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. C. Bousfield[1] and Mr. E. A. Clarke[2] 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., L.R.C.P. LOND.

THE notes of the following case of spleno-medullary leukæmia 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. 1900.	15 days.	7⅔ grains arseniate of soda.	—
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.	8⅔ grains sodium cacodylate and 9 grains of sodium cacodylate by mouth.	—
May 16th to June 26th.	41 days.	35 grains arseniate of soda and 1⅔ 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 10⅔ grains. In addition, 10⅔ grains of sodium cacodylate were administered orally. The maximum dose administered at one time was 2⅔ 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 diarrhœa occurred latterly, but as this is a frequent concomitant of leukæmia 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.

[1] THE LANCET, Oct. 20th, 1900, p. 1133.
[2] THE LANCET, Nov. 10th, 1900, p. 1346.

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

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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