expectation of finding pus that finally decided me to do so. The result, however, was not altogether satisfactory, as though the pain was relieved only a few drops of pus were evacuated, the swelling consisting almost entirely of soft and sloughy tissue which took a long time to separate and so allow the wound to heal.

I very much regret that I was unable to confirm the diagnosis by bacteriological examination, but I think that the typical appearance of the lesion, coupled with the obvious sources of infection to which the patient was exposed, leave very little room for doubt as to the true nature of the disease. It is probable that the man became inoculated on July 2nd, when he went to work with an exposed open wound. Though the constitutional disturbance in this case appears to have been considerably greater than in either of the cases reported by Mr. E. O. Bousfield¹ and Mr. E. A. Clarke² the precisely similar treatment which I adopted was followed by an equally successful result as in those cases.

Ilford.

SPLENO-MEDULLARY LEUKÆMIA: REMARKABLE TOLERANCE OF ARSENIC.

BY CHARLES HEATON, M.D. BRUX., M.R.C.S. ENG.,
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THE notes of the following case of spleno-medullary leukaemia will be of interest at the present time in showing the remarkable way in which arsenic is tolerated by some patients. The patient came under my care in July, 1899, with the disease in an advanced condition, the blood showing typical features and the proportion of red corpuscles to leucocytes being 12 to one. He was taking liquor arsenicalis in small doses (from two to three minims) twice a day, but even this caused gastric irritation and abdominal discomfort, and had to be omitted. In consultation with Dr. H. D. Rolleston hypodermic injections were advised, beginning with $\frac{1}{10}$ th of a grain of arsenious acid (this was later changed to arseniate of soda). The following were the amounts injected.

Date.	Duration of treatment.	Amount of drug administered.	Duration of intervals.
1899. Sept. 29th to Nov. 19th.	51 days.	4 grains arsenious acid.	—
Interval, Nov. 19th to Dec. 5th.	—	—	16 days.
Dec. 5th to Dec. 12th.	7 days.	1½ grains arsenious acid.	—
Interval, Dec. 12th to Dec. 18th.	—	—	6 days.
Dec. 18th to Jan. 2nd.	15 days.	7½ grains arseniate of soda.	—
1900. Interval, Jan. 2nd to Jan. 8th.	—	—	6 days.
Jan. 8th to Feb. 12th.	35 days.	28 grains arseniate of soda.	—
Interval, Feb. 12th to March 5th.	—	—	22 days.
March 5th to March 13th	8 days.	½ grain arseniate of soda.	—
Interval, March 13th to March 21st.	—	—	8 days.
March 21st to May 1st.	41 days.	34 grains arseniate of soda and 2 grains of sodium cacodylate.	—
May 1st to May 16th.	15 days.	8½ grains sodium cacodylate and 9 grains of sodium cacodylate by mouth.	—
May 16th to June 26th.	41 days.	35 grains arseniate of soda and 1½ grains of sodium cacodylate by mouth.	—

The total number of days was 271, including intervals amounting to 58 days, and the total amount of hypodermic administration was as follows: arsenious acid 5½ grains,

arseniate of soda 105 grains, and sodium cacodylate 10½ grains. In addition, 10½ grains of sodium cacodylate were administered orally. The maximum dose administered at one time was 2½ grains of arseniate of soda, equivalent to 4 drachms 26 minims of liquor sodæ arseniatis.

The progress of the case was very carefully watched and the patient was seen in consultation by Professor W. Osler. Weekly counts of the blood were made by myself and the urine was tested for arsenic. At no time were there any objective symptoms of poisoning, no pigmentation of the skin, no evidence of neuritis, no irritation of the conjunctivæ, the subjective symptoms being restlessness and feeling of "pins and needles" in the legs, this being the indication for an interval. Mucous diarrhoea occurred latterly, but as this is a frequent concomitant of leukaemia it was probably unconnected with the treatment. The patient had suffered before the commencement of the treatment from slight eczema at the flexures of the joints and a mild but worrying herpetiform eruption of the prepuce. Both these conditions continued unaltered during the administration. The influence of the treatment was for a time apparent in the blood, as shown by the differential count, the average number of red corpuscles keeping steadily about 3,000,000 per cubic millimetre. The arsenic was rapidly eliminated in the urine, Marsh's test showing large quantities for the next 24 hours after injection and then in rapidly diminishing amounts for several days afterwards, but for exactly how long I am not able to say precisely.

The solution used for the hypodermic injections was a 1 in 500 solution of eucaine hydrochloride B, 15 minims of which contained in solution one grain of arseniate of soda. The injections were made with a very fine needle and one of Down's "all metal" syringes, holding 20 minims; with this one is able to warm the fluid to blood heat by holding the syringe over a spirit flame. If the fluid is injected cold much local irritation ensues. The solution was filtered and boiled frequently and appeared to undergo some chemical change if kept for more than a week, when it caused a little irritation and was prone to grow a mould if contaminated. With the above precautions no local trouble at the seat of injection ensued.

I found that cacodylate of soda when hypodermically administered was followed by no apparent result of any kind, but that administration by the mouth was always succeeded by a complaint of a taste of garlic and of gastric disturbance.

Westgate-on-Sea.

RESULTS OF 35 PROPHYLACTIC INJECTIONS OF THE ANTI-DIPHThERIC SERUM.

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FOR CHILDREN.

RECENTLY, at the Suntrap Convalescent Children's Home, High Beech, Essex, three consecutive cases of faucial diphtheria occurred. At the time there were 38 children in the home, so after the third case developed it was deemed advisable to try the effect of prophylactic doses of antitoxin. I think the result obtained may prove interesting. I may say that the three infected children were removed immediately the diagnosis was made to the sanatorium, situated about 50 yards distant from the home. Accordingly I started the injections on Dec. 5th, 1900, when I injected 15 of the children, finishing the remaining 20 the next day, Dec. 6th. The serum used was that obtained from the Jenner Institute of Preventive Medicine, and the injection was of the quantity and strength of one cubic centimetre containing about 334 units, the prophylactic dose prescribed on the bottles. In every case the strictest antiseptic precautions were observed and the skin of the flank was the site of injection. The following were the results obtained: in no case did any local lesion follow at the site of injection; no other case of diphtheria ensued; and in 31 cases no reaction followed. The following are the notes of the remaining four cases.

CASE 1.—The patient was a boy, aged five years, suffering from rickets and chronic tuberculous peritonitis. He was injected on Dec. 5th. On Dec. 9th the sterno-mastoid glands on the right side of the neck became slightly

¹ THE LANCET, Oct. 20th, 1900, p. 1133.

² THE LANCET, Nov. 10th, 1900, p. 1346.

enlarged, hot, and tender; there was no faucial lesion and the temperature was 101° F. On Dec. 10th the temperature was 98·5°, the glandular swelling, tenderness, and heat having subsided.

CASE 2.—The patient was a boy, aged six years, suffering from early spinal caries without abscess formation. He was injected on Dec. 5th. On the night of Dec. 10th and again on the night of the 11th he complained of pain in the left knee. The joint was a little warm but there was no apparent swelling or stiffness. His temperature was never above 99° F., and after the night of the 11th he complained of no more pain.

CASE 3.—The patient was a girl, aged five years, suffering from tuberculous hip disease with ankylosis of the joint. She was injected on Dec. 6th. On Dec. 9th she developed a scarlatiniform eruption all over the trunk, arms, legs, and face. Her temperature was 100° F. The child did not complain of feeling ill and the rash was evidently unirritating. On Dec. 10th the rash was only apparent on the thighs and abdomen. Her temperature was 99·6°. On Dec. 11th the rash had quite gone. Her temperature was 98·5°.

CASE 4.—The patient was a boy, aged five years, suffering from early tuberculous hip disease. He was injected on Dec. 6th. On Dec. 14th he developed a papulo-macular eruption on the abdomen, chest, and arms. His temperature was 98·6° F. I had no further opportunity of watching his progress.

The results obtained from these prophylactic injections are certainly encouraging. The three infected children undoubtedly contracted the disease from one another, but after the injections no further cases developed. The occurrence of antitoxin phenomena after quite small doses of antitoxin is also interesting to note.

Waltham Abbey, Essex.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ELTHAM COTTAGE HOSPITAL.

A CASE OF PERFORATION OF THE STOMACH DUE TO GASTRIC ULCER; OPERATION, RESULTING IN RECOVERY.

(Under the care of Dr. J. D. RICE.)

THERE are three varieties of perforation in gastric ulcer. In the ordinary form an opening exists which is large enough to permit extensive extravasation of the stomach contents so that a general virulent peritonitis is rapidly set up. In a second form the extension of inflammation from the ulcer leads to the formation of numerous adhesions, limiting the extravasation which occurs subsequently, so that the peritonitis induced is confined to a small area, and a localised abscess results. In the third variety the perforation is minute, so that, although a general peritonitis is set up, it is not necessarily virulent in character, and the opening itself is soon closed by the effusion of plastic lymph. To this class the following case probably belongs. The virulence of a peritonitis varies greatly and is dependent on the form of micro-organism present. In all cases of peritonitis a bacteriological examination of the exudation is desirable.

On July 7th, 1900, Dr. J. D. Rice was asked to see a girl, a domestic servant, who had arrived from a distance in a vehicle and was said to be dying. He found she had such acute pain in the abdomen that she dared not cry out on account of the agony which it caused. Her temperature was 103° F., the pulse was 130, and the respirations were 24. Her history was as follows. For some time she had had pains in her stomach, with vomiting, accompanied by great pain, which always occurred after taking food. The ingestion of fluids alleviated the pain provided sickness was not caused. The vomited material she described as tasting sour;

it occasionally contained blood, but never in great quantity; her bowels were irregular. On the morning of July 6th she went to a medical man who gave her some medicine and some advice about her food. At 7 P.M. the same day she had an attack of sickness, during which she felt "something give way with a snap in her inside." The pain caused was so severe that she fell on the kitchen floor and lay there moaning until she was discovered after some time. As she believed herself to be dying the medical man whom she had seen that morning was sent for; he ordered her to bed and advised that her relatives be communicated with. They sent her to see Dr. Rice on the morning of July 7th.

On examination the abdomen was found to be distended, rigid, and immobile; it was painful to pressure on the epigastrium but not elsewhere. The liver dulness was absent. The patient refused to inspire deeply on account of the pain. Recognising the probability of a perforating gastric ulcer Dr. Rice suggested to her relatives that she should enter the hospital in order to undergo an operation as her home was by no means antiseptic. After two hours' deliberation they consented and she was removed to the Eltham Cottage Hospital at 8.30 P.M. Her temperature before removal was 104° and on arrival it was 102°. She was then rather collapsed and verging on the unconscious.

Mr. A. S. St. John and Mr. H. Sandford Smith saw the girl in consultation with Dr. Rice and confirmed his diagnosis, and he therefore decided to operate at once. Mr. St. John gave the A.C.E. mixture and Dr. Rice opened the abdomen in the middle line by an incision six inches in length. All bleeding points were secured by forceps. On opening the peritoneum in the usual way Dr. Rice thought that free gas escaped, though Mr. Smith was not of the same opinion. The stomach presented in the wound. Hot antiseptic sponges were placed round it and there was an escape of fluid which only differed from normal peritonitic fluid in containing some white flocculent particles. Contrary to expectations, on examining the stomach inch by inch no perforation was found, but a portion of its anterior surface was fixed by very fragile adhesions of lymph to the abdominal peritoneum. These adhesions, Dr. Rice believed, occluded the perforation, and as the patient was then breathing badly it was necessary to finish the operation rapidly. Hot saline solution was injected into the sub-mammary tissue and a hypodermic injection of ether and strychnine was given. The abdominal viscera were flushed with a solution of mercuric iodide and were sponged as dry as possible. The peritoneum was closed with interrupted silk sutures. The portion near the adherent stomach being partially digested gave way if any strain were put on the sutures. The abdominal wall was closed by strong silk passing through all its layers. No drain was used. The wound was dressed with iodoform gauze.

At 1 A.M. on the following morning the patient had recovered from the shock of the operation. The temperature had fallen to 100°, the pulse was 110, and the respirations were 20. The patient had an uninterrupted convalescence; on only one occasion did her temperature rise above 100°. She was nourished by nutrient enemata for six days and the wound was dressed on the sixth day. It healed by first intention. After four weeks she was discharged cured and went to a convalescent home. On Oct. 29th she was in perfect health and had no digestive troubles.

Remarks by Dr. RICE.—The points of interest in this case are that adhesions formed in about 27 hours of sufficient strength to occlude the perforation, and that operative interference in an apparently moribund patient prevented a general peritonitis which would doubtless have proved fatal.

ROYAL BERKSHIRE HOSPITAL, READING.

A CASE OF JEJUNAL INTUSSUSCEPTION; MULTIPLE GROWTHS IN THE JEJUNUM AND DUODENUM; LAPAROTOMY; DEATH; NECROPSY.

(Under the care of Dr. W. J. MAURICE.)

THE occurrence of intussusception in an adult is very rare, and it is in the majority of the cases associated with the presence of a new growth. Usually the new growth is at the apex of the intussusception, but sometimes it is found above the invagination,¹ and in these cases it may give rise

¹ THE LANCET, May 7th, 1892, p. 1028.