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PAPERS

Persistent measles virus infection of the intestine: confirmation by immunogold electron microscopy

J Lewin, AP Dhillon, R Sim, G Mazure, RE Pounder and AJ Wakefield

Inflammatory Bowel Disease Study Group, Royal Free Hospital School of Medicine, London.

This study sought to investigate persistent measles virus infection of the intestine: a novel protocol for immunogold electron microscopy was developed using a polyclonal anti-measles nucleoprotein antibody on reprocessed, formalin fixed paraffin wax embedded tissue sections. Antibody binding was detected using both immunoperoxidase and light microscopy on tissue sections, and 10 nm gold conjugated secondary antibody and electron microscopy on ultrathin sections. The techniques were validated using both measles infected vero cells and human tissues with established measles infection: these included brain affected by subacute sclerosing panencephalitis and acute measles appendicitis. The technique was applied subsequently to six untreated cases of granulomatous Crohn's disease, and two cases of ileocaecal tuberculosis, a granulomatous control. Mumps primary antibody--applied to both mumps infected vero cells, and measles infected vero cells and tissues studied by immunoperoxidase, and measles antibody on mumps infected cells studied by immunoperoxidase and immunogold--were used as specificity controls: the primary antibodies identified their respective target antigen and there was no antibody cross reactivity. Measles virus nucleocapsids labelled with gold conjugated antibody in both infected cells and tissues, including foci of granulomatous inflammation in five of six cases of Crohn's disease: in the fifth case, the granuloma could not be identified in ultrathin section. In one of the tuberculosis cases, a low level of signal was noted while the second case was negative. Labelling adopted a characteristic pattern in all infected tissues, strengthening the specificity of these findings. This study provides the first direct confirmation of persistent measles virus infection of the intestine.

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Y. D'Souza, S. Dionne, E. G Seidman, A. Bitton, and B. J Ward



No evidence of persisting measles virus in the intestinal tissues of patients with inflammatory bowel disease

Gut, June 1, 2007; 56(6): 886 - 888.

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