ECZEMA HERPETICUM

Kaposi's Varicelliform Eruption*

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Kaposi, in 1887 described a "very alarming complication of eczema" characterized by a high fever, a vesicular umbilicated rash, and marked restlessness, for which he proposed the term "eczema herpetiform."[1] In 1941, Seidenberg showed that this vesicular eruption was due to the herpes simplex virus. This etiology was verified by several Americans who pointed out that in the majority of cases this is a primary herpetic infection accompanied by severe systemic symptoms and is occasionally fatal.[2]

This paper will present three cases of Kaposi's treated at Hacettepe Children's Hospital, and review some of the literature on this complication of dermatitis and pyoderma.

Case Reports

Case 1: E. E., a four month old boy was admitted to the hospital November 1, 1960, with a three day history of sores and ulcerations about the face, accompanied by high fever. The child had had eczema since he was forty days old, which had been treated with a tar compound and hydrogen peroxide soaks, without benefit. He was breast fed and the mother described furuncles on her breast for the four days prior to the child's admission to the hospital.

On admission, the patient's temperature was 39.3 C. and his cheeks were covered with macerated confluent sores which were oozing pus. Similar isolated ulcers appeared on the forehead and neck. Surrounding these lesions on the cheek and neck, erythematous vesicles, some of which were umbilicated, were noted. Crepitant rales were present in the left lung.

The white count was 10,000 per cmm. with 46 per cent granulocytes and 54 per cent lymphocytes. Beta-hemolytic streptococci and "pathogenic" Staphylococcus aureus were cultured from the pus of the lesions about the face. The chest roentgenogram was compatible with the diagnosis of bronchopneumonia.

The child was placed on erythromycin and penicillin treatment with continuous skin soaks of 0.1 per cent Rivanol solution. No new vesicles appeared after admission. The vesicles umbilicated, then became encrusted, and finally dessicated and healed. Slight residual scarring remained. He became afebrile on the fifth hospital day and was discharged to his home on the thirteenth day with all skin lesions completely healed.

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Case 2: Y.T., a six month old boy was admitted on October 31, 1960, because of extensive eczema and secondary infection. The eczema was first noted when the child was two months old, it had become progressively worse, and in the fifteen days preceding admission had spread to involve the whole body. He had been started on breast milk but after two months had been taken from the breast and fed cow's milk.

Physical examination revealed a malnourished white male with a temperature of 38.8 C. and extensive ulcerations and abrasion of the skin on the cheeks, forehead, scalp, ears, hands, legs and trunk. The white count was 55,800 per cmm. with 76 per cent granulocytes and 24 per cent lymphocytes. Skin cultures showed "pathogenic" Staphylococcus aureus initially and later Pseudomonas aeruginosa.

The child was placed on erythromycin and continuous Rivanol soaks. The day after admission, case 1, with eczema herpeticum, was admitted to the same room as this patient, case 2. Y. T., slowly improved until the sixth day when his temperature began to rise, going as high as 40 C. On the ninth day vesicles, some of which were umblicated, appeared on the face and neck. (Cultures of these were taken and proved to be herpes simplex virus.) More vesicles appeared during the next two days, and rapidly became umbilicated. After several days the lesions became encrusted and dessicated. The child became afebrile on the sixteenth day, all skin lesions were cleared on the twenty-third day and he was sent home on the twenty-eighth day.

Case 3: U. A., a five month old male with seborrheic dermatitis, was admitted November 1, 1960, to the same room as case 1. The seborrheic dermatitis had first been noticed when the child was three months old, it had become generalized and secondarily infected and had not responded to treatment. He was breast fed and received cereals. The child was moderately malnourished, the temperature was 37.2 C. and an erythematous papular rash covered scalp, trunk and extremities. In some areas, especially over the cheeks, behind the ears and in the scalp there were ulcerated encrusted lesions draining serosanguineous fluid. Conjunctivitis and phimosis were also present.

He was put on erythromycin, continuous 0.1 per cent Rivanol soaks and terramycin opthalmic ointment. His skin lesions improved rapidly and by the tenth day there was only a small area behind the ears which had not cleared.

On the twelfth hospital day his temperature rose to 39 C. and the next day an exacerbation of the dermatitis was noted. One day later erythematous umbilicated vesicles were noted at the periphery of the cheeks and on the following day these had spread to the ears, behind the ears and to the right deltoid area. A culture of these lesions showed herpes simplex virus.

New vesicles continued to appear for the next three days. The patient became afebrile on the nineteenth day and by the twenty-fifth day his skin lesions had again cleared. Unfortunately this patient contracted diarrhea followed by staphylococcal pneumonia and died forty days after admission.

Discussion

The danger of herpes infection to the patient with extensive skin disease is well documented in medical literature but not stressed in most of the standard text books. The hospital stay of case 2 and case 3, who had pyoderma and dermatitis, was prolonged because of the

secondary infection with herpes simplex virus. Case 3 subsequently died of staphylococcal pneumonia.

The patients mentioned in cases 1,2 and 3 illustrate the typical course of this disease: the abrupt onset of spiking temperature to 39-40 C. followed in twenty-four to forty-eight hours by erythematous umbilicated vesicles which subsequently become pustular and then dessicate. The vesicles are located primarily around the head and neck but occasionally extend to involve the elbows and wrists. The entire course of the illness generally takes from seven to ten days, with fresh eruptions of vesicles for the first two to four days.

The systemic symptoms are generally related to the extent of skin involvement and to the presence or absence of secondary skin infection. Of the 67 cases reviewed by Barton and Brinsting, 53 had a previous history of dermatitis; 51 were three years old or younger; and 17 died. Mortality rates of 9 percent in adults and between 10 and 25 percent in infants have been reported. [4,5] In some of these cases death appeared to be due to systemic spread of the virus.

Morphologically the skin lesions of Kaposi's resemble those of herpes labialis and herpes stomatitis. The lesions first appear as erythematous papules, but rapidly become vesiculated and umbilicated. As the disease progresses the vesicles break down, become crusted over, and finally heal, frequently leaving residual scars. Microscopically the lesions are characterized by the formation of multinucleated giant cells and intranuclear inclusion bodies. [4,7] Under the electron microscope, the virus appears to be an indented spherical body approximately 100 to 150 millimeters in size. [2]

The diagnosis of eczema herpeticum is generally made on the basis of the clinical findings. It can be supplemented and confirmed by microscopic examination of a smear of the vesicle for type of inclusion bodies, by the demonstration of a rising complement fixation titer in the patient, by growth of the virus on egg allantoic membrane or cornea of the rabbit and its subsequent neutralization by specific antiserum,or by the direct demonstration of the virus in the vesicular lesions by fluorescent antibody technique. [2] In the latter technique, a smear is made from a vesicular lesion, stained with specific fluorescein-coupled antiserum and examined under a fluorescent microscope. [8] The herpes simplex virus was demonstrated in two of our patients by inoculation of the egg and the rabbit cornea.

Eczema vaccinatum can be differentiated from eczema herpaticum by history of exposure of the patient to smallpox vaccination, by viral isolation and antibody studies, and the demonstration of the

inclusion bodies of smallpox (Guarnieri bodies) from scrapings of the lesions.[4]

Treatment of the patient is entirely symptomatic with the control of secondary infections. Saline soaks to remove the encrustations and mild antiseptic solution to prevent and control secondary infections are indicated. If evidence of secondary infection occurs, cultures should be taken and antibiotic therapy started. Occasionally plasma and/or blood transfusions may be necessary.

Prevention of secondary herpetic infection is difficult because the virus is endemic. Adults with herpes labialis should, of course, avoid contact with children who have eczema. If a child with herpes simplex infection is admitted to the hospital he should be strictly isolated from other patients, especially those with skin diseases. If contact is accidental or unavoidable, the child with skin disease should be given 0.1 cc. of gamma globulin per kg. every two weeks for as long as he is exposed to the herpes virus.[6]

Summary

The history, physical findings and hospital course of three patients with eczema herpeticum are reviewed. In two of the patients the disease was iatrogenic in that the disease was contracted in the hospital from the third patient. Individuals with herpes simplex infection should avoid contact with patients who have extensive skin disease, especially if they are young infants.

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