

ISOLATION OF WILD TYPE POLIOVIRUS TYPE 1 FROM CEREBROSPINAL FLUID IN SUB-ACUTE SCLEROSING PANENCEPHALITIS

Pages with reference to book, From 231 To 231

Editor, A 6 year old boy was admitted in the Paediatric Ward of Lady Reading Hospital Peshawar with a history of jerky movements of the body particularly of the head for two months. The abnormal jerky movements were spontaneous and purposeless. There was history of deterioration in school performance and hand writing for the last few months. No history of the generalised convulsions was given. He was fully immunized, no booster dose had been given; there was history of measles at the age of 18 months. On examination intelligence was subnormal, he was not oriented in time and space, his mood was labile-laughing frequently. Speech was impaired, generalized muscle tone was increased, myoclonus was present, limb reflexes were exaggerated and ataxia was present. The cerebrospinal fluid (CSF) was collected for viral studies on 3rd day of hospitalization. His symptoms remained the same and he was discharged from the hospital after 21 days. The cerebrospinal fluid (CSF) was clear, showing no red RBCs and 18 WBCs (all lymphocytes) per cubic mm. Glucose level was 79 mg/dl. Gamma globulin were raised. The CSF was sent to Virology Department, National Institute of Health, Islamabad for virological studies. It was inoculated on cell cultures, after three days of inoculations an enterovirus like cytopathic (CPE) was seen on HEp-2C cell culture. The isolate was identified as poliovirus type 1 by neutralization test. A test of T4OC marker was done and found to be a T-strain. Isolate was characterized as wild type poliovirus type 1 by using monoclonal antibodies by Dr. David Wood, Virology Division, National Institute for Biological Standards and Control, Herts, U.K. Although the portal of entry and primary site of multiplication for most enteroviruses is alimentary tract. The conjunctiva has recently been recognised as the portal of entry and site of multiplication for some of the enteroviruses¹. Although it is common to isolate vaccinestrain of poliovirus from the throat and rectal swab of children who have recently received oral poliovirus vaccine², however, it is very infrequent to isolate the enterovirus from the CSF³. The isolation of polioviruses in the absence of pleocytosis is not common⁴. It is reported that four out of ten neonates with enterovirus isolated from the CSF had fewer than 20 WBCs per cubic mm in the CSF⁵. Krober et al found that 11 Out of 28 infants with positive CSF culture for enterovirus had fewer than 10 WBCs per cubic mmin the CSF⁶. In this case the CSF had 18 WBCs per cubic mm and uncommonly all the cells were lymphocytes. Clinical signs and symptoms are highly suggestive of subacute scierosing panencephalitis (SSPE). It is unusual to isolate the wild type poliovirus from the CSF of a patient of SSPE and very difficult to associate the relationship of isolated wild type poliovirus with any of the symptoms of the patient. We do not know precisely the mode of transmission of virus in this case. It seems possible that pathological lesions of the central nervous system (CNS) due to SSPE may have lead to the invasion of the CNS by the wild type poliovirus⁷ circulating in the environment transmitted through faeces or respiratory droplets or was introduced during lumbar puncture.

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