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Human herpesvirus-6 and the brain

Work continues in Japan on the role of human herpesvirus-6 (HHV-6) in childhood disease (see *Archivist* 1992: 500). A case report in *Archives* in 1992¹ is now followed by a description of 21 children aged between 5 and 15 months who presented with convulsive seizures (Sadao Suga and colleagues, *Annals of Neurology* 1993; 33: 597–603).

All 21 children had the clinical features of exanthem subitum (roseola infantum) and HHV-6 infection was confirmed by isolating the virus from blood (six patients), by demonstrating a significant increase in antibody titre during the illness (five patients), or both (10 patients). The rash of exanthem subitum appeared two to four days after the start of fever. In two children convulsions occurred on the day before the fever. One of these had a single convulsion lasting for one hour and the other had a series of six convulsions each lasting for less than 15 minutes. Ten children had a single generalised febrile convulsion lasting less than 15 minutes and two had two such episodes during the illness. Two had prolonged left sided convulsions lasting for one and two hours followed by transient left sided hemiparesis. One child had a single generalised febrile convulsion lasting for 45 minutes. Four had focal seizures and prolonged unconsciousness and were diagnosed as having encephalitis/encephalopathy (E/E).

Nine of the 17 children without E/E had cerebrospinal fluid examined with normal findings in all of them. Of the four patients with E/E three had a modest lymphocytic pleocytosis. HHV-6 viral DNA was detected in the cerebrospinal fluid using the polymerase chain reaction in six of 11 patients tested including three of the four with E/E.

The patients with E/E all had abnormal EEGs, two of them showing periodic complexes in the temporal regions as is seen in herpes simplex virus encephalitis. These two patients both made a complete recovery. One child with E/E (the one previously described in *Archives*¹) had a flat EEG by day 2 and died after 21 days. Another had 'an occasional epileptic seizure' on follow up. The remaining 19 children made a full recovery without sequelae.

Abnormalities on cerebral computed tomography were found in all four children with E/E. One showed a low density area in the left frontotemporal region on the first day of the illness, one (the one who died) had a normal scan on day 1 but low density lesions in both hemispheres and bleeding into both Sylvian fissures on day 9. The two others also had normal scans initially but later developed low density areas and atrophy.

It has long been held that exanthem subitum is an important cause of febrile convulsions. In most children it is benign but occasionally it turns violent. Why that is so will no doubt be the subject of further research.

ARCHIVIST

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