HAEMORRHAGIC CHICKENPOX IN A RHEUMATIC CHILD ON STEROIDS

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Chickenpox is normally a highly infectious disease causing a mild illness. However, in patients with malignant disease or who are being treated with corticosteroids a severe haemorrhagic form of the disease may occur which is often fatal. We here report a case of varicella haemorrhagica in a nine year old girl who was being treated with steroids for rheumatic fever.

Case Report

A nine year old girl was admitted to St. Luke's Hospital in June 1972 with acute rheumatic fever following acute tonsillitis two weeks before admission. On examination she was feverish and found to be in heart failure, with tachycardia, tachypnoea, and enlargement of the liver. Investigations at this stage were as follows: Hb 14.2 g %; WBC, 24,200/cu.mm with 81% neutrophils, 11% lymphocytes and 8% monocytes; E.S.R. 132 mm in 1 hour; Antistreptolysin-0 833 units/ml; β-haemolytic streptococci were grown from a throat swab; agglutination reaction against *Brucella melitensis* and *Salmonella typhi;* negative; Blood culture sterile; routine urinalysis, normal. She was initially treated with Aspirin and intramuscular Penicillin. A few days after admission Prednisone 60 mg daily and Digoxin were added to the regime. She responded to this treatment and Prednisone was reduced gradually to 25 mg. daily. In the meantime the child's general condition had improved and the E.S.R. came down to 2 mm in 1 hour. Digoxin was discontinued.

One week after her admission another child in the ward developed chickenpox and was sent home. The patient was given 750 mg γ-globulin by injection. Two weeks later she developed sparse vesicular rash over the abdomen and pain in the lumbosacral region. She was given another dose of γ-globulin. On the following day, the rash became more extensive, a diagnosis of chickenpox was made and she was transferred to the Isolation Hospital.

Over the next week she became critically ill. The vesicles became haemorrhagic and were extensive, and confluent in areas, mainly over the front and back of the chest, and over the abdomen which was distended (Figs. 1 and 2). She also had severe stomatitis and vulvo-vaginitis, with dysuria. Her temperature rose to 104-105°F. She complained of continual pain over the lumbar region, which at this time was free from lesions. She also developed petechial haemorrhages and bruises distinct from the haemorrhagic vesicles. Her fluid intake was difficult to maintain and her urine output was consequently diminished.

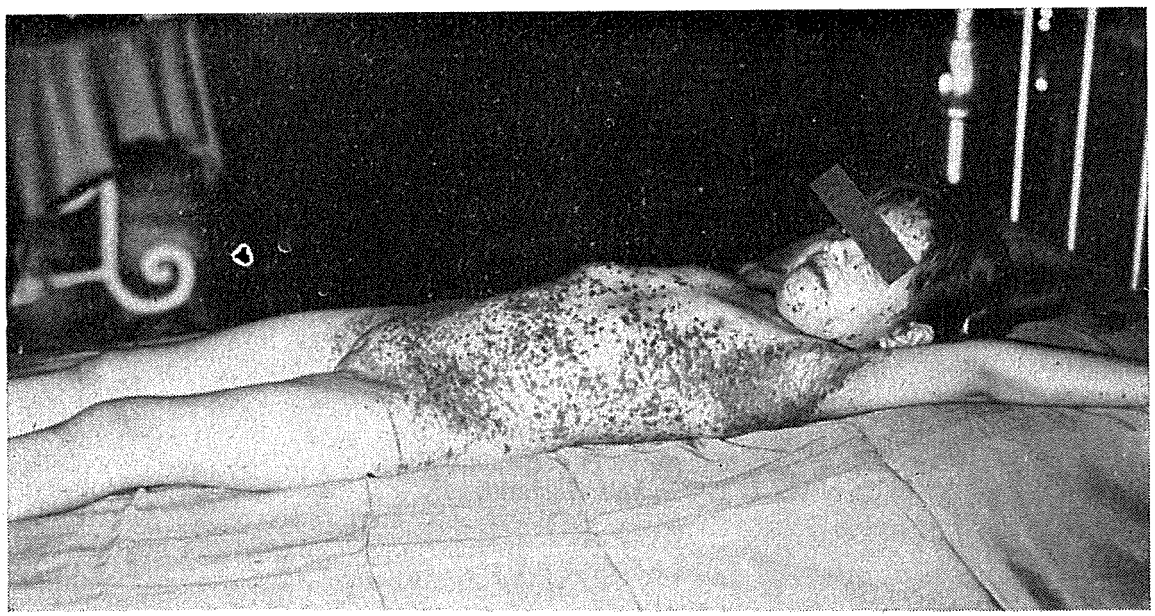

Fig. 1

Further investigations at this stage gave the following results: Hb fell to 8.8g% smear showed normoblasts; WBC 5,000/cu.mm; reticulocyte count 2.7%; platelets 150,000 per cu.mm; blood culture was sterile; blood urea 30 mg %; routine urinalysis normal; serum protein electrophoresis showed a relative decrease in albumin and β-globulin and a marked decrease in γ-globulin; an oral swab grew only a mixed flora. Microscopical examination of smear from base of lesions revealed giant and apparently malignant cells. Fluid and scrapings from vesicles and serum were sent to the Public Health Laboratory, Colindale, for virological studies.

She was treated with Chloromycetin, vitamins and the Prednisone was increased to 60 mg daily. Her Hb dropped to 7.5g% and a blood transfusion was given. Her general condition improved though a further extensive crop of haemorrhagic lesions, including deep confluent lesions in the lumbar region, appeared up to 12 days after transfer to the Isolation Hospital. These gradually regressed and the subsequent progress was uneventful. The lesions healed without scarring except for two keloids (small) above the left nipple.

The virological report was as follows: Material seen to be full of Herpes group virus particles on the electron microscope and the gel-precipitin test is positive with varicella-zoster serum.

Discussion

The administration of steroids might alter the dermatological manifestations of chickenpox. Indeed, initially in this case there was some doubt as to the nature of the lesions. The possibility of disseminated herpes simplex, Kaposi's varicelliform eruption (which occurs in eczematous patiens only) and even small-pox were considered in the differential diagnosis. Microscopical examination of smears from the base of lesions could not distinguish between herpes simplex and varicella, and the possibility of reticulosis involving the skin was suggested. The diagnosis was clinched by the distribution and evolution of the rash, by the known contact with a case of chickenpox in the ward two weeks before the appearance of the rash; and by the positive virological studies.

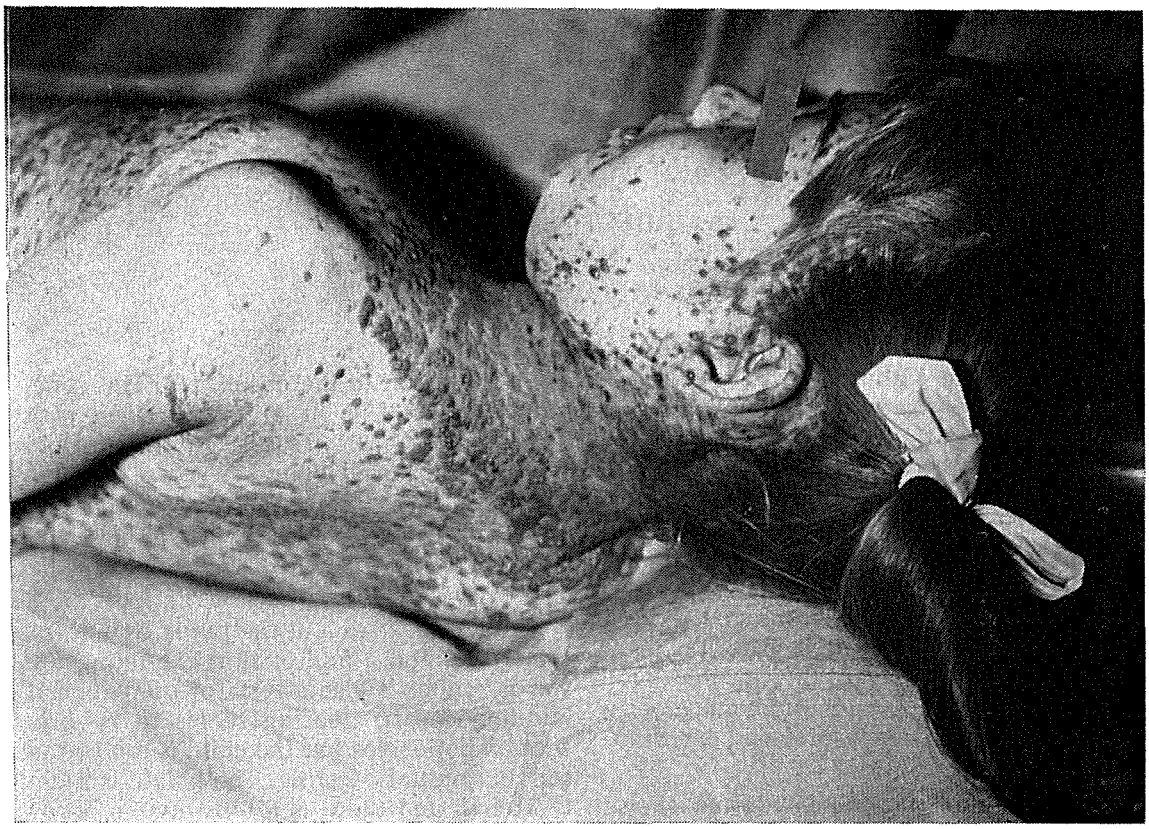

Fig. 2

The complication described in this case is extremely rare and is little mentioned in the literature. Most cases described have been in patients treated with steroids for another disease (Hagerty & Eley 1956) or on immunosuppressive therapy. But cases have also been described in patients not on steroids, notably in a series from Ceylon. (Krugman and Ward, 1968).

Opinions vary as to whether steroids should be increased or decreased, or even discontinued altogether in a child who develops chickenpox while on this treatment. In the case here presented it was felt that since the patient was already on a relatively high dose of steroids, and the chickenpox represented a stressful situation, an increase in the dose of steroids was indicated. It cannot however be concluded that survival of the child could be positively related to the increase in the dose of steroids.

References

HAGGERTY, R.J., and ELEY, R.C.: 1956. Pediatrics *18*: 160.

KRUGMAN, S., and WARD R.: 1968. Infectious diseases of children. C.V. Mosby & Co., St. Louis.