

the intestinal secretion excited by the salt. If the saline was not given in concentrated form or was administered at a time when the bowel contained much liquid, the action upon the blood was very slight. The effect is very rapidly produced; in one instance, in a man after giving six drachms of sulphate of soda, the number of blood corpuscles per cubic millimetre rose from 5,000,000 to nearly 7,000,000, owing to the great loss of liquid in the free purgation. A few hours later this increase was no longer apparent, as the blood had rapidly abstracted the tissue fluids and so replaced the amount lost. You know that the pinched, shrivelled aspect of a person who has had a severe choleraic attack is due in large part to the absorption of the tissue lymph to supply the rapid waste caused by the liquid stools.

It is on this principle that the use of cathartics in dropsical effusions is based, and Hay's method is new only in the application. In the administration of the salt, the solution must be concentrated, and taken at a time when there is very little fluid in the intestines. Our usual plan is to order the patient to take nothing after the evening meal, and then, an hour or so before breakfast, the salt is given dissolved in as little water as possible. The sulphate of magnesia is preferable to the sulphate of soda, as it is more soluble. Four or six drachms in an ounce of water is the usual dose, but two ounces, or even more, may be given. The patient must not drink after it. This usually produces from four to eight watery stools, without pain or discomfort of any sort. It very rarely disagrees, though you remember in the case of Mrs. C., the patient with extensive anasarca from Bright's disease, we had to give up this plan on account of the vomiting it induced. Dr. Hay calls attention also to another point which we have repeatedly verified, namely, that the salt acts also as a diuretic. He found experimentally that the blood underwent a second concentration, not so marked, but lasting for the greater part of the day, and this he rightly attributed to the diuretic action of the absorbed salt.

Case II. is a striking instance of the value of this plan of treatment. Two weeks ago I demonstrated to you that the fluid reached as high as the third rib, and was rapidly subsiding. He has been given every second morning, since his admission on the 12th, half an ounce of sulphate of magnesia in an ounce of water, and, as you can see by the chart, this has produced from three to nine watery stools. His diet has been restricted somewhat in liquids, but he has had no other medicine. We find now, on examination, good expansion on the left side; the heart has returned to its normal situation; on palpation a distinct friction can be felt in the axillary region; tactile fremitus is present; on percussion the note is clear in the antero-lateral regions, and posteriorly it is resonant almost to the base; the breath sounds are heard well over the whole side, with the exception of the extreme base, where they are still

feeble. The patient was discharged the day before yesterday to go on duty as night watchman on the surgical side. We may regard this as an exceptionally good result. It is the third instance in which I have seen a large effusion disappear rapidly treated by Hay's method.

Exudations of less extent will sometimes disappear in a few days. Case I. we saw early in the acute stage, and, to relieve the distress, he was wet-cupped with marked benefit. This is a measure which I do not often employ, as I find that morphia subcutaneously fulfils the indication; but here the pain was rapidly relieved and the breathing became much quieter. The effusion in this case reached only to the fifth rib. He had four or five doses of the concentrated saline solution, and was freely purged. To-day there is scarcely a trace of fluid, and you notice that, on percussion, the lung is clear almost to the extreme base.

In Case III. saline cathartics were also employed, but other and more prompt measures were indicated. The left chest was full, the percussion note on the clavical was absolutely flat, and the fluid had been accumulating for at least seven weeks. Under such circumstances the withdrawal of some of the fluid was imperative. It is a good rule to aspirate when the fluid reaches the second or third rib. The removal of from twenty to thirty ounces will often suffice, and you can trust to medicines to remove the balance. When you find the fluid at the level of the clavicle, aspirate at once, as connected with this condition there are certain dangers which we cannot ignore. Such patients are liable to sudden and alarming attacks of dyspnoea. This occurred in Case III., and my house physician, Dr. Donohue, wisely withdrew at once between two and three pints of fluid. There are instances, also, of sudden and fatal collapse under these circumstances. Such a case occurred last spring in the Philadelphia Hospital, when I was on duty for my colleague, Dr. Tyson. A woman was admitted, stated to be suffering with pneumonia. I saw her for a few minutes at the conclusion of my visit, and made a rather hasty examination, and determined the existence of dulness on the left side. She died suddenly and unexpectedly the next day, and, to our mortification, we found the left chest full of fluid, the lung greatly compressed, and the heart pushed far over. We could not determine the cause of the sudden collapse, but I feel certain it might have been averted by timely aspiration.

In Case III. we would not trust to the saline cathartic alone as the patient's general condition was not good. He was aspirated twice subsequently, and had an occasional morning purge. At present he is convalescent, has gained in weight and strength, and although there is still dulness at the left base, I believe it is due chiefly to thickened pleura and not to fluid.

My experience with this method is sufficient to justify a strong recommendation of its merits. In the general dropsies—renal or cardiac—the results