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VI330 STRUCTURAL BASIS OF HEMADSORBING SITES DURING THE FORMATION OF SYNCYTIA IN MEASLES INFECTED CELLS.

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The surfaces of cells Infected with measles virus adsorb monkey red blood cells (RBC). In this study, the structure and localization of viral hemadsorbing (HAD) sites and their relationship with antigenic sites and with cell fusion were investigated in measles virus infected Vero cells. Transmission and scanning electron microscopy were combined with immunolabeling, using human anti-measles IgG (Ab) and protein A from Staph, aureus coupled to peroxidase.. In the early syncytia (50-100 2 in diameter), HAD sites were clustered in the center but scattered at the periphery. In contrast, mature giant cells (400 to 500 2) had all HAD sites in the central area which displayed scattered villi. The periphery of the mature giant cells and the mononucleated cells did not hemadsorb but were covered with numerous villi. In the central area, RBC were firmly attached to villi and ridges over nucleocapsids but rarely to viral buds. Villi and ridges under the RBC were covered with antigenic sites which were not detected at the periphery of the mature syncytia. When living cells were treated with Ab at 4℃, complete inhibition of hemadsorption was only observed when RBC were applied to the cells in the cold. In other experiments, cells reacted with Ab at 4℃ were washed, brought to 37℃ and treated with RBC immediately or after 1-24 hrs. After 1-2 hrs, some HAD sites were present only at the periphery of immature giant cells, suggesting that RBC receptors had already emerged in membrane areas where fusion started again. After 24 hrs, the distribution of HAD and antigenic sites was the same as on cells not exposed to Ab. It seems that when fusion begins, HAD sites appeared on the periphery of the syncytia and then move spontaneously towards the center. With cessation of fusion, HAD sites disappear from the periphery of the giant cell. Receptors for RBC are closely associated with antigenic sites and correlated with viral induced fusion but not with virus production.