No previous clinical information is available, as she had never had occasion to visit her own doctor. Clinically the appearances were suggestive of a Waterhouse-Friderichsen syndrome. The suddenness of death suggested it was in some way related to the massive haemorrhage into the tumour, and this may also have produced the pyrexia.

I thank Dr. C. L. Davidson for permission to publish, and Dr. M. Golliker, who kindly performed the post-mortem examination.

W. B. VALLANCE, M.B., Ch.B.,
Medical Registrar, Bradford Royal Infirmary.

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Mercury Dermatitis in a Tattoo: Treated with Dimercaprol

A number of cases have been reported of mercury sensitivity arising in the red areas (cinnabar) of tattoos. In some cases the use of mercurial applications elsewhere has led to the development of sensitivity and the red areas of the tattoo have subsequently become swollen (Unna, 1930). Other cases are reported in which the sensitivity has developed spontaneously (Ballin, 1933; Sulzberger *et al.*, 1944). A case is described here of a patient who had no other contact with mercury and who in addition to the local eczematous response developed a widespread eruption. The condition quickly responded to injections of dimercaprol.

CASE REPORT

A man aged 28 was tattooed eight years ago on the right forearm and showed at this time no abnormal reaction. The design showed a red heart pierced by a blue stiletto and intertwined with a blue scroll bearing the caption "True Love—Maisie." A few dots of red were present in the scroll and also represented blood near the tip of the stiletto. Later he married, but not Maisie. His wife objected to the tattoo, and on one occasion asked him to have the name altered. For other reasons family stress developed, and shortly after the onset of the eruption his wife left him.

The patient was first seen at the out-patient department in May, 1955. There was no previous history of skin disorders. His father and mother had unspecified rashes, but his two brothers and a sister had been free from skin eruptions. Two months before his first attendance the red areas of the tattoo became swollen and irritable. Treatment with zinc cream was given, but the whole area became red, oedematous, and vesicular, and after three to four weeks an eczematous rash developed over the face, trunk, and limbs. A diagnosis of mercury dermatitis was made and the patient admitted to hospital. After two days the condition was slightly worse and intramuscular injections of dimercaprol were begun, with a dose of 400 mg. on the first day, 200 mg. a day for five days, and then 100 mg. a day for three days. The condition improved rapidly and by the end of the course was clear except for scaling and a little swelling of the red areas of the tattoo. He was discharged home whilst awaiting surgical removal of the tattoo, and 7 to 10 days after the last dimercaprol injection the red areas again became more swollen and started weeping. After a few days the whole tattoo area was swollen, the red areas had become ulcerated, and a widespread eczema again developed.

He was readmitted to hospital, and after a period of four days in which no improvement occurred dimercaprol injections were restarted. A dose of 400 mg. was given on the first day; 300 mg. on the next day; 200 mg. a day for two days, and 100 mg. a day for two days. By the end of the course the condition had again subsided, although the red areas of the tattoo were still prominent. Seven days later these areas again became raised and weeping, and the whole area was swollen. Once more dimercaprol injections were recommenced and 150 mg. a day was given for the next 10 days. Improvement occurred in a few days, and

by the end of the 10 days the whole area was quiet except for the slightly raised and still ulcerated red areas. Three days later the tattoo was excised and grafted, since when there has been no further trouble.

It is of interest that for a few days when an in-patient he developed sore and scaling lips. This ceased when his temperature was taken with a thermometer not kept in biniodide of mercury.

Investigations.—Urine: Normal; specimens before and after the second course of dimercaprol showed no appreciable mercury content. Blood: W.R. and Kahn, negative; cytology within normal limits except for a neutrophil leucocytosis (total neutrophils 9,000 per c.mm.) when first admitted to hospital. Histology: During the second attack a piece of ulcerated red tattooed skin was excised. This was examined by Dr. R. L. Bishton, who reported: "The floor of the ulcer consists of necrotic material overlying inflammatory granulation tissue which extends deep into the dermis. The cellular reaction is very intense, and is composed of lymphocytes and monocytes with a few plasma cells. Although there are collections of blackish pigment particles no foreign-body giant cells are seen. No vascular lesions are observed and there is no tissue necrosis in the dermis itself. Patch tests: These were performed one day after stopping the last course of dimercaprol. 2% ammoniated mercury, 1% biniodide of mercury, 1% perchloride of mercury, and sulphide of mercury (cinnabar) powder all showed a well-marked positive reaction after 12 hours, which was greatest with the biniodide.

COMMENT

In this case there was no history of recent contact with mercury which might have sensitized his skin. The family tendency to "rashes" and the coincident considerable marital stress may well have played a part in the development of this allergic reaction.

The results of the patch tests are of interest. In the past some of these cases have shown a positive response to various mercury salts, but not cinnabar (Unna, 1930; Madden, 1939; Sulzberger *et al.*, 1944). However, Sulzberger (1937) and Novy (1944) describe similar cases in which the patch tests were also positive to cinnabar. Commenting on the inconsistency of these findings, Rook and Thomas (1952) suggest that the hypersensitivity may be to a derivative compound. The very marked sensitivity to biniodide of mercury was obviously the cause of the eczematous reaction on the lips due to contact with a thermometer kept in biniodide of mercury.

It seemed clear that dimercaprol quickly reduced the reaction on all three occasions. The two relapses which occurred after courses of dimercaprol both started 7 to 10 days after it was discontinued. A single dose is said to be effective for only about four hours (Miles Weatherall, 1948). Presumably dimercaprol will only neutralize the mercury in close contact with the tissue fluids and not that towards the centre of the depots of cinnabar. It may be that the interval of 7 to 10 days was necessary for cinnabar in the depots to diffuse again into the tissue fluids or possibly to undergo some chemical change as suggested by Rook and Thomas.

We thank Dr. D. M. M. Thomson for his help in the clinical management of the case; Dr. C. D. Evans for his help with the paper; and Mr. D. C. Bodenham, who carried out the skin excision and graft.

F. E. S. KEILLER, M.B., Ch.B.,
R. P. WARIN, M.D., M.R.C.P.,
United Bristol Hospitals.

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