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Horizontal transmission of the Leningrad-3 live attenuated mumps vaccine virus.

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Abstract

Here we describe symptomatic transmission of the Leningrad-3 mumps vaccine virus from healthy vaccinees to previously vaccinated contacts. Throat swab and serum samples were taken from six symptomatic mumps cases and from 13 family contacts. Assessment of serum IgG and IgM anti-mumps virus antibodies and IgG avidity testing was performed using commercial test kits. Sera neutralizing antibodies were measured by plaque reduction neutralization assay using the L-3 vaccine mumps virus as the target. All six of the symptomatic mumps cases and three contact subjects tested positive for mumps by RT-PCR. The genomic sequences tested (F, SH and HN genes) of all nine of these samples were identical to the L-3 mumps vaccine strain. All 13 contacts were asymptomatic; however clear serological evidence of mumps infection was found in some of them. The likely epidemiological source of the transmitted L-3 mumps virus was children who were recently vaccinated at the schools attended by the six symptomatic mumps patients described here. The L-3 mumps vaccine virus can be shed and transmitted horizontally, even to subjects previously vaccinated with the same virus.

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