rash appeared; this was not itchy. It was confluent on the back, chest, and outer upper arms. Below the waist it was scantier, with a cluster of lesions over each trochanter. There was little if any involvement of the bronzed parts—face and forearms—or of the legs. It faded in 3 days. On the seventh, eighth, and ninth days he had a fever up to 103°, with headaches, backache, anorexia, and conjunctivitis. This was considered to be phlebotomus fever, an epidemic of which was raging at the time.

Case 7 received sulphapyridine for non-specific urethritis, 4 g. daily for 8 days, most of which time he was in bed, but sometimes up in a shirt with elbow-length sleeves and long trousers. He denied being in the sun without a shirt in the past 2 months. He had never sunburned easily. On the eighth day an itchy maculo-papular rash appeared, lasting 3 days. It was generalized—being maximal on the back above the waist and the forearms, and minimal in the axillae. The temperature rose to 99.4°.

Case 8 received sulphapyridine for gonorrhoea, 26 g. in 7 days. Sun exposure and previous sun sensitivity were denied. On the eighth day the patient developed a roseoliform eruption, very itchy, and confluent on the outer upper arms and the trunk above the waist. It also involved the trunk below the waist, the arms and legs, most of the lateral pelvis, and thighs, ankles, and dorsum of the feet. Accompanying this was a suspected attack of phlebotomus fever.

Case 9 received sulphanilamide for non-specific urethritis, 3 g. daily for 10 days. There had been little exposure to the sun. Previously he had always sunburned easily. On the eighth day a rash appeared, consisting of maculo-papules running together into an erythema with wheals in it. The configuration was morbilliform and in places circinate. There was itching. The rash was maximal on the face, neck, upper trunk, forearms, and dorsum of the hands. It was present on the lower trunk, palms, legs, and thighs over the trochanters; but was absent from the bathing-drawers area and the left wrist, where a watch was worn. The exposed parts were not spared. The rash faded in 8 days, desquamation occurring on the face from the fifth day onwards. For 5 days he had malaise, fever up to 101°, and a distinct air-hunger.

Case 10 received sulphanilamide for a tonsillitis of 2 days' duration. The last exposure to sunlight had been 3 days previously, in shirt and shorts. He had never sunburned easily and was accustomed to going about in singlet and shorts. For 2 days 1 g. of the drug was given 4-hourly. On the evening of the first day a rash appeared on the upper trunk and upper arms, and then spread all over. Seen for the first time on the fourth day, the eruption consisted of erythema, vesiculation, and, in the worst places, profuse weeping and desquamation. Behind the ears a typical streptococcal intertrigo had supervened. Itching was severe. Its distribution was maximal on the face, the neck and shoulders where left uncovered by a singlet, the outer upper arms, the forearms, thighs, and legs. It was less marked on the chest and back, inner upper arms, and the feet. It was completely absent from the bathing-drawers area. At this stage the patient also showed an intense catarrhal stomatitis, glossitis, and pharyngitis, considerable prostration, and a fever of 102° for 10 days. The rash finally subsided in 2 weeks.

Discussion

Sulphanilamide was responsible for most of the milder cases (16 out of 17). The more severe cases were caused by sulphanylamine and sulphapyridine in equal numbers (5 of each). This greater incidence with sulphanilamide has been reported before, but in our cases it may have been due to the fact that only sulphanilamide patients were ambulant. In the largest series of cases in the literature at our disposal—that of Erskine (1939)—eruptions usually appeared at the eighth to tenth day, lasted 1 to 7 days, and were irritable in 20 out of 36 cases: although the majority of his cases were not described as light-sensitive, these features are in close agreement with our own observations.

Case 10 above merits separate discussion. It differs conspicuously from the remainder in its onset on the first day of chemotherapy, without sunlight exposure. Yet its distribution left no doubt as to its photosensitive character, affecting sites in order of their previous exposure to light. This early onset suggests an allergic origin. Epstein (1939) has described two types of photosensitivity from sulphonamides. Irradiating with ultra-violet light the site of an injection of sulphanilamide, he obtained an erythematous reaction. In the same subject 9 days later, irradiation of another injection site produced a more severe, prolonged, and exudative reaction, to which he

gave the name "photo-allergy." Our own case was also atypical in its exudative nature.

Summary and Conclusions

In their power to cause an eruption in parts previously exposed to the sun sulphonamides resemble pellagra.

In all, 27 cases of light-sensitive sulphonamide eruption are described, 21 due to sulphanilamide and 6 to sulphapyridine. These represent 3.4% of the total cases treated with these drugs, under conditions favouring considerable exposure to constant strong sunlight. About half the cases occurred during July and August.

Photosensitivity occurs from the eighth to the tenth day of administration. Two cases were found to be photosensitive 2 days after stopping chemotherapy. It therefore appears that patients given sulphonamides for more than 6 days are possible victims of sunlight eruptions.

In many cases the presence of melanin is a protection against these eruptions. Three observations support this: (1) about one-third of the cases are subjects who sunburn easily; (2) the bronzed parts of the body tend to be affected less than the others; (3) no eruptions have ever been seen in Maoris, who comprised about 100 of the 800 cases treated during the 12 months.

The following parts are affected in order of severity: (a) parts exposed to the sun during chemotherapy; (b) parts exposed in the past; (c) pressure points, such as the great trochanters; (d) least of all, parts always kept covered, such as the bathing-drawers area.

The commonest lesions are erythematous papules in a morbilliform or roseoliform pattern, becoming confluent. Itching varies (severe in 5, moderate in 7, slight in 9, absent in 6). Less common lesions are oedema, urticaria, vesication, pustulation, and desquamation.

Drug fever and other toxic effects are common accompaniments (12 cases).

Most rashes subside in 2 to 4 days.

Further chemotherapy.—Avoiding exposure to sunlight, 6 cases completed their courses of chemotherapy and 3 had further courses later without ill effects. In the milder cases, at all events, a rash is no indication for discontinuing the drug.

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CHRONIC LEG ULCER IN PURPURA HAEMORRHAGICA

REPORT OF TWO CASES

BY

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The association of chronic ulcer of the leg with splenomegaly seems too frequent to be a mere coincidence, though the reason for it is not known. It has been described in sickle-cell anaemia, acholuric jaundice, Gaucher's disease, splenic anaemia, and Algerian splenomegaly. Last December I had two patients with essential thrombocytopenia, both of whom had had chronic ulcers of the leg. Although I had previously seen patches of purpura break down and ulcerate in patients who were acutely ill, the occurrence of chronic ulceration of the legs was new to me. The spleen was not palpable in either of these two patients, but in view of the important part which the spleen plays in purpura haemorrhagica, the cases seem worth reporting as a further contribution to this odd chapter of medicine and surgery.

Case Reports

Case 1.—A woman aged 21 was admitted to hospital because of menorrhagia. She had had the trouble ever since her periods started at the age of 12. At 15 there appeared on the left leg an ulcer which was very indolent and did not heal for more than two years. During this time it gradually increased in size until it measured about 10 by 5 cm. When she was 17 a similar ulcer appeared on the right leg, but cleared in a shorter time. Neither had broken down since. On the lower third of both legs there were large thin paper-like scars. There was no surrounding discoloration, and the scars were not tender. As the patient had only 19,000 platelets per c.mm., splenectomy was advised, and a spleen weighing 284 g. was removed by Mr. Elliot-Smith. The patient made an excellent recovery. She was completely relieved of all symptoms, and seven months after operation her platelets numbered 338,000 per c.mm.

Case 2.—A man aged 26 was admitted to hospital because of excessive bleeding after incision of a boil. All his life he had been subject to excessive bruising and bleeding. He had had chronic ulceration of the legs for 8 to 10 years. This had been treated without success by elastoplast and other methods used for varicose ulceration, though there was no varicosity. His story was that the lesions began as a red patch in the skin, of small size, changing to a light chocolate colour and coalescing with other similar areas. The skin then became thin and papery and might ulcerate. Once the chocolate stage was reached it never returned to normal. When he was up and about his ankles became oedematous and his legs ached. He often had to give up work on this account. On examination there were numerous small brown patches on the lower parts of his legs and on his feet. On the inner side of the left heel there was a larger area which had ulcerated at the centre and was covered with a thick brown scab. In the middle and lower thirds of the anterior aspect of the right leg there was a saddle-shaped lesion about 15 cm. in length, which was chocolate-coloured and ulcerated in its lower part. There were no bruises or purpura elsewhere on the limbs or body. As his platelets were usually below 20,000 per c.mm. splenectomy was advised, and Mr. Elliot-Smith removed a spleen weighing 122 g. Unfortunately the operation was not followed by any significant rise in platelets and there was only temporary healing of the ulcer, attributable to the rest in bed. Six months after the operation, although the bleeding time had fallen from 15 minutes to 3 minutes, there were still only 54,000 platelets per c.mm. and the ulcer of the right leg had broken open again.

Three out of every four negroes with sickle-cell anaemia have chronic ulceration of the legs (Cummer and LaRocco, 1940). Unfortunately the early stages of the lesion have not been observed, and by the time the ulcers come under medical care they are described as punched-out chronic ulcers with a base of granulation tissue. They respond to symptomatic treatment, but are likely to relapse owing to the intractable nature of the underlying malady. In acholuric jaundice ulceration of the legs is a much less frequent complication, though at least 18 cases had been recorded by the beginning of 1939 (Taylor, 1939). The lesions, which are commonly near the internal malleolus, begin as a dusky-blue area which breaks down in the centre. A ring of bluish cyanosis or dark pigmentation circumscribes the lesion. Vaughan and Turnbull (1936) described ulcers with pigmented margins and scars with pigmented borders; microscopical preparation showed that the dermis for a considerable distance beyond the margin was densely infiltrated with plasma cells and contained numerous macrophages loaded with granules of iron, while its vessels were greatly engorged. The French authors who reported chronic ulceration of the legs in splenic anaemia (Grégoire and Emile-Weil, 1929) and Algerian splenomegaly (Lombard and Nanta, 1928) thought that the leg ulcer was primary and formed the portal of entry for bacterial or mycotic infection, but this idea is not in keeping with modern views of the pathology of splenomegaly. In the cases which I am reporting the lesion appeared to begin as an extravasation of red blood cells with subsequent ulceration over the purpuric area. It is very similar in appearance and pathology to the pigmentation of the legs in Gaucher's disease (Bloem, Groen, and Postma, 1936). It is clear that thrombocytopenia is not a common factor, for the platelets are normal in acholuric jaundice and sickle-cell anaemia. Nor is the ulceration explained by the anaemia, for chronic ulceration of the legs has not been described in pernicious anaemia or chlorosis. Mere size of the spleen is not significant, inasmuch as ulceration is absent in the gross splenomegaly of leukaemia and present with

much less enlargement. Finally, there is no correlation with clubbing of the fingers, another peripheral abnormality which is curiously associated with splenomegaly. Both clubbing of the fingers and chronic ulceration of the legs are suggestive of vascular changes in the limbs, and in more leisured times it would seem appropriate to carry out careful studies of the peripheral circulation before and after operation in similar cases.

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CHIP FRACTURES OF THE OS TRIQUETRUM (CARPAL CUNEIFORM)

BY

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Eleven fractures of the os triquetrum have been seen out of a total of 86 wrist injuries referred to a small fracture clinic during the last year. This gives a false impression of their relative frequency, in that all triquetral fractures were sent to this clinic while many other wrist injuries were treated elsewhere; nevertheless, they are much more common than was previously supposed. Greening (1942) has recently stressed this frequency, quoting 20 out of 580 wrist injuries seen at Charing Cross Hospital during two years. He has described how the bone may be crushed between the pisiform and the lower end of the ulna, classifying the fractures according to their x-ray appearances, and giving a full bibliography, to which unfortunately there is no access in this station. A study of the cases seen here agrees largely with his analysis, but has brought out certain differences which it is proposed to describe. Of the 11 fractures 10 were small chips or flakes about 3 mm. in diameter separated from the middle of the ulnar dorsal border; the eleventh was a complete fracture through the middle of the bone in the sagittal plane with no displacement. In no case was there any other associated bone injury.

Aetiology

All were due to a fall on the hand, one in volar flexion, the remainder in dorsiflexion. Six of the latter gave the following clear-cut history: Each patient said that he was walking downhill when his feet skidded forwards; he then fell backwards on to his outstretched hand, was unable to save himself, and finished up on his back. They were unable to remember in which direction their fingers were pointing, but it is suggested that they were pointing outwards to the side, that the first strain was one of dorsiflexion, immediately followed by forcible ulnar deviation as they rolled backwards over the ulnar border of the hand, and that this is the trauma *par excellence* that would crush the os triquetrum against the lower end of the ulna. All the patients were soldiers, their ages varying from 23 to 37. In this station the roads are steep and the asphalt often slippery, and boots with hobnails polished smooth take little grip. Although one-third of all the wrist injuries seen occurred in men of the Royal Navy there were no triquetral fractures among them, an immunity possibly due to the plain leather soles of Naval footwear.

Physical Signs and X-ray Appearances

The patients presented a stiff weak painful wrist with maximum pain, swelling, and tenderness over the dorsum of the os triquetrum. In only one was the fragment palpable. A combination of dorsiflexion and ulnar deviation was typically the most painful passive movement. Only two men had signs of a sprain of the ulnar collateral ligament; the history of their injuries and the x-ray appearances confirmed the presence of an avulsion fracture in each case.