Tickborne melanoma?

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Public awareness of skin tumours and especially melanoma has increased after media coverage and health education campaigns. Exposure to sunshine is recognised as a major risk factor, and patients are increasingly nervous about any changing or new pigmented lesions. We have recently seen two patients who noticed new pigmented lesions on return from their summer holidays which they believed could be melanomas but in fact were ticks.

Case reports

Case 1—An active 78 year old woman noticed an asymptomatic black lesion on her upper right thigh on her return from a touring holiday to France, Switzerland, and Germany, where she had been walking in fields. She covered it with a plaster and after two weeks the top of the lesion appeared to separate. She had a history of malignant melanoma excised 20 years before and was concerned that this was a second melanoma. On examination there was a purpuric eschar at the site with surrounding erythema, and still attached to the plaster was a 7 mm, fully engorged adult female tick, identified as the sheep tick, *Ixodes ricinus*, the vector of Lyme disease and tickborne encephalomyelitis in Europe. The tick later died of natural causes after laying a large number of eggs. A week later the patient developed severe symptoms of malaise, arthralgia, and myalgia, which persisted for two weeks but settled after 10 days' treatment with tetracycline 500 mg four times a day. Serological tests for *Borrelia burgdorferi* did not suggest recent infection.

Case 2—A 72 year old woman was seen on her return from holiday in Oklahoma, United States, where she had started to develop a rapidly growing dark brown "tumour" on her upper chest, which she thought was malignant melanoma. On close inspection the lesion was found to be a 4 mm tick, which was removed

after freezing it with liquid nitrogen. The tick was later identified as an adult female Lone Star tick, *Amblyomma americanum*, an important vector of Rocky Mountain spotted fever and possibly tularaemia. The patient was treated prophylactically with doxycycline and recovered uneventfully.

Comment

These two cases suggest that the differential diagnosis of melanoma should perhaps be enlarged. Early diagnosis of melanoma remains the most important aspect of prognosis, and we fully support referral of any suspicious lesion for urgent dermatological opinion despite the vast majority being benign. Our patients were relieved not to have a malignant tumour as feared, but it is important to remember that these acarine ectoparasites are not rare and can act as vectors for a number of viral, rickettsial, bacterial, spirochaetal, and protozoan diseases, including Lyme disease, tickborne relapsing fever, haemorrhagic fever and encephalomyelitis, Rocky Mountain spotted fever, Q fever, ehrlichiosis, babesiosis, and tick typhus.

Ticks are widespread around the world, including the United Kingdom, tending to occur in woodland or adjacent grassland where deer and small mammals—particularly rodents, their main hosts—are found. *Ixodes ricinus* is known to feed on more than three hundred kinds of animals, including birds and reptiles, and *Borrelia burgdorferi* has been isolated or detected in 24 species of mammals and birds.¹ The prevalence of *Borrelia* (probably *burgdorferi*) isolated from *I ricinus* in Saxony is 12–21%,² and the risk of contracting disease is proportional to the duration of attachment and feeding.

Classic features of Lyme disease include an acute febrile illness with arthritis and a spreading erythematous rash, erythema chronicum migrans, with possible cardiological and neurological sequelae. However, investigation of at risk groups in central Europe show subclinical *B burgdorferi* infection rates of 16–27%.³ Around the world reported cases of Lyme disease are increasing; in the United States endemic areas include the north east, upper midwest, and Pacific coast. Although Lyme disease is not endemic to Oklahoma, with only 33 cases thought to be contracted by residents from within the state in 1985–9, Rocky Mountain spotted fever and tularaemia are endemic in this region.⁴

Preventive measures are important when visiting tick infested areas. These include tucking trousers into socks and checking to ensure that no parasites have been acquired on leaving the area.

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2 Kahl O, Janetzki C, Gray JS, Stein J, Bauch RJ. Tick infection rates with borrelia: *Ixodes ricinus* versus *Haemaphysalis concinna* and *Dermacentor reticulatus* in two locations in eastern Germany. *Medical and Veterinary Entomology* 1992;6:363–6.

3 Mautner VF, Gittermann M, Freitag V, Schneider E. Epidemiology of *Borrelia burgdorferi* infection. Relation of the prevalence rate on determination by serologic procedures. *Nervenarzt* 1990;61:94–7. (In German.)

4 Reiner KL, Huyche MM, McNabb SJ. The descriptive epidemiology of Lyme disease in Oklahoma. *J Okla State Med Assoc* 1991;84:503–9.

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Case 1—Site of bite after spontaneous detachment of tick (inset) *Ixodes ricinus*