traumatic uraemia. The result in this case seems to give some support to that suggestion.

Case Report

The patient, an agricultural worker aged 65, was found lying in a pool of blood after his horse and cart had returned to the farm without him. As he was alone no details of the accident were available. It seems likely that the cart passed over his right leg.

He was admitted on July 5, 1946, about two hours after the injury, *in extremis*, with no ascertainable pulse or blood pressure. The only visible injury was a small puncture wound of the inner side of the right thigh. There was no bleeding from this wound on admission. X-ray examination showed no bone injury. The transfusion of 5 pints (2.8 l.) of plasma and 1 pint (0.57 l.) of blood (group B) raised the blood pressure to 110/60. No other immediate treatment was given.

On the morning after admission it was obvious that there was no circulation or sensation in the right leg below the knee. The left foot, in which the circulation had appeared satisfactory on the previous evening, now showed cyanosis of the toes. The popliteal pulse was palpable, but neither the posterior tibial nor the dorsalis pedis could be felt. There was no evidence of injury to this leg. The transfusion cannula had been inserted in the left ankle. Routine treatment for vascular injury was carried out—that is, heat to trunk, exposure of limbs, no smoking, 1 oz. (28 ml.) of brandy or whisky four-hourly. In view of impending gangrene of the right leg and the failing circulation of the left leg, exploration of the wound was considered advisable. This was carried out about 22 hours after the injury. There was considerable muscle damage, and the femoral artery and vein were completely divided at the junction of the middle and lower thirds and thrombosed. The wound was excised and closed with drainage after "icing" with proflavine-sulphathiazole powder. The following day the patient's general condition was poor. He was at times irrational and incontinent. The fluid intake was maintained—102 oz. (2.9 l.). The output was difficult to assess because of incontinence, but appeared to be lowered—20 oz. (0.6 l.). The blood pressure rose to 145/80. The general condition was about the same on July 8. The right leg was avascular to the knee, and the left avascular to the level of the ankle. The blood urea was 168 mg. per 100 ml.; plasma chloride, 525 mg. NaCl per 100 ml. (90 m-equiv./litre); plasma bicarbonate, 56 vols. per 100 ml. (25 m-equiv./litre); plasma protein, total, 5.42 g. per 100 ml. (albumin, 3.52 g.). The fluid intake was 84 oz. (2.4 l.) and the output 49 oz. (1.4 l.).

In view of these findings splanchnic block was advised, being carried out by Dr. MacKay of the department of anaesthetics: 40 ml. of 5% "novocain" was injected by the post route under 0.2 g. of thiopentone. After the injection the blood pressure dropped 20 points. Investigations on subsequent days were: July 9: blood urea 184 mg. per 100 ml. haemoglobin (?) (specimen taken soon after splanchnic block); July 10: 128 mg., 50%; July 11: 96 mg., 42%; July 13: 72 mg., 50%; July 15: 80 mg., 40%; July 19: 50 mg., 62%.

On July 18 the difficulty with regard to measuring fluid output persisted. The general condition of the patient remained about the same. There was general emaciation but otherwise no serious deterioration. Gangrene of both legs was well developed. The right leg was dry, requiring above-knee amputation. There were some blisters on the left leg and mild cellulitis. An above-knee amputation of the right leg was performed and 2 pints (1.1 l.) of blood was given. Next day the general condition improved, and he was rational for longer periods. The pulse was 110; blood pressure 130/80; haemoglobin 62%; blood urea 50 mg. per 100 ml. On the 24th the haemoglobin was 64% and the blood urea 28 mg. per 100 ml. A below-knee amputation of the left leg was made on the 25th and 2 pints (1.1 l.) of blood were given. On July 31 the haemoglobin was 84%.

Since the second amputation the progress has been uneventful. Incontinence has completely ceased, and the patient is rational; he eats and sleeps well, and the stumps are practically healed.

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MASSIVE PENICILLIN DOSES IN GENERAL PRACTICE

BY

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In the *Journal* of Nov. 30, 1946 (p. 842), it was stated that the writer knew of no comparative data for larger doses of penicillin than 100,000 units, or of such doses at infrequent intervals. I venture, therefore, to record a few minor conditions treated by this method in general practice.

Case Reports

Case 1.—Mrs. S., aged 45, had been troubled for some time with recurrent and severe boils in the nose. The usual duration of one of these was one to two weeks. Two days before I saw her one had started, and she consulted me as she was particularly anxious to go away for a week-end two days later. She had a full-blown and very painful boil just inside her nose. I gave her 200,000 units of penicillin by intramuscular injection, this being repeated the following day. The next day the boil had almost completely subsided, and gave her no further trouble.

Case 2.—Mr. P., aged 32, had had a large whitlow on the third finger of his left hand for three days. It was already discharging, but the whole finger was grossly reddened and swollen. In addition, he felt unwell, and an eruption of small furuncles had broken out all over his body. He was given 200,000 units of penicillin. The next day he felt very well in himself, although there was no significant change in the whitlow. A further 200,000 units was administered, and the following day the whitlow was discharging profusely, most of the swelling had subsided, and the furuncles had almost disappeared. Two further injections of 200,000 units were given, and he was able to return to work one week after the beginning of the infection. He was seen a week later, when the finger was practically healed.

Case 3.—Mr. S., aged 42, had had a severe carbuncle just below his left elbow for three days; there was much inflammation, and several heads were beginning to form. He felt unwell, and had a slight temperature. He was given 200,000 units of penicillin. The next day he felt much better, his temperature had fallen, and the heads of the carbuncle had increased in size and were already discharging. A further dose was given, and the next day the lesion was discharging profusely, much of the inflammation had subsided, and the patient was later able to express the main core of the carbuncle. Two further injections were given, and a week later (ten days from its onset) the lesion had completely subsided. No local treatment was given.

Case 4.—Master P., aged 5, had had a purulent conjunctivitis, gradually getting worse over a period of one week. When seen his left eye was completely closed, much swollen, and a purulent exudate oozed from under the lids. He was given 50,000 units of penicillin. The next day he was able to open the eye and much of the swelling had gone down, although there was still a purulent discharge. Two further doses of 50,000 units were given on the following two days. The eye was then perfectly normal, except for one or two small tags of crusted exudate on the lashes.

Case 5.—Miss F., aged 12, had a large sty on the lower lid of her left eye. This had been treated with ung. hyd. oxid. flav., and had all but cleared up when it broke out again. There was a similar occurrence after penicillin ointment. In all, she had suffered from the sty for a period of two weeks. A single injection of 200,000 units of penicillin was given, but she declined a further injection, as she did not relish the procedure. As it happened, this was not necessary, for by the next day the condition had cleared up.

Case 6.—Mr. G., aged 52, developed a carbuncle on his neck, following an eruption of boils; he had never had either before. When first seen the carbuncle was of ten days' duration. He had several small healed boils, and another carbuncle, three days old, was forming on his right thigh, so far without a head. He was given four daily injections of 200,000 units each of the highly purified white crystalline penicillin. At the end of

this time only a scar remained at the site of the carbuncle on his neck; the one on his thigh had completely aborted.

Case 7.—Mr. K., aged 41, had had a carbuncle on his right forearm for five days. He complained of pain up the arm and in the axilla. He was anxious to return to work as soon as possible, and 200,000 units of penicillin was given twice daily for three days, and a single dose on the fourth day. By this time the swelling had nearly subsided and the carbuncle was discharging freely.

Comment

The successful treatment of the above cases would seem to justify the use of large doses of penicillin at infrequent intervals, such as can conveniently be carried out in general practice. The particular dosage was chosen on the grounds of economy; larger doses might be even more effective and might possibly be of use in more serious conditions. In Cases 3, 6, and 7 the carbuncles cleared up in about five days and the patients were fit for work within a week; indeed, one patient continued working, though against advice, during treatment. This is an important consideration when the cost of the treatment is taken into account.

The introduction of the more highly purified white crystalline penicillin will probably greatly increase the value of this form of treatment.

Summary

Seven cases of minor conditions commonly met with in general practice, yet which had responded poorly to routine treatment, have been described. All responded strikingly to large daily injections of penicillin. In each case it was considered that there was a clear indication for this form of therapy; and in none was any local treatment given after starting penicillin therapy. It is of interest to note that the one patient who was given injections twice daily did no better than the others. In the few cases so far treated by this method no failure has been observed.

Medical Memoranda

A Case of Thrombosis of the Abdominal Aorta

The following case of thrombus formation on an atheromatous ulcer of the abdominal aorta immediately above the bifurcation of the common iliac arteries is thought worthy of record because of the disparity between the gross pathology and the symptoms produced. A remarkable feature was that in spite of a massive arterial occlusion no pain was experienced. Boyd (*Textbook of Pathology*, 4th ed., 1943) states that thrombus formation on an atheromatous ulcer of the aorta occurs much less frequently than might be expected.

CASE RECORD

A man aged 47 was admitted to the Falkirk Royal Infirmary complaining of numbness and coldness of both lower limbs of three days' duration. Seven days previously, while climbing a steep hill, he was seized with a pain in the left praecordium, extending down the left arm to the wrist, and a feeling as if his left leg was swelling and about to burst. After resting for half an hour he continued to climb the hill although the rest had not relieved the pain. On reaching the top he broke out in a cold clammy sweat and felt as if both legs were swelling to bursting point. His legs would no longer support him and he had to sit down and was later taken home in a taxi. In bed, apart from his legs and some residual precordial pain, he had no complaint. The legs were normal in colour and muscle power was normal. The next day the precordial pain and the numbness in his legs disappeared. On the third and fourth days he had no complaint whatsoever, although he remained in bed. On the fifth day he suddenly broke out in a cold clammy sweat and his right leg became numb and cold from "the sole of the foot to the hip." The leg became discoloured and muscle power was lost. *There was no pain.* Later that day his left leg from the sole of the foot to the knee became gradually numb and cold. Again pain was conspicuous by its absence. He also became incontinent of urine and faeces. Two days later he was admitted to the infirmary. On two occasions, two months previously, he had experienced slight pain in the calves of both legs on climbing a hill. This passed off quickly after rest.

On admission he was seen to be a well-built man whose face was somewhat congested and who had a fair degree of clubbing of the fingers. The right leg showed marked discoloration and was cold and pulseless. The line of demarcation was about 5 cm. below the inguinal ligament. There was complete loss of sensation and muscle power. The left leg was similarly affected immediately below the knee-joint. The heart was irregular in rhythm and force and the heart sounds were of very poor quality. The blood pressure was 110/80. Examination revealed no abnormality of any of the other systems. The Wassermann reaction was negative. He died some nine hours after admission.

Post-mortem Examination.—There was an atheromatous ulcer about 2 cm. in diameter on the anterior wall of the aorta about 4 cm. above the bifurcation of the common iliac vessels. It had involved the intima and media and was on the point of rupturing through the adventitia. There was a large adherent thrombus over the site of the ulcer, which extended down both iliac vessels to their bifurcation and involved 2 cm. of the left internal iliac. There was also a great deal of patchy calcification over the area covered by the thrombus. Proximal to this the aorta appeared normal, as did the other arteries. The heart was dilated and showed a marked fibrosis of the myocardium, the wall of the right ventricle being parchment-like. The right ventricle showed an old coronary thrombosis. An interesting feature was the complete absence of rigor mortis of the affected limbs.

I am indebted to Dr. T. Kay MacLachlan, Consultant Physician, Falkirk Royal Infirmary, for permission to publish this case.

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A Case of Dissecting Aortic Aneurysm Diagnosed Clinically

In view of the infrequency of the clinical diagnosis of cases of dissecting aortic aneurysm, I am grateful for an opportunity to publish this case. Dissecting aortic aneurysms are comparatively rare lesions, and particularly so in women; the incidence in men to women is three to one (Paul White, 1946).

CASE REPORT

A well-nourished obese woman aged 40 was admitted to hospital at midnight on Jan. 24, 1947. The patient was in an acute state of shock. She was ashen grey, clammy, and perspiring; her pulse rate was about 100, irregular, and of very poor volume. It was impossible to record the blood pressure in the right arm, but the systolic pressure in the left arm was 70 mm. She was very restless, but was able to give her history fairly well. This was as follows. At 12 noon on Jan. 24, suddenly, after a very heavy morning's work, she experienced a "terrible pain" between the scapulae and radiating slightly towards the back of the neck; she fell into a chair. She vomited twice, and when seen at 2.30 p.m. the same day by her husband she was acutely shocked and "helpless"; she coughed a very small amount of bright-red blood. The only relevant past history was that she had had a cough for the last three weeks, but otherwise was well and active. She had five children alive; in the case of the youngest child, labour was induced at the seventh month for "kidney trouble and blood pressure."

Clinically it was impossible to determine the size of the heart, and the heart sounds were almost inaudible. There were no abnormal physical signs in the lungs, abdomen, or central nervous system. The fundi showed arteriosclerotic changes, and no exudates were seen. It appeared that this patient had had an acute circulatory catastrophe. Coronary thrombosis seemed a possible alternative diagnosis, but the site and nature of the pain in the back and its maximum intensity at the onset were both points in favour of a dissecting aneurysm. She died at 11 a.m. on Jan. 25.

Post-mortem Findings.—The pericardium was considerably thickened and there was a large haemopericardium. The weight of the heart was 25 oz. (0.7 kg.), and the left ventricle was hypertrophied. There was a break in continuity of the intima of the aorta in the transverse portion opposite the origin of the innominate artery; this was some 1/2 in. (1.25 cm.) long in the longitudinal direction. This break was continuous with a cavity in the wall of the aorta and dissected about one-half the circumference of the aorta. The cavity contained blood clot, and extended down to the aortic valves. The coronary arteries were fairly healthy. There was extensive atheroma of the intima of the aorta, more marked distally. The left kidney was small, with the capsule adherent, and its surface was slightly granular.

I wish to thank Dr. E. H. Brindle for permission to report the case, and Dr. J. R. Mackenzie for much helpful criticism.

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