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Accessory cells as primary target of human immunodeficiency virus HIV infection

We recently reported a high increase in the number of dendritic reticulum cells (DRC) that were positive for the monoclonal antibody KiM 4¹ in lymph nodes from patients with persistent generalised lymphadenopathy (PGL).² Further studies on 12 PGL lymph nodes showed an increase of interdigitating reticulum cells (IDRC) positive for S100 protein and KiM 1¹ in the

T regions. Staining for a proliferation associated antigen with the antibody Ki 67³ showed that most cells within the germinal centres in PGL express this antigen. Double staining with Ki 67 and Kim 4 showed that most of these cells are DRC. In the T region numerous cells were also positive for Ki 67; their distribution and morphological features indicated that they were IDRC.

Immunohistochemically Epstein Barr virus (EBV) was identified in cells of the B region, while cytomegalovirus (CMV) was present in the T and B region. In situ hybridisation detects the EBV genome in most cells of the B region, whereas most of the cells in the T region contain CMV DNA. Staining with an antibody against the gag protein p24 of HIV showed retroviral infection of some lymphocytes and several macrophages, DRC, and IDRC.

Interdigitating cells showed a positive reaction in their cytoplasm, on the nuclear membrane, and within the nucleus. Characteristically, these infected cells were surrounded by a corona of lymphocytes whose cell membranes also stained for p24 (figure).

Our results indicate that HIV or concomitant viral infections, such as EBV or CMV, or a combination, can cause a proliferation of IDRC as well as DRC that have hitherto been regarded as "end cells." The detection of HIV in DRC⁴ and IDRC shows that the presence of the CD⁴ (T⁴) antigen is not a prerequisite for an infection by the retrovirus. The characteristic arrangement of lymphocytes staining for p24—with the reaction still restricted to the cytoplasm and sometimes found only in

areas in close contact with IDRC—around infected interdigitating cells indicates that accessory cells such as IDRC, DRC, and macrophages are the first target of HIV infection and may thus serve as a reservoir for the virus.

H MÜLLER

S FALK

HJ STUTTE

Department of Pathology,
University of Frankfurt,
D-6000 Frankfurt 70,
Federal Republic of Germany.

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Figure
T region of PGL lymph node.
Interdigitating cell positive for
p24 on cell membrane within
cytoplasm and on nuclear
membrane (centre)
surrounded by T4 lymphocytes
(confirmed by double
staining). Their positive
reaction for p24 is restricted to
cell membranes indicating
HIV absorption. (Cryostat
section, direct
immunoperoxidase.) $\times 1000$.

Diagnosis of acute myocardial infarction at necropsy

We were interested to read a report of a method for diagnosing acute myocardial damage at post mortem examination by enzyme analysis of pericardial fluid.¹

When death occurs within a few hours of a myocardial infarct there are often no macroscopic nor histological features to confirm the diagnosis, other than perhaps an impaired coronary arterial supply. Though techniques to show early changes have been described,^{2,3} none has proved universally acceptable, either because it is not readily available or because reproducibility is poor. A method for diagnosing acute myocardial infarction by enzyme analysis of pericardial fluid, as described¹ is therefore very