

CLINICAL LETTER



Ulcerating plaque and lymphadenopathy in tularemia

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Dear Editors,

recently, case report about a 51-year-old German female patient with unremarkable travel history was published who had an ulcer and regional lymphadenopathy and who was diagnosed with acute tularemia. To confirm the assumption that such cases may now be more frequent in Germany than previously suspected, we would like to add another case report and discuss additional relevant aspects, such as the observed, and for the first time herein reported, spontaneous healing of an infection with *F. tularensis* spp. *holarctica*.

A 69-year-old man observed a rapidly ulcerating plaque over the left scapula (Figure 1a, b). Suspecting herpes zoster, therapy with brivudine was initially administered on an outpatient basis, followed by cefpodoxime on the assumption of a bacterial infection. Neither therapy improved the findings. We saw the patient three weeks later when dense, mildly painful lymph node swelling and erythema with dysesthesias appeared in the left axilla. The patient's recreational history revealed that he was fishing, owned an aquarium, and kept two rabbits in an outdoor enclosure. CT scans showed a small abscess formation in the left axilla corresponding to the clinical picture. Histological examination of biopsies from the plaque revealed suppurative and granulomatous panniculitis. An examination of the lymph node showed granulomatous and necrotic changes.

Thus, an infection was suspected. Likely infections were *Bartonella henselae* (cat-scratch disease), *Sporothrix schenckii* (sporotrichosis), *parapoxviruses* (Orf's disease), Actinomyces or Nocardia (actinomycosis/nocardiosis), Leishmania (leishmaniasis), Brucella (brucellosis) or *Mycobacterium tuberculosis* (cutaneous tuberculosis) or *Francisella* (F.) tularensis.

While the former could be excluded, *Francisella* (F.) *tularensis* spp. *holarctica* was detected in the tissue by PCR.

Correspondingly, serologically elevated IgM and IgG antibodies against *F. tularensis* were present. On the basis of these findings, the diagnosis of an ulceroglandular form of tularemia was made. The patient had been unavailable for some time during which spontaneous healing had begun and was almost complete after 8 weeks (Figure 1c). Hence, we abstained from application of antibiotic therapy and informed the patient of the possibility of disease recurrence, wich however has not occured up to now, 28 months after healing.

Also known as "rabbit plague," tularemia is a rare zoonosis,^{2,3} caused by Francisella tularensis, a Gramnegative, intracellular, nonmotile, aerobically growing, pleomorphic coccobacillus. 1,2,4 The subspecies holarctica is distributed throughout the northern hemisphere and is less virulent compared with the other known subspecies F. tularensis mediasiatica and novicida.^{3–5} Despite occasional reports that spontaneous healing can occur with this subtype,^{2,6} to date cases in central Europe could not be retrieved by us from in the PubMed database for German-speaking countries. Important reservoirs for human infections include various small mammals such as rodents, but also other wild and domestic animals, as well as arthropods such as ticks or horseflies.^{2,4,7–9} Cutaneous infection occurs via skin lesions after contact with infected animals or carcasses, 10 but can also occur after arthropod bites. 1,3,7-9 Depending on the husbandry, infection through domestic animals is possible in principle, though it is the exception. In the case presented, the lack of contact with wild animals, the localization on the scapula and the recreational history suggest transmission by arthropods.

Of occupational dermatological significance is a proven disease for hunters and meat workers (BK 3101, BK 3102 according to Annex 1 of the Occupational Diseases Ordinance [BKV, Berufskrankheiten-Verordnung]).¹¹ The

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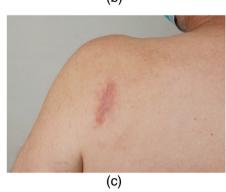


FIGURE 1 (a, b) Rapidly progressive initial clinical finding. (c) Clinical findings after spontaneous healing (8 weeks)

infectious disease is notifiable in Germany. Here, 20–30 cases have been registered in recent years; however, a large number of unreported cases are suspected.^{5,10} In most cases, ulceroglandular and glandular forms of tularemia are found.^{1,7,8} This form usually begins after an incubation period of 3–6 days on average with a nodule at the site of inoculation, which ulcerates within a few days.^{12,13} Later, a regionally painful, partially suppurative lymphadenopathy develops.

Clinically, ulceroglandular tularemia should always be considered if an ulcer (primary effect) is followed within 7–14 days by a regionally painful, partially suppurative lymphadenitis, often associated with flu-like symptoms.

The diagnosis is then confirmed by serological and immunohistological analysis or by PCR,¹⁴ but detection by culture is rarely successful due to special requirements for the culture media.³ As a precaution, the above-mentioned differential diagnoses should be excluded.

Due to the small number of cases, there are no systematic studies on therapy to date.¹³ In many cases, antibiotic therapy with fluoroquinolones or tetracyclines is recommended.¹³ Although previously used antibiotics such as rifampicin or aminoglycosides (for example, streptomycin) represent an effective and previously more frequently described alternative, they are associated with an increased risk of adverse effects or development of resistance.¹³ Penicillins and beta-lactam antibiotics are ineffective.¹³

With our case, we explicitly demonstrate that spontaneous healing can occur after infection with the subspecies *holarctica*. Nevertheless, systemic antibiotic treatment should always be given in cases of acute and confirmed infection or in case of recurrence after spontaneous healing, e.g. due to immunosuppression.

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CONFLICT OF INTEREST

None.

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