are followed up for at least four months in cases in which the head of the worm is not recovered after treatment.

Failure of treatment due to vomiting was encountered more often among those treated with mepacrine than with male fern. As vomiting in patients with *T. solium* infections may give rise to cysticercosis, treatment with mepacrine in such cases is best avoided.

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TOXIC EPIDERMAL NECROLYSIS OCCURRING IN A CHILD

BY

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The term "toxic epidermal necrolysis" was first used by Lyell (1956) to describe a syndrome of toxic origin whereby large areas of epidermolysis preceded peeling, followed by fairly rapid tendency to healing. The skin was extremely tender at the onset. Bullous formation, although common, was only incidental to the process. Lyell had described four cases in adults. Lang and Walker (1956) described a case of an unusual bullous eruption in a Bantu male adult which appears to have been a similar condition, and in 1957 they described four other cases occurring in adults. Rook (1957) added another case to the collection.

So far no cases of this syndrome in children have been reported, although occasional cases are known to have occurred. A case is here reported in a young boy.

Case Report

A boy aged 3 was admitted to hospital with a day's history of blisters, which had been getting progressively bigger and more numerous. Two days previously he had developed what was diagnosed as impetigo. Fourteen days previously he had several attacks of vomiting, which occurred immediately after food and fluids. His small brother, aged 2, had diarrhoea and vomiting at the same time. A diagnosis of cyclical vomiting was made. The vomiting stopped a couple of days later, after "ancoloxin" (pyridoxine hydrochloride and meclozine hydrochloride) had been given.

For the next five days he was anorexic and irritable, after which he felt perfectly fit again. His brother (aged 2) had then been well for some time.

A week before admission another brother, aged 6 years, developed impetigo, and he was given neomycin ointment by his own doctor. Two days prior to admission the patient developed septic spots on his chin, and a diagnosis of impetigo was made. He was also given neomycin ointment. His mother said that he also complained of transient girdle pains, but cursory examination by her revealed nothing. On the day before admission he was noticed to have a few small blisters on the front of his chest. These got bigger and more numerous during the rest

of the time at home. The skin also started to peel. The mother applied neomycin ointment to the affected areas. That night he could not lie down, and cried continuously because of the extreme tenderness of the skin.

There was no relevant family or past history.

On admission he looked extremely ill, but was not moribund, dehydrated, photophobic, or unconscious. His temperature was 100° F. (37.8° C.), pulse 104, and respirations 25.

Physical examination was difficult because of the tender skin over his trunk and upper parts of the limbs. He had impetigo-like lesions around the mouth and chin. There were large areas of peeled and dead skin on the front and back of the trunk. No blisters were seen, but the mother insisted that they had been present the day before. The underlying dermis was raw, moist, pink, and oozing. Between these areas the skin was erythematous and in places wrinkled. Nikolsky's test was positive. Wrinkling and peeling were also noticed on the forehead and in the right retroauricular region. Areas of erythema were also noticed in the flexures of all limbs. Conjunctivitis was not present. In his mouth there was a membranous tonsillitis. The membrane was a dull white colour and very adherent to the tonsil. There were also tender tonsillar lymph nodes. His abdomen was difficult to examine because of the painful areas on its surface. Despite a thorough search no lesions were found in any other system.

Investigations.—A swab of the skin from the impetiginous areas grew mainly *Streptococcus viridans*; a throat swab also grew the same organism. A tonsillar swab did not grow diphtheritic organisms, Vincent's organisms, *Staphylococcus aureus*, or haemolytic streptococcus. On the day of admission a skin biopsy was performed from an erythematous area on the back. It was noticed that the epidermis tended to slither over the dermis during the incision. The histological report of the tissue stated: "The superficial part of the epidermis in the small fragment of the skin has been shed, including the stratum corneum and most of the stratum granulosum (see illustration). There is moderate inflammatory cell infiltration in the dermis consisting of round cells and neutrophil polymorphonuclear leucocytes. The appearances are consistent with the clinical diagnosis of epidermal necrolysis." Estimation of the herpes-virus-neutralizing bodies on admission was negative. A further estimation two months after he had been discharged from hospital also proved to be negative.

Treatment

As the skin was tender and peeling he was covered all over the trunk with "eucerin" (hydrated ointment of wool alcohols) dressings. It was very painful to remove these coverings for the next few days because of the skin tenderness. In an effort to combat the infection and the membranous tonsillitis, he was given oral chloramphenicol palmitate suspension, 250 mg. initially and 125 mg. six-hourly thereafter for six days.

Section of skin removed for histology ($\times 215$), showing the absence of the stratum corneum, and most of the stratum granulosum.

In view of the previous cases and the fear that the lesion would progress further and cause a collapse, oral cortisone was given, starting with 50 mg. on the first evening, followed by 25 mg. six-hourly the next day. The drug was continued for the next 10 days in gradually diminishing doses.

On the day after starting treatment several new areas of peeling had occurred. This was to be expected, as they arose from the erythematous wrinkling area of the previous day. This was also noticed around the eyes. He was given prophylactic "neo-cortef" eye drops.

On the following day his impetiginous lesions had gone, the throat was clean, and he said that he felt a good deal better. Although his skin condition was still painful he was more tolerant of examination. His temperature had fallen to normal.

His improvement was maintained; the tenderness of the skin disappeared two days later and there were no new areas of peeling, although the epidermis in the old areas continued to come away. A new epidermis grew in these regions without any evidence of scarring or depigmentation.

He was discharged from hospital 12 days after admission.

Comment

This syndrome is well defined, so that the diagnosis is fairly suggestive. Conditions such as dermatitis herpetiformis, pemphigus, pemphigoid, Stevens-Johnson syndrome, and erythema multiforme are usually well differentiated on clinical and histological grounds. If it be claimed to be a drug eruption in all the reported cases, there seems to be nothing common at all in the medicaments taken before the onset of the illness. In the above case the only drugs known to have been used were pyridoxine hydrochloride and meclozine hydrochloride by mouth, plus local neomycin ointment.

In the South African cases the Bantu man had taken (for roundworm infestation) oil of chenopodium, which is known to be toxic to the liver but not to the skin, and local methyl salicylate plus capsicum, as a counter-irritant for lumbar backache. It was interesting to note that the erythema and vesiculation did not occur over these locally treated areas. Two other South African cases had phenolphthalein as an aperient before the epidermolysis occurred. In other cases recorded by Lang and Walker (1956) and by Lyell (1956) drugs such as penicillin, Dover's powder, aspirin, and phenylbutazone had been taken. Three other cases gave no history of having taken drugs (Lang and Walker, 1956; Lyell, 1956; Rook, 1957).

The nature of the toxin has yet to be discovered. The toxæmia must be responsible for the prodromal symptoms. In Rook's case there was a sore throat with vomiting the day before onset; other symptoms being diarrhoea for one day, low backache for a week (Lang and Walker), sore throat (Lang and Walker; Lyell), and pain in left groin for some hours only (Lyell). In the above case the boy had bilateral girdle pains on the night before the appearance of the blisters. The history of vomiting 14 days before blistering could be explained either as a premonitory symptom or as an attack of cyclical vomiting, similar to that of his brother aged 2. As in the adult cases, the eruption reached its greatest extent in 24 hours.

Corticosteroids have been tried in several cases (Lang and Walker, 1956, 1957; Lyell, 1956), including the above case. The part they play is difficult to evaluate, and whether they shorten the course of the illness is unknown. If this is an immunity reaction the corticosteroids will certainly interfere with the process. They should be used at least in severe cases, as the reports suggest. It was probably wise to use the drug

in the above case as the child had gone downhill so quickly, and seeing him now fit makes one realize how ill he was on admission. As in the other cases, antibiotic therapy was advisable to combat any toxæmia due to infection.

The histology in the present case, as in the others, shows the epidermis as the target for the toxic onslaught. This is the essential abnormality with epidermal necrolysis. The nearest resemblance to this condition is scalding of the skin (Lyell, 1956; Rook, 1957). There are slight differences in the depth of the epidermal necrosis. Lang and Walker claim epidermal-dermal cleavage in their cases which went to histology, the bullae having been formed in this plane. Lyell described a similar change in one of his cases. In the above case the cleavage was intra-epidermal, as described in reports of one other of Lyell's cases and one of Rook's. There were inconspicuous inflammatory changes in the corium, as in the other cases. The resemblance of the skin condition to scalding suggests that its recognition may have an important bearing in forensic medicine.

Summary

This is believed to be the first description of toxic epidermal necrolysis in a child, a boy aged 3. There were premonitory symptoms of toxæmia followed by tenderness of the skin, which loosened and later peeled. Recovery was complete. It is thought that the syndrome is due to a toxæmia of unknown origin, and no other common factor linking other cases can be suggested. The use of antibiotics and corticosteroids is recommended.

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FOOD OBSTRUCTION OF THE SMALL INTESTINE

A REVIEW OF 15 CASES

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Obstruction of the small intestine by food has been described on many occasions. Some predisposing factors and numerous causative foodstuffs have been reported. Fifteen cases are reviewed, with special reference to the aetiological factors found and the modes of treatment adopted.

Obturation of the bowel is an important consideration when a case of intestinal obstruction is clinically assessed. Uppermost in the mind of the surgeon is the bizarre clinical picture which may result from the halting passage of a gall-stone through the intestine. In addition to food boluses and gall-stones, other possible causes of obturation include intestinal parasites, faecaliths,