SHORT COMMUNICATIONS

ISOLATION OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) IN INDIA

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In India, antibodies to HIV have been detected in about 122 among 45,000 persons screened by ELISA; however, only 14 cases of the acquired immunodeficiency syndrome (AIDS) have been reported (Dr S. P. Tripathy, personal communication). So far, all the patients who were tested at the NIV, were suffering from AIDS-related complex (ARC) or AIDS had travelled/lived abroad either in the USA, Middle East or Africa. Many of them had a history of receiving blood transfusion during operations or had received blood products; some were intravenous (IV) drug users (NIV unpublished data).

We describe the isolation of HIV in India from a 35-year-old European (HIV_{HC}) an IV drug user who was admitted with a history of diarrhoea, weight loss and oral candidiasis.

His plasma sample was positive for antibodies to HIV in ELISA (Electronucleonics and Wellcome). The western blot (WB) pattern showed antibodies strongly reactive with the viral proteins gp41, p55 and gp120/160 and more faint with p17, p24, p31 and p66 (figure 1). Burke *et al*[1] suggested that scores of 0, 0.5, 1 or 2 be assigned to individual WB bands for negative, faint, medium and strong intensities and a score of 2 and above be considered positive. In the present case the scores of these bands were eight. A WB specific for IgM antibodies was also done and found to be negative (data not illustrated).

Serum antibody assay to HIV recombinant exposed core and envelope antigens (Recombinant ELISA Abbott) demonstrated antibodies to envelope and not to the core antigen. Thus, the results of serological tests on this patient showed that antibodies to both core and envelope protein are present in the WB pattern, whereas in the Recombinant ELISA (Abbott) antibodies were detected only to the envelope antigen. It has been demonstrated that the Recombinant ELISA (Abbott) is more sensitive for the detection of envelope antibody and that the WB is more sensitive for the core antibody[2]. In addition, the disease state has been associated with a reduced incidence of detectable antibodies to the major HIV core protein, p24, in patients with AIDS compared with that in other people infected with HIV[3,4].

Interestingly, the patient's plasma was reactive for antigen in the HIV antigen detection Kit (Abbott) and the presence of HIV antigen was confirmed with 75% blocking in the Abbott "Neutralization" test.

For virus isolation, peripheral blood mononuclear cells (PBMC) were separated from the patient's heparanized blood by banding on Ficoll hypaque. Co-cultivation was carried out with phytohaemagglutinin (PHA-P) stimulated normal PBMC in growth medium containing interleukin-2 (IL-2)[5]. The cultures were fed fresh medium and PHA-P stimulated normal PBMC at weekly intervals. Super-

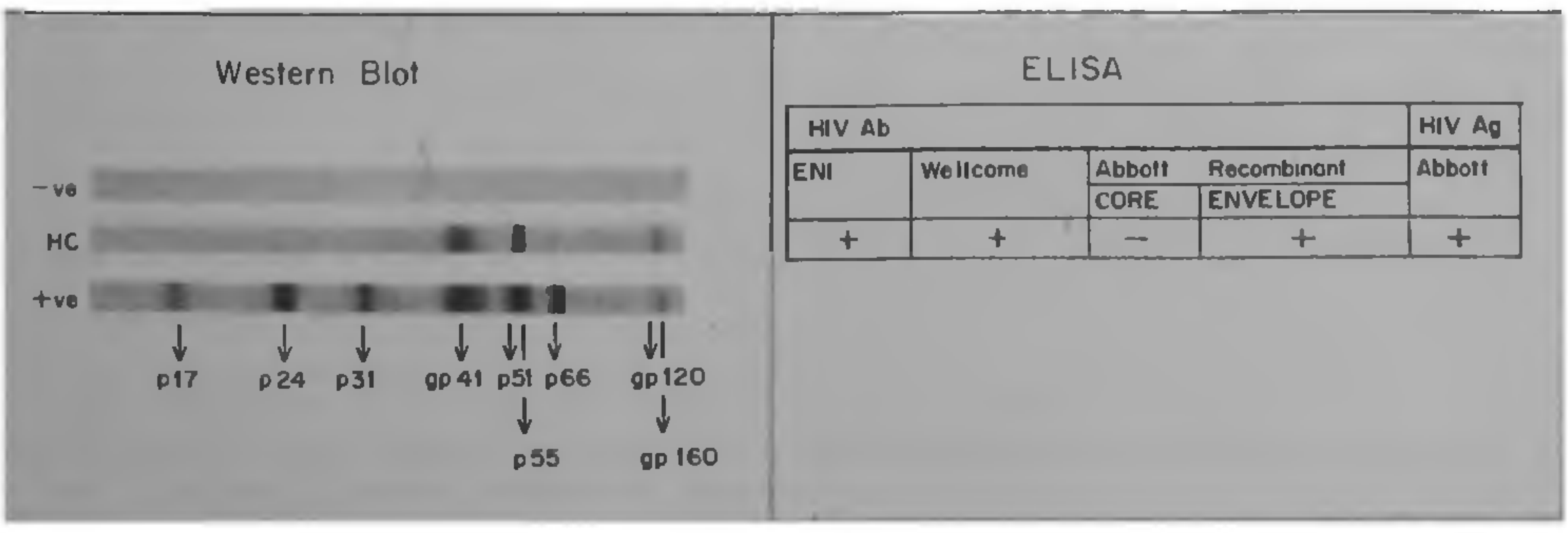

Figure 1. Serological profile of the patient.

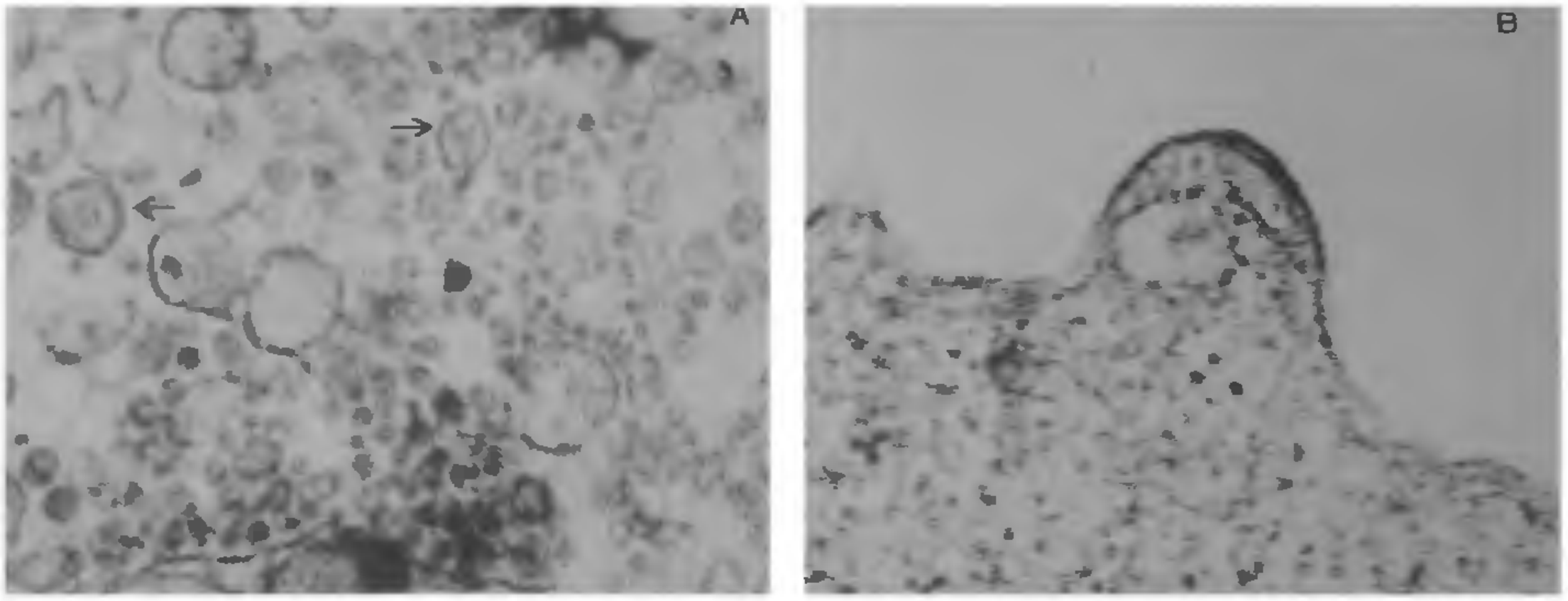

Figure 2A, B. A. Virus-like particles showing the cylindrical core (100,000); **B.** Budding of virus-like particles.

natants collected 8 days post infection (PI) and 30 days PI were harvested and monitored for particulate Mg^{++} dependent reverse transcriptase (RT) activity[6] and for antigen detection (Abbott antigen detection kit).

RT activity of the above-mentioned supernatants were 3.9×10^4 cpm and 4.7×10^4 cpm respectively, and these were significantly greater than the uninfected PBMC control value (3.6×10^3 cpm). Thus, a retrovirus was concluded to be present in these supernatants[7].

An H9 continuous cell line was infected with the supernatant. Electron microscopy of the cell pellet from the infected H9 cell line revealed the presence of virus particles measuring 100–120 nm in diameter. The morphologic appearance of these particles and its budding is consistent with lentivirus. Some of the virus particles showed the cylindrical-shaped cores of HIV (figures 2A, B).

In the present study we have isolated a retrovirus from an IV drug user. That this retrovirus is HIV is supported by antigen detection in the supernatant, and the electron microscopic morphologic features.

We gratefully acknowledge Dr Divekar's help in collecting the sample.

10 October 1987

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PILLOW LAVA OCCURRENCES IN DECCAN TRAP FLOWS AROUND CHHINDWARA, MADHYA PRADESH

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THE present note reports our results on mapping around Chhindwara, and conspicuous occurrence of pillow lava horizons at many places. Of the several occurrences, pillow lavas of the following localities are worth mentioning.

1. A hill cutting section near the 6.4 km stone on Chhindwara-Narsinghpur road opposite to Hindusthan Lever Factory, NE of Chhindwara at 700 m MSL: Bun, ball, balloon, bulbous to ellipsoidal-shaped pillows with 4–8 cm thick-chilled margins represented by glassy material; some of them with radial cracks and generally without any vesicles are found. The pillows, in general, are seen to vary from 30 to 120 cm in diameter. The lower margin of most of the pillows are flattened. Basal parts of some of the pillows are moulded over the top of the