections have been reported in surgery, acupuncture, mesotherapy, and tattooing. In the case of tattoos, the infections affect the gray areas, as non-sterile water is added to the black ink.

The first case of a tattoo infected by mycobacteria was reported in 2003. Diagnosis was based on Ziehl-Neelsen staining and positive results in polymerase chain reaction (PCR) analysis. De Quatrebarbes et al⁴ later reported the first epidemic of *M chelonae* in tattoos. Twenty men presented with a rash in the gray area of their tattoos 7 to 10 days after having them performed by the same artist. Culture was positive for *M chelonae* in 13 patients.⁴ Goldman et al⁵ subsequently included these patients in a letter reporting on 48 patients who were tattooed by 2 different artists in Le Havre, France. *M chelonae* was found in 2 bottles of diluted black ink. New cases have since been reported in France,⁶ Australia,⁷ and the United States.^{8,9} Rodríguez-Blanco et al¹⁰ recently reported 5 cases in La Coruña, Spain; 3 were culture-positive and 2 PCR-positive. Table 1 summarizes the cases published to date.

All the cases involved the appearance of papulopustules in the gray areas of the tattoo 1 to 2 weeks after placement. No systemic involvement was recorded. The diagnostic delay (1-5 mo) is noteworthy, as the patients were initially diagnosed with an allergic reaction or bacterial infection and were treated with topical antibiotics, corticosteroids, or both. No standard treatment has been defined, although the most widely used agent is clarithromycin, which, according to Drage et al,⁸ should be prescribed for at least 6 months; however, digestive tract intolerance makes this difficult.¹⁰ Some clinicians have combined clarithromycin

[☆] Curcó N, et al. Infección cutánea por *Mycobacterium chelonae* en un tatuaje. Presentación de 2 casos y revisión de la literatura. *Actas Dermosifiliogr*. 2012;103:842-5.

Table 1 Cases of Skin Infection by *Mycobacterium chelonae* in Tattoos.

Author/Year/ Country	No. of Cases	Time to Appearance	Time to Diagnosis	Histology	Mycobacterial Staining	Culture	Treatment
Wolf and Wolf/2003 ³ / Israel	1	ND	3 mo	Granulomatous dermatitis	+	PCR + atypical mycobacteria	None
Goldman et al./2010 ⁵ / France ^a	48	3-35 d	2 mo (mean)	50% granulomas	ND ^b	13+/30	Clarithromycin in 41 patients + tobramycin (10 patients)
Kluger et al./2008 ⁶ / France	8	10-21 d	2-5 mo	Inflammatory dermatitis and granulomatous reaction	- (+ in ink)	-	Minocycline (1 mo)
Preda et al./2009 ⁷ / Australia	1		2 mo	Inflammatory and granulomatous dermatitis	ND	+	Clarithromycin + moxifloxacin 4 mo
Drage et al./2010 ⁸ / United States	6	1-2 wk	Mean 17.6 (range, 10-22) wk	Inflammatory dermatitis (3 cases) Granulomatous dermatitis (3 cases)	-	3+/6	Clarithromycin 6 mo
Rodríguez- Blanco et al./2010 ¹⁰ / Spain	5	3-30 d	ND	Inflammatory dermatitis (3 cases) Granulomatous dermatitis (2 cases)	-	3 +	Clarithromycin 3-5 mo (2 patients)
Kappel and Cotliar/2011 ⁹ / United States	1	45 d	2 wk	Inflammatory and granulomatous dermatitis	ND	+	Clarithromycin and levofloxacin, 6 mo
Present report, 2011	2	5-15 d	3-5 mo	Granulomatous dermatitis	1+	1+	Clarithromycin, 1-3 mo

Abbreviation: ND, no data.

^a Includes 20 cases reported by De Quatrebarbes et al⁴ in 2005.

^b The article by De Quatrebarbes et al⁴ appears to include some positive cases, although the exact number is not given.

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