from intermittent pains in the epigastrium, not aggravated by food. These complaints continued for approximately three years, after which a severe haematemesis occurred, presumably gastric in origin. Then and until May, 1951, her condition was satisfactory. At that time she started complaining of pain in the epigastrium, aggravated by food, and of acid eructations.

On examination the patient was pale and emaciated. The lungs, liver, heart, and kidneys were normal. A fixed hard mass the size of an egg was palpated in the epigastrium. Its upper end was covered by the left costal margin. The urine was normal. A blood count showed: red cells, 4,200,000; Hb, 84%; white cells, 6,800, with a normal differential count. The other laboratory tests were negative. X-ray examination of the stomach demonstrated a considerable niche, about 4-5 cm. wide, situated below the cardia on the lesser curvature. A clinical diagnosis of penetrative callous ulcer of the lesser curvature was made.

Operation.—On March 14, under thialbarbitone, nitrous oxide, and tubocurarine anaesthesia, a high median incision was made. At the lesser curvature of the stomach a tumour the size of a fist was found, extending from the cardia to the pylorus. As the diagnosis was malignant tumour, a total gastrectomy was performed. The spleen and the tail of the pancreas were also removed. The patient was returned to the ward in good condition. During the operation 500 ml. of blood and 500 g. of polyvinylpyrrolidone ("subtosan") were transfused.

The histological report stated: "Large neurinoma arising from the outer stomach wall of the lesser curvature. Ulceration at the middle of the tumour, about 3 cm. in diameter and 3 cm. deep. Chronic hypertrophic gastritis. No signs of malignancy were found. Diagnosis, neurinoma of the stomach."

The patient made an uneventful recovery and was discharged on April 3.

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Last month veterinary, public health, and laboratory experts met in Vienna to discuss measures for the control and eventual eradication of certain animal diseases which are transmissible to man. The conference, which was jointly sponsored by the United Nations Food and Agriculture Organization and the European Regional Office of the World Health Organization, was concerned with the zoonoses which are of special importance to European communities. Those discussed in most detail were rabies, brucellosis, bovine tuberculosis, leptospirosis, and Q fever. It was emphasized by speaker after speaker during the discussions that these diseases, although they differ in relative importance from country to country, are all of concern to large areas of Europe, where they not only cause widespread suffering and death among human beings but are also responsible for enormous losses in agriculture and animal husbandry. It is expected that as a result of the Vienna meeting a number of European countries now relatively free from rabies, for example, will enact suitable legislation to guard against the reintroduction of the disease to their territories.

PRIMARY GENERALIZED INFECTION CAUSED BY HERPES SIMPLEX VIRUS

BY

W. H. J. BAKER, M.B.

Clinical Pathologist, Hereford Hospital Group

ANN M. LAWTON, M.D.

Dermatologist, County Hospital, Hereford

AND

K. MCCARTHY, M.D.

Lecturer in Bacteriology, University of Liverpool

The condition described by Kaposi (1895) as a complication of eczema infantum and now called Kaposi's varicelliform eruption can be caused either by vaccinia or by herpes simplex virus. Thus Sommerville, Napier, and Dick (1951) have reported four cases proved to be caused by vaccinia virus, while herpes simplex virus has been isolated from clinically similar cases (Blattner *et al.*, 1944; Barton and Brunsting, 1944; Lynch *et al.*, 1945). The clinical disease resulting from infection with either of these viruses seems to be indistinguishable, and the name "Kaposi's varicelliform eruption" indicates a clinical picture which may be caused by at least two distinct viruses. Recently the terms "eczema vaccinatum" and "eczema herpeticum" have become current, and their use seems to be preferable.

In the case reported here the diagnosis was not difficult, the patient giving a history of eczema and of contact with a case of herpes simplex infection. The interest lies in the clear history of close contact being followed seven days later by a primary generalized infection with a skin eruption.

Case Report

A single girl aged 20 had suffered from attacks of asthma and eczema of the face, hands, and wrists since she was 3. Periodically the exacerbations of her skin condition had necessitated admission to hospital. When she was 7 years old her condition had been diagnosed in the skin department at St. Thomas's Hospital as falling into the "eczema-asthma group of diseases." On January 10, 1950, when she was free from asthma but had a mild chronic eczema of her face and hands, she came into direct contact, through kissing, with her boy friend, who had a labial cold sore. On January 17 she was seen by her general practitioner, who noted an urticarial type of rash on her face. Two days after this the rash seemed to have become secondarily infected, the girl had a sore throat, and white patches were present on her tonsils. Treatment with injections of procaine penicillin was begun at home.

When seen in consultation on January 21, 11 days after exposure, the patient appeared ill and was having pain and difficulty when swallowing. She stated that the illness had started with a few small blisters at the side of her mouth and a painful swelling beneath the chin. Her temperature was 101.6° F. (38.6° C.), and the skin showed a pustular eruption, most pronounced on the face and on the dorsum of the hands and wrists—the areas previously affected by eczema. The eruption was also present on the neck, the upper part of the chest, the inner aspects of the forearms, the thighs, and the natal cleft. The pustules were of uniform size and were umbilicated except where they had coalesced. The underlying skin was red, and on the face markedly oedematous. The mucous membrane of the lips was affected, and there appeared to be lesions on the tonsils.

The conjunctivae were congested. Enlarged and tender submental, cervical, axillary, and inguinal glands were noted, but the spleen was not palpable.

The patient was admitted to hospital on January 21 and the penicillin injections were continued. For three days after admission she was pyrexial, but the next day, the eighth day of illness, her temperature was normal and her general condition very much improved. The pustules dried up, the scabs separated, and she was discharged on February 10, the 24th day from the onset of the illness. She was left with chronic eczema of the face and dorsum of the hands, but almost no trace of the lesions apart from some superficial scarring.

The patient had never been vaccinated, and, so far as she knew, had not been in contact with a recently vaccinated person before her illness started. No history suggestive of previous herpes simplex infection could be obtained. Eighteen months have passed since her illness, and she has not so far suffered a recurrence of herpetic infection.

Laboratory Investigations

In cases of this kind it is necessary to isolate the causative virus from the patient's lesions by inoculating susceptible animals and to identify the virus by histological and immunological means. In addition, it is generally necessary to show that the patient's infection is a primary one by demonstrating the development of antibody in his or her blood serum.

Smears and cultures from a pustule and from the conjunctival exudate showed staphylococci. Further smears from lesions on the chin were stained by Gutstein's methyl violet method (Gutstein, 1937), but showed no evidence of vaccinia-like elementary bodies. A number of crusts from the patient's chin were extracted with buffered distilled water and the extract was inoculated on the chorio-allantois of 12-day chick embryos. After three days' incubation these membranes showed semiconfluent lesions which to the naked eye resembled those of herpes simplex. Sections of these showed no intranuclear inclusions, but degenerative nuclear changes were pronounced and later egg passages showed typical inclusions.

To confirm the identity of the virus, equal volumes of the crust extract were mixed with equal volumes (0.1 ml.) of immune serum (from a person subject to recurrent herpes) and with normal serum from a non-herpetic subject. The first serum was known to contain herpetic antibody, while the second had none. All sera were inactivated by heat before testing. The mixtures after standing at room temperature for half an hour were inoculated on to the chorio-allantois of 12-day chick embryos. The lesions resulting after three days' growth were counted. The results are shown in Table I. It can be seen that 98%

TABLE I.—*Neutralization of Patient's Virus by Herpes Immune Serum*

Inoculum	Lesion Counts	Mean
Normal serum + virus from patient ..	84, 111, 112, 120	107
Immune „ + „ „ „ ..	4, 3, 2, 0	2

neutralization of the patient's virus occurred in the mixture made with herpes immune serum. This result, together with the histological findings, indicates that the virus from the patient's lesions was herpes simplex.

Several samples of the patient's serum were available for estimation of antibody. Complement-fixation and virus-neutralization tests were made, using these samples of serum and a known strain of herpes virus as antigen. The method of Hayward (1950) was used for the complement-fixation tests. The virus-neutralization tests were made on the chorio-allantois of chick embryos. The results are shown in Table II.

Antibody is seen to be already present in the first sample, taken on the seventh day of illness. The antibody titre continued to rise and there was a fourfold increase in complement-fixing titre from 1/32 on the seventh day to 1/128 on the twenty-seventh day.

TABLE II.—*Development in Patient's Serum of Neutralizing and Complement-fixing Antibodies for Herpes Simplex Virus*

Serum Collected on	Neutralization Test. Percentage of Herpes Virus Neutralized by Serum in Dilutions of		Complement-fixation Test: Serum Titres
	1/10	1/100	
7th day of illness ..	50	47	1/32
27th „ „ ..	77	63	1/128
Normal human serum (no antibody) ..	0	Not tested	Neg. 1/5

Discussion

The recovery of herpes simplex virus from the skin lesions of this patient, together with the rise in antibody titre in the serum, makes it almost certain that this was a case of generalized primary infection with herpes simplex virus. Although a serum sample was not taken before antibody had appeared it is known that serum titres of persons liable to recurrent herpes infection do not show an increase in antibody after the recurrence of a herpetic lesion (Gajdusek *et al.*, 1952). The findings of those authors in this matter agree with our own unpublished observations in Liverpool.

We have no evidence that the spread of infection to the skin from the primary lesion in this patient was blood-borne, although this would seem likely in view of the almost simultaneous widespread skin eruption. It may be that when the primary infection with herpes virus gives rise to severe constitutional disturbance, as occasionally happens (Scott *et al.*, 1941), there is a generalization of the virus, with viraemia. Ruchman and Dodd (1950) recovered virus from the blood in a case of herpetic rhinitis, although they failed in other primary herpetic infections.

Possibly a transient viraemia in primary infections with herpes simplex virus is commoner than at present appears, and only in people whose skin is already damaged by eczema do lesions result from the viraemia. Kaposi himself noticed that, while the largest number of vesicles occurred on the already eczematous skin, smaller groups appeared on the previously intact skin of the neighbourhood, and Kipping and Downie (1948) reported a case of generalized herpes infection which cannot be described as Kaposi's varicelliform eruption, since the lesions occurred on normal skin in a non-eczematous subject.

Vaccinia virus is said to be present in the blood of most recently vaccinated persons (Herzberg-Kremmer and Herzberg, 1930-1), and this may explain those cases of Kaposi's eruption due to vaccinia virus which occasionally complicate vaccinations in eczematous subjects. The alternative explanation is that the eczematous lesions are infected by direct transfer of virus from the vaccination site. Boake *et al.* (1951) have described a case of recurrent Kaposi's varicelliform eruption due to herpes simplex virus in a person who was already herpetic when he became eczematous, and they favour the view that, in this rare case of recurrent eruptions, widespread skin infection in the first instance was probably the result of transference from a herpetic lesion on the lip. Which of these two possible modes of spread is the more usual is not known.

Summary

A case of Kaposi's varicelliform eruption due to the virus of herpes simplex is reported. This virus was

recovered from the lesions, and there was a significant increase in antibody in the blood during the course of the illness.

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TWIN PREGNANCY IN THE AFRICAN

BY

W. FRASER ROSS, M.B., Ch.B., B.Sc.

(From the Government Medical Service, Southern Rhodesia)

A study of twin pregnancy in the African of Southern Rhodesia has been made with a view to determining any peculiarities which might be present. It is known that the primitive African in Mashonaland, the northern part of Southern Rhodesia, had a tribal custom whereby twins were put to death immediately after birth. Bullock (1950) states that the Mashona killed any twins which were born alive because of their supposed abnormality. In view of the frequency of their occurrence, it is difficult to see why they were regarded as such an abnormality.

Material

The maternity unit of the Harari African Hospital admits all African women in labour from Salisbury and the surrounding areas. Many of these women are seen for the first time when in labour, but some two-thirds attend the hospital and municipal clinics for pre-natal care. A study has been made of 100 successive sets of twins born in hospital, where the details of the labour have been carefully kept. This hospital is staffed by qualified African midwives, with African maternity assistants in training. The African staff is supervised by a minimum of European nursing staff, who are largely concerned with administration and training of the pupils.

Results

Incidence.—In 3,464 births which took place in the hospital there were 100 sets of twins born—an incidence of one set of twins in every 35 births.

Position of Foetus.—An analysis of the relative frequency of the positions of the foetuses is shown in Table I, and comparison is made with a much larger series—Leonhard's 1,840 cases, quoted in most textbooks.

TABLE I.—Percentage Incidence of Positions of the Foetuses

Position of Foetus	Harari Hospital (98 Cases)	Leonhard (1,840 Cases)
Vertex; vertex	33.7%	38.53%
Vertex; breech	19.4%	21.19%
Breech; vertex	28.5%	14.35%
Breech; breech	12.2%	10.76%
Vertex; transverse	4.1%	8.32%
Transverse; vertex	0.0%	0.87%
Breech; transverse	2.1%	4.29%
Transverse; breech	0.0%	0.77%
Transverse; transverse	0.0%	0.92%

Distribution of Sex.—In the 100 sets of twins studied there were twin males in 25, twin females in 29, and one of each sex in 46. Unfortunately the placenta was not kept each time for careful study, and it is impossible to state how many of these 54 cases of similarly sexed twins were identical.

Interval Between Births.—In 89 sets of twins the birth of both was spontaneous, and the interval between the birth of the first and that of the second twin is analysed in Table II.

TABLE II

	Interval Between Birth of Twins in Minutes															
	5	10	15	20	25	30	35	40	45	50	60	80	110	130	160	190
No. of twins	14	21	20	10	4	6	1	4	1	1	2	1	1	1	1	1

The intervals are divided into five minutes, and the average was found to be 25 minutes between the first and the second twin. One remarkable case was not included in this analysis because of the extremely prolonged interval between the birth of the twins—namely, 136 hours.

Obstetrical Complications.—Caesarean section was carried out on three occasions—once for placenta praevia Type III, once because of a previous classical caesarean section, and once because the patient was admitted with a prolapsed oedematous cervix, which had been lacerated through outside interference. A prolapse of the cord occurred on two occasions with the first twin, and six times with the second twin. Forceps delivery, because of delay in the second stage, was carried out twice on the first twin and once on the second twin. On one occasion there was a retained placenta with a post-partum haemorrhage which required manual removal, and on five occasions an internal version was carried out because of a transverse lie in the second twin.

Stillbirths and Neonatal Deaths.—Among the 200 babies born there were 25 stillbirths and 24 neonatal deaths. The foetal mortality is therefore 24.5%. In Table III the foetal

TABLE III

	Foetal Mortality
Harari Government Hospital (1950-2)	24.5%
Simpson Memorial Pavilion, Edinburgh (1946)	17.9%
St. Mary's Hospitals, Manchester (1944)	16.0%
Liverpool Maternity Hospital (1945)	11.9%

mortality is compared with that from hospitals in Britain, and it will be seen that the foetal mortality in this series is from 50 to 100% greater than in British hospitals. All the neonatal deaths occurred in babies weighing less than 5 lb. 8 oz. (2.5 kg.), and in general their death was due to prematurity.

Incidence of Prematurity.—In 198 babies resulting from twin births whose birth weight was known, 143 (71%) were less than 5 lb. 8 oz. (2.5 kg.). Houghton and Ross (1952) found the incidence of prematurity to be 16.6% for African singleton births in this district. Table IV shows the per-

TABLE IV.—Percentage Distribution of Birth Weight

	More than 5 lb. 8 oz. (2.5 kg.)	Less than 5 lb. 8 oz. (2.5 kg.)
All babies	28.5%	71.5%
Stillbirths	30%	70%
Neonatal deaths	0%	100%
Live births	27%	73%

centage weight distribution of different categories and reveals that, although the stillbirths and live births appear to be as common when less than 5 lb. 8 oz. (2.5 kg.) as when more than that weight, the neonatal deaths all occurred in the lower weight group.