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AN UNUSUAL BULLOUS ERUPTION

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An African male, 28 years of age, was admitted to the dermatological wards of the Groote Schuur Hospital on 20 March 1954 suffering from an extensive bullous eruption involving the arms and legs and associated with a temperature of 106°F.

Apparently he had consulted his practitioner previously, on 13 March, for low lumbar backache and infestation by roundworms. Treatment was given, consisting of methyl salicylate ointment and oil of chenopodium. A week later, bullae began to appear on the arms and legs and he was then admitted to hospital. At no time was a history obtained of any other medication nor had the patient ever had any previous illnesses, apart from variola in childhood. He had not been vaccinated and there was no recent injury, nor had he been handling meat. His diet had been satisfactory.

On Examination

At 5 p.m. on Saturday, 20 March, in spite of the hyperpyrexia, the patient was able to sit up in bed and give a comparatively coherent history without appearing to be in any great discomfort. Apart from his arms and legs, which were covered with large, flaccid, unruptured bullae containing clear fluid, the skin surface was intact. The face and trunk showed patches of darkly pigmented macules but no bullae. There was nothing abnormal in the appearance of the scalp and body hair. There was a mild purulent conjunctivitis and the buccal mucosa was partly denuded. There was no urethritis or dysuria.

The blood pressure was 135/50 mm. Hg. There was a generalized lymphadenopathy though no hepato-splenomegaly. Further clinical examination revealed nothing abnormal in the other systems; *nil* found on X-ray of chest.

Malignant pemphigus having been excluded on the history and clinical appearance, a tentative diagnosis was made of severe bullous erythema multiforme, possibly of the Stevens-Johnson type, and with this in view he was given 'broad spectrum' antibiotics.

Although the patient was fairly comfortable that night and the next day, a dramatic change took place the following evening, when the skin began to shed in great sheets, leaving raw, denuded surfaces resembling severe burns (see Fig. 1), with the hairs, however, remaining firm and intact in their follicles. The skin on the palms and soles became loose and was attached only here and there. From then on the patient's condition deteriorated with great rapidity; he became maniacal with the severe pain and had to be heavily sedated. He was by now profoundly shocked though still conscious.

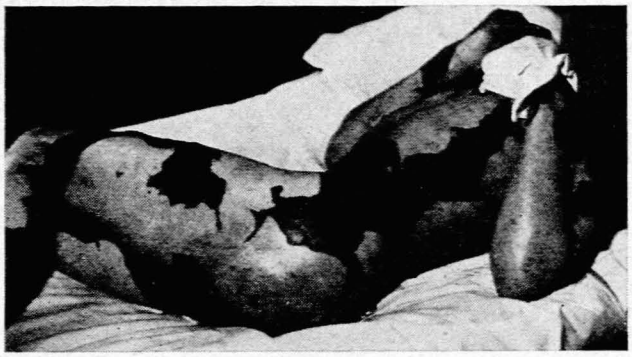

Fig. 1. Photograph taken on the morning of 22 March, showing the immense denuded areas with a few loosely attached shreds of normal black epidermis.

Nikolsky's sign was positive.

Special Investigations

Blood: Haemoglobin 15 g.%. Leucocytes 7,800 per c.mm. Wassermann negative. Albumin 3·7 g.%, globulin 2·5 g.%. Thymol turbidity 1, thymol flocculation 0.

Urine: No abnormal constituents. No porphyrins.

Culture of bullous fluid: No fungi. Heavy mixed growth of coagulase-positive *Micrococcus pyogenes aureus* and *B. subtilis*.

Culture from mouth: No pathogens isolated.

Biopsies

Skin from palm of hand. The specimen appeared to consist chiefly of superficial layers of epidermis, showing a very thick layer of keratin and a zone of parakeratosis. Beneath this was degenerate tissue probably representing the deeper layers of the epidermis. Dermis was not present.

Strip of skin denuded from trunk. This tissue was very degenerate but, judging from the amount of pigment present, probably included the basal layer of the epidermis. A few polymorphs were present in the tissues.

Snip from denuded area on the trunk. Histologically this consisted of collagenous tissue, apparently dermal in origin, showing no vascular or inflammatory lesions.

Progress and Treatment

On admission the patient was given Aureomycin, 500 mg. 6-hourly, on the assumption that this was a Stevens-Johnson syndrome. He remained comfortable until the next night, when he began to shed his skin. Intravenous therapy consisting of hydrocortone, potassium chloride, protein hydrolysates and vitamins in plasma was instituted forthwith. On the night of 22 March he lost consciousness, which he never regained. He died at 11 p.m. on 23 March.

Autopsy

The body was that of a Bantu male aged about 28 years, 5 feet 7 inches in height and weighing 140 lb.

The skin of the scalp was normal and the hair showed no abnormalities.

On the central part of the face there were prominent follicles with plugging of the pilo-sebaceous orifices. The lips were denuded of their mucous membrane.

The skin of the palms of the hands was normal but that over the soles of the feet showed a rather mottled, slate-grey pigmentation. The nails of the fingers and toes were normal.

The striking feature of the autopsy was the loss of large sheets of skin from the whole body, with no localized bulla or vesicle formation. The dermis was smooth and there was a general hyperaemia. The hair of the trunk was not altered in any way.

The tongue presented a smooth, pale surface due to a loss of superficial epithelium. No other abnormalities of the mouth, oropharynx or larynx were noted. The oesophagus was normal throughout its whole length.

The mucosal surfaces of the bronchi were smooth and glistening. The lungs showed a bilateral early basal suppurative bronchopneumonia.

The visceral and parietal pericardial surfaces were normal. The heart appeared normal in every respect.

The peritoneum had a normal glistening appearance and there was no free fluid. The stomach was moderately dilated and contained a little mucus; its mucosa showed post-mortem digestion but no areas of ulceration. There was no deviation from the normal in the rest of the intestine.

The liver, spleen, pancreas, gall-bladder, adrenals, kidneys, urinary bladder, rectum and genitalia were all normal.

Post-mortem Histopathology

Abdominal Skin: There was complete detachment of the epidermis from the dermis at the dermo-epidermal junction. The stratum corneum showed diffuse separation of the cornified cells along the planes of cleavage. This separation followed the pluggings of the pilo-sebaceous follicles and was not characterized by any interstitial material. The stratum granulosum was poorly visible but appeared to be intact. The stratum malpighii was characterized by an extensive and uniformly diffuse disruption, which consisted of all grades of cyst formation, from a single large vacuole of prickle-cell cytoplasm to actual formation of vesicles and bullae, many of the latter having become confluent. The intercellular bridges were not apparent in the disrupted areas. Many cells of the malpighian layer showed a progressive loss of eosinophilic staining of the cytoplasm, associated with eccentrically positioned nuclei which, however, retained their normal staining characteristics even when marked vacuolation of the cell had occurred. The bullae appeared generally to have erupted downwards and were not packed by any material, although the majority contained free red blood-corpuscles and free and intrahistiocytic melanin. Fibrin and polymorphonuclear leucocytes were not present, as a rule. There were normal numbers of pigmented basal cells in the basal layer but the malpighian layer showed a well-marked increase of melanin-carrying cells. No part of the epidermis was normal in its full thickness. The papillary layer of the dermis was quite intact. The dermo-epidermal cleavage extended downwards along the necks of the pilo-sebaceous glands and, in some instances, had separated the sebaceous glands from the adjacent dermis. The arterioles of the dermis were moderately dilated and some contained fibrin thrombi. The dermal lymphatics were dilated and contained moderate numbers of red blood-corpuscles. The hair follicles and sebaceous glands were normal in appearance.

The Scalp showed similar dermo-epidermal cleavage. There was a well-marked perivascular round-cell infiltration in the superficial and mid-dermis. The dermal vessels had both round-cell and granular-cell exudations.

The Skin from the Inner Thigh, Chest and Nose showed changes similar to those described in the abdominal skin. In the subpapillary layer of the dermis from the chest there was uniform perivascular and perilymphatic round-cell infiltration.

Liver. There was no disturbance of the architecture of the liver cell columns. While some red cells were seen in the sinusoids, there was no congestion. Some of the liver cells contained glycogen-filled nuclei and there was a deposition, in some areas, of a fine, granular, yellowish-brown pigment probably due to 'wear and tear'. The portal tracts were normal.

Pituitary. Histological examination revealed nothing abnormal.

Lung. A moderate degree of patchy oedema, some anthracosis and, in areas, a trifling peri-bronchiolar inflammatory cell response were seen.

Suprarenal Glands. There appeared to have been a fair amount of post-mortem autolysis. Even so, the zona fasciculata contained very little lipoid and this finding could perhaps have been regarded as representing a rather 'exhausted' adrenal.

The Small Intestine was passed as normal.

CONCLUSION

The authors were unable, after exploring all avenues for causative factors, to account for the unusual features presented in this case. The general practitioner first consulted by the patient had given him oil of chenopodium, which is known to be toxic to the liver and central nervous system but not to the skin. There was no evidence of erythema or vesiculation on the lumbar area, where the small amount of counter-irritant ointment containing methyl salicylate and capsicum had been applied.

There had been no occupational hazards in the nature of contact with caustics, quicklime or other strong chemicals at the cement factory where he was employed.

Tribal and urbanized Africans are still in the habit of consulting witch-doctors, who frequently use cantharides which, when given by mouth in large doses, causes violent gastro-enteritis and, when applied locally, may produce extensive erythema and vesiculation. At no time did the patient suffer diarrhoea or show any signs of local erythema. He and his relatives denied that he had obtained advice from anybody but his medical practitioner. These facts were later confirmed during police investigations.

We express our thanks to Dr. R. Schapera, Assistant Government Pathologist, for his detailed post-mortem reports and unfailing cooperation in our attempts to elicit the cause of death in this strange case.

UNION DEPARTMENT OF HEALTH BULLETIN

Union Department of Health Bulletin. Report for the 7 days ended 19 January 1956.

Plague, Smallpox, Typhus Fever: Nil.

Epidemic Diseases in Other Countries.

Plague: Nil.

Cholera in Dacca (Pakistan).

Smallpox in Kandahar (Afghanistan); Rangoon, Tavoy (Burma); Bombay, Delhi, Kanpur, Madras (India); Dacca (Pakistan); Hué, Tourane (Danang) (Viêt-Nam).

Typhus Fever in Baghdad (Iraq); Alexandria (Egypt).