GENERALIZED HAEMORRHAGIC VACCINIA DURING REMISSION OF ACUTE LEUKAEMIA

BY

JANINA KOZŁOWSKA and LECH SZTYMELA

From First Paediatric Clinic and the Clinic for Infectious Diseases of Childhood, Warsaw

(RECEIVED FOR PUBLICATION MARCH 19, 1962)

A girl, 2½ years of age, was admitted to hospital on February 5, 1960, at the Clinic in a state of acute generalized vaccinia. She had been admitted to the Paediatric Clinic at the age of 17 months from August 21 to October 20, 1959, where a diagnosis of acute leukaemia was established by the clinical picture, the peripheral blood studies and bone marrow examination. After blood transfusions, administration of prednisone (3 mg./kg./day) and 'amethopterin' (methotrexate) (1·25 mg./24 hours) there was a remission and the child was discharged home and the parents instructed to continue methotrexate. For the next 10 months the little girl remained in remission. During mass vaccination in the area the parents, although they had been informed in the clinic that the child should never be inoculated, thought the child's health was good, and had her vaccinated against smallpox.

She was admitted to the Clinic for Infectious Diseases of Childhood three weeks after the vaccination.

On admission, in addition to a large reaction in the vaccinated area, 42 vaccinia pustules of various size were noted on the whole body, and some on the buccal membranes. The child had high fever (39-40° C.) and was pale and restless. The peripheral blood studies revealed a distinct hypochromic anaemia, diminished platelet count (71,000/c.mm.) and leucocytes (5,400/c.mm.), with neutrophils but no leukaemic cells. The bone marrow, however, showed a significant leukaemic reaction.

She received a series of blood transfusions totalling 1,100 ml., as well as gamma-globulin (20 ml.) and 50 ml. blood intramuscularly from a child just vaccinated against smallpox. The treatment included antibiotics (penicillin, streptomycin, erythromycin) and the treatment of the leukaemia with prednisone and methotrexate was continued. Although the number of pustules rose to 67, it seemed, after 10 weeks, that the viraemia was mastered, since no more eruptions appeared and the earlier pustules began to heal, forming large granulating surfaces. The buccal ulcers also started to heal. Successive examination of the peripheral blood and bone marrow picture did not show any aggravation of symptoms of leukaemia. The temperature dropped and the child's general state improved.

However, 12 weeks after admission to hospital there was a sudden relapse with high temperature (40° C.),

fresh haemorrhagic eruptions and the old ulcerations started to bleed.

The child died 24 hours after the recurrence with symptoms of acute haemorrhagic diathesis.

Autopsy revealed moderate ventricular dilatation; moderate hydropericardium; pulmonary and meningeal oedema; punctate haemorrhages of gastric mucosa and circumscribed vesicles of jejunal mucosa; hepatic distension; multiple vesicular and scarred ulcers of the skin; general anaemia of organs particularly of brain and kidneys.

Histopathological examination of the bone marrow showed significant leukaemic changes of moderate degree.

Discussion

Generalized haemorrhagic vaccinia, regardless of its cause, is usually a fatal illness. In our case the vaccination was effected in a child with a significantly diminished immunity related to the leukaemic state. The parents had the child vaccinated against the physician's instructions, deceived by her well-being during a period of remission, and the vaccination (and not leukaemia) was the direct cause of death.

FIG. 1.—Showing appearance of child on day of admission.

FIG. 2.

Summary

A 2½-year-old girl with acute leukaemia, vaccinated against smallpox during a remission, died of generalized haemorrhagic vaccinia after 12 weeks despite all treatment.

Editor's Note. A similar case of generalized vaccinia after vaccination of a patient with leukaemia was reported by Davidson and Hayhoe (1962).

REFERENCE

Davidson, E. and Hayhoe, F. G. J. (1962). Vaccination and leukaemia. *Brit. med. J.*, 1, 790.

FIG. 3.

FIGS. 2 and 3.—Third week of infection, second attack of eruption.