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.

REFERENCES

- Bloem, Th. F., Groen, J., and Posima, C. (1936). *Quart. J. Med.*, **5**, 517.
Cummer, C. L., and LaRocco, C. G. (1940). *Arch. Derm. Syph.*, Chicago, **42**, 1015.
Grégoire, R., and Emile-Weil, P. (1929). *Bull. Mém. Soc. nat. Chirurgie*, **55**, 91.
Lombard, P., and Nanta, A. (1928). *Ibid.*, **54**, 1440.
Taylor, E. S. (1939). *J. Amer. med. Ass.*, **112**, 1574.
Vaughan, J. M., and Turnbull, H. (1936). *The Anaemias*, 2nd ed., London.

CHIP FRACTURES OF THE OS TRIQUETRUM (CARPAL CUNEIFORM)

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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.

At x-ray examination the chip fractures were best seen in the lateral and were invisible in the antero-posterior view. From the lateral it was not always easy to say whether the fragment had come from the dorsum of the os triquetrum or of the lunate; the oblique view, which is most important, showed the site of fracture in every case. This point was specially studied in view of the high figure (59 out of 1,106) for avulsion fractures of the posterior process of the lunate in Schnek's series

FIG. 1.—Pte. A.: Oblique view.

FIG. 2.—Pte. A.: Lateral view.

FIG. 3.—Pte. B.: Oblique view.

FIG. 4.—Pte. B.: Lateral view.

as quoted by Böhler (1935). In the lateral view they varied from a minute flake to an oval fragment 4 mm. in greatest diameter. In the two men with ulnar collateral ligament damage the fragment had been pulled proximally; of the remainder it lay over its bed in 3 and had been pushed distally in 5. In no case were there any radiating cracks or fissures through the rest of the bone. The accompanying radiographs show the largest and the smallest fragments.

Treatment and Results

No attempt was made to reduce any displacement, which was never pronounced. The one complete fracture was immobilized in plaster-of-Paris for 15 weeks before union showed radiologically. The patient returned to full duty 4 weeks later. Eleven months after the injury the wrist was normal except for slight tenderness in the triquetral area.

The two avulsion fractures were also immobilized in plaster, one for 4 weeks, the other for 9 weeks; these men were fit for all duties respectively 7 and 10 weeks from the injury. Nearly a year later they were both trouble-free, but one has limited flexion and very occasionally local pain; in his case x-ray examination at 6 months showed union incomplete, but at 12 months union had taken place.

With the exception of one man with a severe sprain put in plaster recently and still under treatment, the remainder (7 cases) were treated with elastoplast strapping only, and were fit for

full duty in 1 to 28 days, the average time being 10 days. They have been "followed up" for periods varying from 2 to 12 months. Of the 7, 4 are now normal in every way, one is normal except for slight limitation of flexion, and the other 2 suffer no inconvenience but still get slight pain on forced dorsiflexion. Radiographs show union to have taken place in all of them, although in some it was slow and still appears to be incomplete.

Conclusions

With such a small series it is impossible to draw wide conclusions, but the figures agree with those of Greening in showing that the fracture is more common than was formerly supposed. It is usually due to forcible dorsiflexion and ulnar deviation of the wrist, frequently the result of a backward fall on the outstretched hand. In x-ray diagnosis the oblique view shares importance with the lateral, and the chip of bone appears to be pushed off more often than pulled off. In the former the prognosis is excellent and recovery very rapid with minimal treatment; although bony union may be delayed, immobilization does not appear to be necessary. The avulsion fractures, however, involving as they do damage to the ulnar collateral ligament, are more serious injuries and require longer treatment. It was a little surprising that the one complete fracture took so long to unite when immobilization was carefully maintained in a patient who had been using his hand to the full. Slight symptoms may persist for many months, but they do not interfere with the activities of the patient.

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REFERENCES

- Böhler, L. (1935). *Treatment of Fractures*, 4th English ed., translated by E. W. Hey Groves, p. 253, Wright, Bristol.
Greening, W. P. (1942). *British Medical Journal*, 1, 221.

Medical Memoranda

Pneumococcal Meningitis successfully treated with Sulphapyridine

The following case, in which the chief features were the sudden onset and the rapidity of cure with sulphapyridine, is reported in order to draw attention to the possibility of lowering the mortality rate of pneumococcal meningitis.

CASE REPORT

An unmarried woman aged 21 was admitted to hospital at 11 a.m. on Feb. 17, 1940. On Feb. 15 she had not felt very well, and on the 16th had sent for her doctor, who diagnosed influenza. Some spots were then present on her arms and legs and she also complained of diplopia. At 3 a.m. on the 17th she was very restless and started getting out of bed. She vomited 3 times, and by 5 a.m. was definitely unconscious.

On admission the patient was found to be comatose but very restless. Her head was retracted and her knees and hips flexed. She was lying on her side and giving out occasional meningeal cries. There were spots of an erythematous nature on her legs, and she was incontinent of urine and faeces. According to her mother she had not passed urine for 12 hours. It was difficult to examine her very thoroughly, as she was so restless, but there was definite evidence of squint and ptosis of both eyelids, the left being more marked than the right. Kernig's and Brudzinski's signs were positive, Babinski's sign was flexor, and the abdominal reflexes were absent. The only abnormal finding in her chest was evidence of slight consolidation at the left base. Her tongue was furred.

Under general anaesthesia 12 c.cm. of soluble sulphapyridine (equivalent to 4 g. of the drug) was injected intramuscularly. Lumbar puncture was performed, and turbid fluid ran out under considerable pressure, too high to measure with a manometer. A deposit soon settled at the bottom of the 40 c.cm. of cerebrospinal fluid that was taken, and from this deposit a slide was made which demonstrated extracellular pneumococci. There were 25,000 cells per c.mm., mostly polymorphs; with occasional red cells and macrophages; protein, 0.5 g. %; sugar, trace only; chlorides, 725 mg. per 100 c.cm. Urine showed albumin+, sugar+, and acetone+; its specific gravity was 1020. By 9 p.m. the patient was notably improved. Whereas