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POXVIRUS INFECTION IN A CAT AND ITS OWNER

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Poxvirus infection of cats is an increasingly recognised condition in Central Europe. Affected animals show multiple skin lesions which usually resolve either completely or by scar formation after about four weeks. Some cats, however, develop a severe systemic and fatal running illness. The causative agent is an orthopoxvirus, so far indistinguishable from cowpox virus. Several recent human cowpox infections have been traced to contact with infected cats. The present report describes the first human poxvirus infection in the Federal Republic of Germany in which the source of infection was an infected cat.

A ten weeks old male cat, living in a rural environment, was presented to the local veterinary surgeon with a bite-like lesion at its left nare. Treatment with antibiotics and corticosteroid ointment was started. However after a week, the cat showed multiple skin lesions, resistant to continued therapy. Because of the poor condition, the animal was euthanized another ten days later.

14 days after the appearance of the first lesion in the cat, the owner, living in close contact to the animal, developed a firm nodule of 2 cm in diameter on the back of her right hand. The lesion ulcerated and scabbed, resolving by scar formation after four weeks.

At post mortem examination, the cat showed an extensive ulceration in the face, partly covered by yellow, greasy, scabbing masses. Moreover there were widespread, multiple skin lesions up to 2 cm in diameter. Smaller, solid nodules were covered by an intact epidermis, whereas larger lesions exhibited raised margins and ulcers, sometimes scabbed centres.

Histologically, the margin of the lesions was acanthotic with vacuolar degenerating cells of the stratum spinosum containing large eosinophilic intracytoplasmic inclusion bodies. This area merged into the centre of the lesions with a deep ulceration. An intense inflammatory

infiltration of neutrophils and mononuclear cells, with some eosinophils and mastcells, extended into the corium. Inclusion bodies were also found in the epithelium of hair follicles and sebaceous glands. The diagnosis of poxvirus infection was confirmed by electron microscopic examination. Scab material from the skin lesions of the cat and its owner revealed virus particles of typical poxvirus morphology. Furthermore, identical virus particles were isolated in a cell culture which was infected with scab material. Biological properties of the isolated virus were characteristic for poxviruses.

This is the first poxvirus infection in the Federal Republic of Germany, in which the source of infection was an infected cat. The reappearance of human poxvirus infections has resuscitated the discussion concerning the cessation of smallpox vaccination. Public health authorities should be aware of the risk of increasing human poxvirus infections in a waning population immunity.

The source of infection of cats is still unknown. The virus is thought to be maintained in another reservoir host, probably a small rodent, while cats seem to be nothing but an indicator host. Serological examination of 104 cat sera showed neutralising antibodies against the isolated virus in 13.5% of the cases. Though difficult to interpret, this preliminary serological survey points out, that poxvirus infection of cats may be widespread and should be considered in the differential diagnosis in cases of therapyresistant dermatosis in cats. Further investigations are required to elucidate the pathogenesis and epidemiology of this zoonosis.

Literature

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