precedent history of urinary symptoms favoured the diagnosis of tuberculous epididymal disease. Macroscopic haematuria occurred in 30% of the cases of non-tuberculous epididymitis and was probably due to cystitis. Sterile pyuria was noted in 10% of the cases of non-tuberculous epididymitis: it was considerably more common in the tuberculous cases. Coliform and/or coccal infection of the urine was commonly present in the non-tuberculous cases but occurred also in 26% of the tuberculous. Tubercle bacilli were isolated from the urine in 12 of 22 cases so examined.

A scrotal sinus was rare in the cases of non-tuberculous epididymitis but developed in 35% of the tuberculous cases. Prostatic and vesicular nodularity was noted in 36% of the non-tuberculous cases and in 70% of the cases of tuberculous epididymitis. Clinical tuberculosis elsewhere in the body, either concurrent or precedent, was found in 76% of the tuberculous cases. The majority of the cases of non-tuberculous epididymitis were treated expectantly and ran a benign course. The tuberculous cases were treated by surgical excision—before streptomycin and the adjuvant drugs were available. 36% of the patients were dead within a few years.

The differential diagnosis between the two conditions is sometimes difficult and is apparent only after the lapse of time: full urological investigation is advisable.

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A PURPURIC DRUG ERUPTION CAUSED BY CARBROMAL

BY

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Carbromal (α -bromo- α -ethylbutyrylcarbamide) is a hypnotic, belonging to the class of open-chain ureides and closely related chemically to chloral, bromvaletone, and "sedormid." It was introduced in 1910 and popularized by Bayer Products Ltd. under the name of "adaline." The first report that the substance caused a drug eruption did not appear until 1921 (Loeb, 1921), and the purpuric nature of the eruption was well emphasized in the same paper. Since then, further cases have been described by Continental authors. The nearest approach to a description of the condition in the English language, however, is in a paper by Sneddon (1952), where it is cited as a differential diagnosis to purpuric textile eruptions. Usually it is merely alluded to by including carbromal in a list of drugs capable of causing purpura—for example, Brain (1950); while it has even been stated that carbromal does not cause purpura at all (Ackroyd, 1949; Beckman, 1952). However, it is generally agreed that carbromal has no effect on the blood platelets, as has sedormid, which is a well-recognized cause of thrombocytopenic purpura.

Carbromal is becoming increasingly popular in this country as a nocturnal sedative. It can be purchased

by the general public without a doctor's prescription, and seems to be the first choice of the chemist when asked for "something to make me sleep." Besides being sold as 5-gr. (320-mg.) tablets, carbromal is sold under a variety of trade names, such as "persomnia," containing, *inter alia*, 3 gr. (200 mg.) of carbromal, "dormiprin," containing 2 gr. (130 mg.), and "somnotil," containing 1 gr. (65 mg.). Finally, it is also being fairly widely advertised to the public.

In view of these facts, it was thought that a full description of the drug eruption caused by carbromal might be of value, and this paper deals with six such cases seen in the skin department of St. Bartholomew's Hospital in the first half of 1954.

Case Reports

Case 1.—A spinster aged 40 complained of a very irritating rash that had been present for four weeks. It had begun on the thighs and was still spreading. On examination well-defined patches, irregular in shape and size, were found on the thighs, buttocks, and lower trunk, consisting of petechiae and linear purpuric streaks, erythema, pigmentation, and branny scaling. Over the hips the eruption had become confluent and thickened. Increased capillary fragility was present. Five weeks previously she had begun taking persomnia, two tablets nightly. A patch test with 1% carbromal in propylene glycol was negative, but the eruption cleared in two weeks after stopping the drug. Slightly increased capillary fragility was still present a fortnight later.

Case 2.—A man aged 53 complained of a very irritating rash, present for six weeks, which had begun around the ankles, the inside of the knees, and over the hips, and which had spread steadily ever since. On examination the whole skin, with the exception of the soles, hands, and face, was affected by an eruption consisting of petechiae and linear purpuric streaks, erythema, pigmentation, and branny scaling. On the trunk, thighs, and upper arms these elements were aggregated into well-defined, irregularly shaped patches of varying size. On the forearms and lower legs the eruption was mainly petechial, in some areas diffuse and in the others confluent. Over the inner aspect of the knee-joints, the hips, and shoulders the eruption formed a slightly thickened sheet. Marked increased capillary fragility was present. He had been taking persomnia, one or two tablets nightly, for nine weeks. A patch test to 1% carbromal in propylene glycol was negative, but the eruption cleared completely in four weeks on stopping the drug.

Case 3.—A married woman aged 52 complained of an irritating eruption, present for three months, which began round the right ankle in the region of her varicose veins. On examination an eruption was seen on the legs, trunk, and upper arms, consisting of petechiae and purpuric streaks, erythema, pigmentation, and branny desquamation. On the thighs, trunk, and upper arms the eruption was patchy; over the shoulders, hips, and knees it was confluent and thickened; and on the lower legs it was profuse and mainly petechial. Slight increased capillary fragility was present. She had begun taking persomnia, two or three tablets nightly, six months previously. On stopping this drug the eruption cleared completely in two weeks.

Case 4.—A single woman aged 27 complained of an irritating eruption, which had been present for three months. On examination a grossly excoriated eczematous reaction was seen affecting the legs, thighs, and upper arms. The eruption had coincided with extreme domestic difficulties and cleared completely in four weeks as a result of bland local applications, mild sedation, and sick-leave. She was referred again, one week after returning to work, with a relapse of the eczema. This time, however, the eruption was mainly petechial, together with some erythema, pigmentation, and branny scaling, patchy on the thighs, trunk, and upper arms, and diffusely purpuric on the lower legs and forearm. It had begun on the feet, had spread suddenly in a few days,

and was extremely irritating. Increased capillary fragility was present, and persisted for a month after the eruption had cleared. She had started to take carbromal three or four tablets nightly, three months previously—that is to say, two months after the onset of the original eczematous rash. Patch tests to a saturated solution of carbromal in propylene glycol were negative, but the eruption cleared a month after stopping the drug.

Case 5.—A married woman aged 50 complained of a non-irritant rash, present for four months, which had begun on the thighs and which had steadily spread. On examination well-defined, irregularly shaped patches of varying size, consisting of petechiae, erythema, pigmentation, and branny scaling, were seen on the limbs and trunk. Some petechiae were seen between the patches and they were particularly marked and profuse on the lower part of the legs. Increased capillary fragility was present. She had been taking carbromal, one tablet nightly, for a year. The eruption cleared two weeks after stopping this drug, at which time the capillary fragility had also disappeared.

Case 6.—A man aged 42 complained of an eruption which had been present for three months and which had been irritating for one month. It had appeared first on the feet

and had spread steadily to affect the limbs and trunk. On examination the eruption was found to consist of petechiae, purpuric streaks, erythema, pigmentation, and branny scaling, diffuse and mainly purpuric on the forearms and lower legs, but aggregated into irregular patches on the trunk and upper limbs. A similar eruption had appeared one year ago on the feet and had spread suddenly to the limbs and

The eruption in a typical case.

trunk within a week. It had been irritable for the first week only and had persisted for three months. Three weeks before the eruption he had begun taking carbromal, two tablets nightly, but reduced the dose to one tablet a night about three months later—that is, a few weeks before the eruption cleared. He increased the dose to two tablets a night just before the eruption appeared for the second time. The carbromal was stopped when he was first seen and the eruption cleared in three weeks, at which time increased capillary fragility, which had been present at first, could no longer be demonstrated. A patch test to a saturated solution of carbromal in propylene glycol was negative.

Discussion

The eruption was remarkably constant in all six cases and warrants no further description. Severe irritation was complained of by five of the patients, but was completely absent in the sixth. The dose of carbromal varied between 3 and 20 g. (0.2 and 1.3 g.) nightly, but in all cases was within the therapeutic range (Martindale, 1952) and bore no relationship to the severity of the eruption. Increased capillary fragility was constantly present, and in two of the cases persisted for some weeks after the eruption had cleared, but in no case was any haematological abnormality found. Patch tests were uniformly negative. Only one of the patients obtained the drug on a doctor's prescription.

Unless the purpuric element in the eruption is recognized the condition may be mistaken for pityriasis rosea, seborrhoeic dermatitis, or eczema. Two other eruptions, morpho-

logically identical with that produced by carbromal and in which irritation is usually present, must be considered in the differential diagnosis. The first of these is the purpuric textile dermatitis, first described by Hodgson and Hellier (1946), occurring among British troops in north-west Europe. Subsequent cases have been reported among civilians (Peterkin, 1948; Sneddon, 1952). Invariably the cause has been a new article of clothing, but many garments have been incriminated, such as a vest, shirt, bathing-dress, pair of riding-breeches, and a suit. The causative factor, which is not a dye, appears to be some chemical used in processing the clothing, which can, while the clothing is still new, cause capillary damage in certain individuals. In the second condition the eruption appears for no discernible reason, persists for anything from two months to a year, and resolves spontaneously. Treatment has no effect. Sneddon (1954) has suggested that these three varieties of purpuric dermatosis, due to external contact causes, to ingested allergens, and of purely endogenous origin, may be a change comparable to the eczema reaction. To regard the eruption as a particular variety of skin change which may have a number of causes appears to be the most rational approach.

The final diagnosis of a carbromal drug eruption must rest on the effect of stopping the drug. Patch tests are misleading, since a positive result is difficult to obtain, and a test dose is out of the question in an eruption which may persist for up to a month after the responsible drug has been withdrawn. Nevertheless, improvement in the intensity of both the eruption and the irritation is obvious within a few days to a week of stopping the drug, and the condition clears completely in, at the most, a month.

Summary

Six cases of purpuric eruption caused by the ingestion of carbromal in therapeutic doses are described, and the differential diagnosis is discussed.

It is emphasized that the use of this drug as a nocturnal sedative is increasing in this country, and that it may be purchased without a doctor's prescription.

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According to the U.S. Army Surgeon General, radiographs of wounded soldiers on the battlefield with a newly designed portable x-ray unit powered by radioactive thulium will soon be possible. The new device can produce an x-ray picture without electricity, water, or darkroom. The complete unit weighs only 48 lb. (21.8 kg.) and may be carried on the back. A 4-in. (6-mm.) lead plate contains the radioactive thulium and protects the user from accidental radiation exposure. The piece of thulium is expected to be effective for about one year, when it will be returned to an atomic pile for rejuvenation. The developer is a cassette or filmholder in which all pictures are made with radiosensitive paper and pads instead of film. The paper and pad are saturated with developer and stabilizer and are separated by leak-proof dividers. The cassette is wrapped with a light-proof and waterproof covering. As the cassette is exposed, the dividers are removed and the radiosensitive paper records the picture. These radiographs lack the fine detail of standard x-ray films, but are suitable for field and emergency use. A person can be trained to use the machine in a few hours, and can set it up, take a picture, and develop it within five to ten minutes. Timing of the exposure is done with a wrist watch. Each unit will cost about \$200, but additional tests must be made before it can be standardized for commercial manufacture.