

A large ante-mortem clot was seen in the right heart.

Other organs were affected: kidneys, liver and spleen all congested. Judging from the severity of the disease in this instance, I think it improbable that recovery would have occurred under any circumstances.

The exact treatment carried out consisted in giving the following prescription:—

R.			
Liq. ferri perchlor.	..	...	m. xv
Liq. ammon. acetat.	...	...	ʒi
Aq. chloroform ad.	...	...	ʒi
Sig. Every 4 hours.			

No other drugs or stimulants are administered, with the exception of a purgative to open the bowels freely at the commencement of the disease.

But a careful watch is kept on the heart, and if this shows signs of collapse, as indicated by a weak and quickened pulse, then cardiac stimulants are called in to aid the failing circulation: the pulse is not relied on alone, because it may be full and not much quickened just before death.

When necessary, the following prescription is ordered:—

R.			
Liq. strychninæ	...	...	m. v
Tinct. digital.	...	...	m. vii
Aqua chloroform. ad.	...	...	ʒi

This is given alternately with the iron mixture every six hours, *i.e.*, four doses of each in 24 hours.

The number of cases treated with iron alone was six; the remaining four needed the addition of the strychnine mixture; no case got anything but iron before the fifth day.

Besides these medicines general principles were followed in the management of the cases.

The chief lines followed were keeping up the bodily strength by giving nourishment freely in a liquid form—milk, beef tea, chicken and mutton broths; these were taken at two-hourly intervals.

A plentiful supply of fresh air was also insisted upon and ensured by taking the windows off the ward.

When the temperature rose to 103° F., sponging was done.

Bed clothes limited to a sheet and no clothes on the patient.

Pain was relieved by applying lin. camph. co. to the chest and, when necessary, morphia injected.

Chloralamide was ordered for sleeplessness, but efforts were made first to obtain rest by sponging and sometimes alcohol tried.

At the crisis collapse was looked out for, and alcohol administered if required.

There is no very satisfactory explanation of the action of iron in pneumonia.

Generally fevers contra-indicate the use of iron; however, in these cases it does not seem to have upset the stomach.

It is not likely that it has a specific action against the pneumococcus.

Iron enters the circulation as a complex albumen compound and acts on the red blood cells and not on the plasma: it increases the hæmoglobin and therefore aids oxygenation which thus helps the heart, and so carries out one of the great indications in the treatment of pneumonia.

The drug is excreted by mucous surfaces and exerts a remote astringent effect; its powers in this way are feeble, and large doses are essential to obtain this action.

This astringency lessens the excretion in the affected lungs in the first stage: the liq. ferri perchlor. is chosen as it is the acid preparation and consequently most astringent.

The products of inflammation are removed by absorption and subsequent excretion, and not so much by expectoration, so it is not necessary to give expectorants; therefore iron is not contra-indicated on this account.

The liq. ammon. acetat. is added as it is a diaphoretic, diuretic and general stimulant.

So the initial purge, the iron and ammonia all tend to prevent the accumulation of blood in the lungs, and these are aided by counter-irritation to the chest and free ventilation.

In conclusion, I recognise that many cases of pneumonia do well under any treatment, but I certainly believe iron exerts a specially favourable influence on the disease, and is certainly much better than the excessive use of stimulants often adopted.

#### A SUGGESTION FOR THE TREATMENT OF GONORRHOEA.

By C. DUER,

MAJOR, I.M.S.,

Maymyo.

THE serious and far-reaching effects of gonorrhœa render a speedy and complete cure most desirable.

One has but to think of stricture of the urethra and its results, of orchitis and sterility, of inflammation of the uterine appendages which is most generally due to gonorrhœa. Of these latter results one sees many in this country both in Europeans and in Natives. In America I was much struck by the large number of operations for removal of uterine appendages. It is difficult to imagine the misery and long-continued suffering represented by them, to say nothing of the resulting sterility.

The methods of treatment of gonorrhœa are many, but none appear to be very satisfactory. It is surprising how difficult sometimes it is to cure the mildest attack, even when treatment has been commenced from the first.

I would suggest to those in charge of military and large hospitals a trial of Bier's treatment, especially in recent cases, where the inflammation is confined, as I believe it always is, to the

anterior part of the urethra. I have myself very little material to experiment on.

As to method, I would suggest that an elastic band about 1 inch broad be applied to the penis 2 inches or so above the meatus, continuously, or intermittently, several hours on and several hours off. Rest in bed during the treatment might or might not be necessary. The tightness of the band would have to be carefully regulated so as, while hindering the venous return, not to stop the arterial supply. Frequent washing away of the discharge by some mild antiseptic would be desirable. In addition, irrigation of the urethra beyond the band might be advisable, but I would suggest a trial of the band alone to begin with, and that no drugs be given.

### SPECIAL REPORT OF THE MEDICAL COLLEGE HOSPITAL FOR 1908.

By C. P. LUKIS, M.D., F.R.C.S.,

LIEUT.-COL., I.M.S.

Principal, Medical College, Calcutta.

#### PART I.—MEDICAL CASES.

- (1) The rationale and results of treatment of cholera by the intravenous injection of hypertonic saline solution.
- (2) A note on several fatal cases of extensive atheroma and dilatation of the pulmonary arteries without valvular lesion (with full *post-mortem* reports).
- (3) An analysis of 58 cases of cachexial fever, with notes on the atoxyl treatment (illustrated by numerous charts and diagrams).
- (4) A note on Calmette's Ophthalmo-tuberculin reaction (with tabular statement).
- (5) A note on scurvy amongst Pathans in Calcutta.
- (6) A case of cerebral abscess, cured by operation.
- (7) On the treatment of leprosy by the administration of large doses of sodium chloride.
- (8) Analysis of 93 cases of opium poisoning.
- (9) A case of abdominal aneurysm, bursting sub-peritoneally.
- (10) A case of aneurysm of the innominate artery, bursting into the trachea.
- (11) A case of phosphatic diabetes, terminating in phthisis (with chart).

#### (1) RATIONALE AND RESULTS OF THE TREATMENT OF CHOLERA BY INFUSIONS WITH HYPERTONIC SALINE SOLUTIONS AT THE MEDICAL COLLEGE HOSPITAL DURING 1908.

During the four years from 1902 to 1905 inclusive, 417 cases of cholera were treated at the Medical College Hospital with a mortality of 61.2 per cent. This figure closely corresponds with that given by Morehead for a similar class of patients treated at the J. J. Hospital, Bombay, as long ago as 1860, his figures being from 60 to 65 per cent., so that no material reduction in the death-rate of this terrible disease has resulted from the great advances in our knowledge of its causation dating from the discovery of the comma bacillus by Koch a quarter of a century ago. In 1906 an effort was made by the Pathologist of the hospital, in conjunction with the then Resident Physician, Captain J. W. D. Megaw, I.M.S., to obtain better results by copious intravenous infusions of normal saline solution, controlling the amounts by their effects in raising the blood pressure to the normal. A slight reduction in the mortality resulted, but in too many cases the injections rapidly restarted the diarrhoea, and within a few hours the marvellous temporary benefit

was completely lost, as has indeed been the experience with all previous workers, from the first trials of Latta and Mackintosh in Edinburgh in 1831, up to the present time. The method was, therefore, once more almost completely abandoned, and the mortality for the years 1906-7 amounted to 51.3 in spite of the use of normal saline injections to a much larger extent than in former years.

During nearly the whole of the present year hypertonic solutions, as suggested by Major Rogers, have been used by the Resident Physician, Captain Maxwell Mackelvie, who was in charge of the cholera wards throughout the severe outbreak of cholera during the first eight months of the year (only some eight cases having been admitted in the last four months), and their effects on the composition and pressure of the blood have been carefully investigated by the pathologist. The considerations which led to the introduction of this method of treatment were the following. In the collapse stage of cholera the diarrhoea becomes much less copious, presumably as the result of the great concentration of the blood owing to the loss of fluid. The intravenous injection of several pints of normal saline solution (0.65 per cent sodium chloride) as hitherto used, will dilute the blood once more and restart the outpour through the damaged intestinal wall. If, however, the lost fluid could be replaced and at the same time a high percentage of salt maintained in the circulating blood, so that the osmotic currents would tend to carry fluids into, rather than out of the blood stream, then the failing circulation might possibly be restored without leading to rapid draining away of the replaced fluid through the bowels. The results which have followed this method of treatment have been most gratifying, but before considering them, it may be well to first briefly mention certain observations which have been made on the blood changes in cholera which furnish a complete scientific basis for the use of hypertonic saline injections.

*The relation of the loss of fluid and salts from the blood in cholera to the severity of the disease.*—In the middle of the last century Dr. George Johnson strenuously asserted that there was no relationship between the loss of fluid from the body in cholera and the death-rate of the disease, and based his advocacy of the castor oil treatment largely on this point. Wall and others, however, have shown that the rapidity of the loss is of no less importance than the actual quantities. The true test of the effect of the loss of fluid on the circulation is the degree of concentration of the blood. By means of measuring the volumes of corpuscles and serum respectively with the hæmatocrite, it has been found that there is a most definite relationship between the loss of fluid from the blood and the severity of cholera. Thus, in those cases which proved fatal in spite of infusion, almost two-thirds of the entire fluid had been lost to the circulation, while in those mild cases which recovered without requiring intravenous injections the loss was but one-third. In an intermediate series of cases which required infusion but recovered, the loss was just over one-half and was accompanied with a marked degree of collapse. The amount of chlorides in the blood, which form such a large percentage of the whole saline constituents, have been estimated by titrating the serum with standard silver nitrate solution, both before and after hypertonic infusions. The results are most instructive, for in the worst cases of cholera not only did the blood show no concentration of the salts, although two-thirds of the fluid had been lost, but the salts were actually lower than normal, only from 0.6 to 0.7 per cent having been repeatedly found (against nearly 1 per cent. in Bengalis, as shown by Captain McCay, I.M.S.) and in some of them the blood was actually commencing to hæmolyse. Yet immediately after the hypertonic injections, which had raised the salts contained materially, the serum was quite clear and the hæmolyse had been checked. (These data suggest that hypertonic infusions might be of value in