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Prolonged course of tick-borne ulceroglandular tularemia in a 20-year-old patient in Germany – case report

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Introduction: Tularemia has become a rare zoonosis in Germany after world war II. Between 1974 and 2005 German health authorities recorded three cases per year on an average. In 2007 and 2008 annual recordings grew to 21 and 15 respectively. The number of estimated unknown cases is considered high. Transmission to humans occurs mainly from rabbits. Ectoparasites like ticks have not been reported as a vector for years though relevant transmission is well-known from other countries.
Investigations and methods: A 20-year-old female patient presented in our hospital with painful axillary lymphadenopathy. She reported a tick bite in her right hand five months ago in Saxony-Anhalt, Eastern Germany, followed by fever, chills and regional lymphadenopathy. Empiric antibiotic treatment with doxycyclin and ciprofloxacin had led to defervescence but no change in painful lymph node swellings. Surgical exstirpation of a cubital lymph node had already been performed three months after the tick bite.
Laboratory findings were normal apart from moderate elevation of C-reactive protein. Serology (ELISA and Westernblot) confirmed the suspected clinical diagnosis of ulceroglandular tularemia. Retrospective real-time PCR (markers *fopA* and *tul4*) for *Francisella tularensis* in lymph node histology preparations taken two months before was negative.
Results: Clinical presentation and serologic test results were consistent with a prolonged course of tick-borne ulceroglandular tularemia and sustained reactive lymph node swelling. The patient desired surgical exstirpation of the aching axillary lymph node. Histology showed reticulocytic, abscess forming lymphadenitis with pseudotuberculosis type granulomatosis and negative acid-fast staining. Culture, capture ELISA and real-time PCR for *Francisella tularensis* performed in native lymph node preparations were negative. A complete recovery was achieved without renewed antibiotic treatment.
Conclusions: According to recent seroprevalence studies, the emergence of tularemia as a rare zoonosis in Germany is clinically underestimated. Our case report illustrates possible appearance of the disease apart from risk groups (e.g. hunters, lumbermen). Ectoparasites like infected ticks have to be considered as vectors even in non endemic regions.