cases save that of the patient both the patch and the control were negative. In the patient, at the end of 24 hours an erythematous eruption at the site was apparent, which later became oedematous and itched. The original skin lesions, which had by then almost disappeared following withdrawal from contact with the drug, showed a simultaneous exacerbation. Further patch tests were carried out with solutions of 1:10, 1:50, 1:100, 1:500, and 1:1,000. With the solutions of 1:10 and 1:50 a similar oedematous and erythematous lesion was observed at the site at the end of the examination period, and there was a similar exacerbation of the clinical manifestations in the original skin lesions. A papular erythematous eruption was seen with the weaker solutions, the lesion being minimal in the test to 1:1,000, and no general reaction was experienced. All the control patches were negative.

Discussion

Strauss and Warring (1947) reported four similar cases among 12 nurses in contact with streptomycin. One developed symptoms after a month, whereas the other three required approximately three months' exposure before any changes were noticed. In all cases the eruption first showed upon the fingers, in two the flexures of the elbow were affected, and changes in the eyelids were noted in all four. The clinical development, the pattern of reaction, and the type of the eruption were strikingly similar to that in the present case. By patch-testing they detected two further cases of sensitization which had not hitherto shown clinical manifestations. They were able to patch-test their sensitized cases with a solution containing only 2% of impurities, and induced a similar lesion to that produced by a solution with as high a proportion of impurities as was used by ourselves. They conclude, therefore, that the sensitization is probably not due to the presence of impurities. For lack of material it was not possible to confirm their findings.

Crofton and Foreman (1948) described four cases of sensitization to streptomycin, the nurses concerned having been exposed to the drug for periods of between six weeks and six months. Oedema and itching of the eyes occurred in three of them, whilst in two cases the skin of the face was involved. The eruption on the hands and arms was similar to that in the present case. They carried out skin tests, using intradermal injections of 50 μ g. of streptomycin hydrochloride dissolved in 0.1 ml. of saline. Positive results were obtained in all four cases, and exacerbation of the original skin lesions occurred in three. The authors failed to detect similar skin sensitization in 30 other nurses who had been exposed to the drug.

The absence of reaction to a 1:5 solution in the other exposed personnel and the control volunteers in the present investigation suggests that the solution is not a primary irritant and that this eruption is a sensitization phenomenon. Considering the long period of exposure required before clinical signs become manifest, it seems reasonable to suppose that this sensitization is acquired. Further work is in progress in an attempt to elucidate this point.

Summary

A case of skin sensitization to streptomycin in a nursing sister is reported.

Patch-testing of seven other exposed nurses failed to detect further sensitized cases.

Negative patch-tests in a control group suggest that the drug is unlikely to be a primary irritant.

It is considered probable that the sensitization is acquired.

My thanks are due to members of the Leeds Streptomycin Committee for their helpful advice and their permission to publish this case.

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Medical Memoranda

Gangrene after Scorpion Sting

Scorpion sting causes pain and discomfort of only short duration and serious complications do not usually occur, though slight local necrosis has been seen in some cases. In rare cases, however, especially in children, death has been reported. In the following case gangrene of a finger occurred after a scorpion sting.

CASE REPORT

On Feb. 13, 1947, a young healthy girl of about 17 was stung on the pulp of the right ring-finger by a scorpion which was found and killed. This was followed immediately by the usual symptoms—namely, burning pain, tenderness, and swelling at the site of the sting and cold perspiration of the whole body. A few minutes later a blister appeared just proximal to the point of the sting and it soon spread to and round the middle of the second phalanx of the finger. Potassium permanganate crystals were applied to the point of the sting and a starch poultice to the blister. The latter was applied for about two hours with no effect on the blister, which

burst on the third day, leaving a raw surface underneath. As the tip of the finger was gradually getting dry and black she consulted a doctor on Feb. 22, who advised cleaning the part with spirit and dusting it with "cibazol"—acriflavine powder.

When I first saw her, on March 1, the tip of the finger was dry and black, and proximal to this was a discoloured area which was limited above by a demarcation line. When seen on March 10, the dry black area had extended to the demarcation line (see illustration).

COMMENT

I could not find any reference to the occurrence of gangrene after scorpion sting in the literature on Indian scorpions. Dr. K. S. Mhaskar, joint author of *Indian Medical Research Memoir on Indian Scorpions* (1932, No. 24), writes in a personal letter that he never came across any case of gangrene after scorpion sting. S. Kubota (1918), however, has reported a case in which local necrosis occurred after a sting by a Manchurian scorpion (*Buthus martensi*). Nowak (1898) showed that when injected subcutaneously scorpion venom, like snake venom, may produce local necrosis.

In the above case the gangrene may have been produced by the action of substances applied locally or by the infection of the part. However, the local application of potassium permanganate to the point of the sting and the application of starch poultice to the blister were not such as to give rise to the production of gangrene in the finger. Infection also does not seem to be the causative factor, as the gangrene appeared to be of the dry type from the beginning. The production of gangrene therefore seems to be due to the action of the venom.

The variety of the scorpion concerned is not known, but it seems probable that the venom of a particular variety produces local necrosis. Though the occurrence of gangrene after scorpion sting might not be very common, the disability it causes should call for further research in this field.

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