different serum samples were performed at the same time and with the same lots of reagents.

Results obtained in serological studies showed that the first serum sample obtained from the patient five months after bone marrow transplant was already positive for antibodies to HIV. Specific antibody then increased in serum samples taken up to 16 months after transplant, as demonstrated by ELISA. A persistent high level of antibody was found in all serum samples obtained after this time.

Figure 1 shows the immunoblotting results in the serum sample obtained from the donor at the time of bone marrow transplant and in the various serum samples obtained from the recipient. The immunoblotting pattern of the recipient shows that the third serum sample obtained five months after transplant had IgG antibodies reacting with HIV polypeptides of 160 Kd, 120 Kd, 41 Kd and 24 Kd, with a weak reaction to 66 Kd, 55 Kd and 17 Kd polypeptides. The blood samples obtained at later dates showed were also strongly positive against polypeptides of 17 Kd, 55 Kd and 66 Kd, with a transient reaction to 31 Kd polypeptide.

The patient also manifested transient production of IgM antibody to HIV which, as demonstrated by ELISA, appeared later than HIV specific IgG, being observed only in samples obtained 16, 19 and 24 months after transplant. Immunoblotting analysis revealed reaction of the IgM antibody only with a 24 Kd protein (data not shown).

The immunoblotting pattern of the bone marrow donor serum was significantly different (Figure 1), and in particular was characterized by a strong reaction to p31 and by lack of reactivity to p17. Moreover, no HIV specific IgM was detected in the donor's serum at the time of transplant either by ELISA or immunoblotting (data not shown).

Neither the donor's serum, nor bone marrow recipient's serum samples showed detectable amounts of HIV antigen. The recipient showed a highly significant decrease in the ratio of helper-inducer to suppressor-cytotoxic T cells 24, 36 and 48 months after transplant, the ratio always being between 0.1 and 0.29.

Discussion. The serological data in this case seem to be consistent with the hypothesis that our patient was uninfected at the time of transplant and received HIV infected lymphocytes from her brother. Chromosome analysis, performed at regular intervals after transplant, constantly showed the donor's sex pattern in bone marrow recipient white blood cells, both from bone marrow and peripheral blood. Therefore, the antibody response to HIV present in the bone marrow recipient should mainly be considered the consequence of transfer of a functional humoral immune system already committed to production of antibody to HIV (4, 5). However, the fact that the pattern of antibody response of the bone marrow transplant recipient differed from that of the donor rules out the possibility of exclusive transfer of immunity from donor to recipient. The data suggest that there was continued antigenic stimulation of the transplanted immune system due to the presence of HIV infected cells. The patient showed a highly significant decrease in the ratio of helper-inducer to suppressor-cytotoxic T cells after transplant. The ratio, which was always between 0.1 and 0.29, seems to be lower than that observed in other patients submitted to the same type of transplant (6).

Up to now the patient has had no signs or symptoms which meet the CDC criteria for AIDS or AIDS-related complex. However, as the results of clinical follow-up studies suggest (7), our patient is facing an unusually risky situation as a result of the intrinsic lability of the transplanted immune system and the presence of HIV infection.

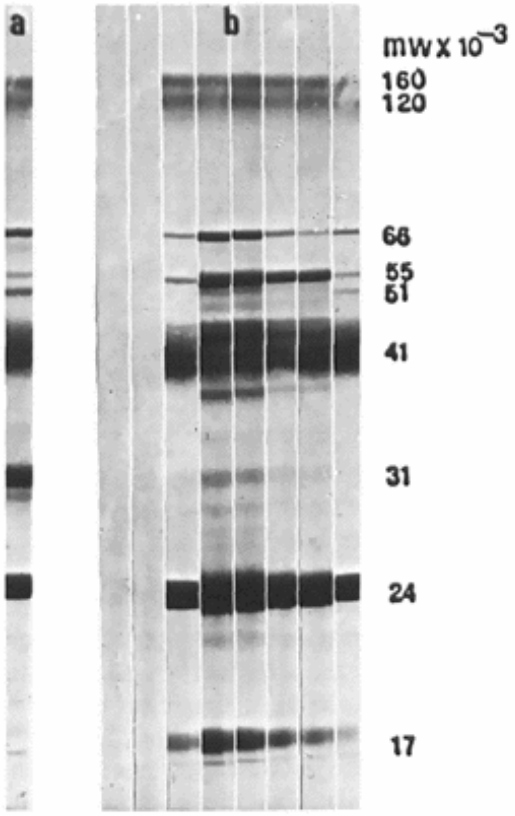

Figure 1: Immunoblotting analysis of serum samples (a) from the donor at the time of bone marrow transplant, and (b) from the recipient before, at the time of bone marrow transplant and 5, 16, 19, 24, 36 and 40 months after transplant.

References

1. Curran, J. W., Lawrence, D. N., Jaffe, H., Kaplan, J. E., Zyla, L. D., Chamberland, M., Weistein, R., Kung-Jong, L., Swinger, G., Amman, A., Solomon, S., Auerbach, D.,