

## MEDICAL MATTERS.

### ON POST-OPERATIVE DROWNING.

The *British Medical Journal* publishes an interesting Paper on the above subject, presented in the Section on Pathology at the Annual Meeting of the Association by Drs. Albert S. Grünbaum and Helen G. Grünbaum, from the Department of Pathology, University of Leeds. They say, in part:—Nowadays almost all surgical cases of collapse are infused, irrespective of whether such collapse be due to loss of blood or to fall of blood pressure from some other cause. The immediate effects are usually sufficiently gratifying and dramatic to obscure from the surgeon's vision the resulting tragic ending. Yet post-infusional death from pulmonary oedema is common enough to raise again the question, Was it inevitable?

For some years now we have paid attention to the circumstances, both pathological and clinical so far as ascertainable, accompanying these cases of post-operative drowning, and as a result we believe the following to be the main contributory factors, in addition to the saline infusion itself: (a) Anæsthetic, (b) condition of kidneys, (c) technique, and (d) condition of the lungs. We will consider each of these a little more in detail.

*Anæsthetic.*—With scarcely an exception, the anæsthetic used in these fatal cases has been ether, sometimes in combination, but most often by itself.

*Condition of the kidneys.*—In some of our cases the kidneys have been grossly diseased.

*Technique.*—Under this heading are included not merely the introduction of the cannula into the vein, but also the composition and temperature of the saline fluid and the rate of flow. Those points seem to be of importance, for Leob and his co-workers noted that as their technique improved, the occurrence of pulmonary oedema diminished. In hospitals the operation is very often delegated to a resident officer, often very junior, who, together with his seniors, is frequently ignorant of the exact composition of the nurse-compounded fluid that he is infusing. He allows it to flow in without either knowing or being able to control the temperature. It should be realised that if the condition of the patient be grave enough to necessitate infusion, the details of administration require special care and attention. The danger has to some extent been recognised by surgeons. The following reference to the matter is to be found in Moynihan's *Abdominal Operations*: "It has become a general custom more especially among the resident officers, to

give intravenous saline injections to all patients who are suffering in any serious degree from shock. The custom has much to recommend it, but I am strongly disposed to think that it is not seldom provocative of harm, for, in some cases, when large quantities of fluid are injected, an acute oedema of the lung, with copious frothy expectoration, occurs. On *post-mortem* examination of such cases it can be seen that there is an acute oedema of both lungs; the lungs, in fact, are water-logged. Saline infusions are remedies we cannot afford to do without, but a little more discretion than seems to be generally customary should be exercised in their administration." But we doubt whether the extent and gravity of the danger has been generally appreciated or the reasons for the catastrophe recognised.

*Lungs.*—In many cases it has been obvious that pre-operative disease of the lungs has existed. Judging from the results, the combination of ether and saline infusion is decidedly contraindicated, if pulmonary oedema is to be avoided; and even more if, in addition, there be any indication of renal insufficiency. Since the oedema is quite as marked, and sometimes more marked, at the apex as at the base of the lung, it is just possible that the sitting instead of the prone position might avoid the general water-logging and by limiting it to the base prevent a fatal issue.

Our conclusions, then, are:—

1. Saline infusion, especially intravenous infusion, should properly be used only to replace fluid lost from the body. Fall in blood pressure due to other causes should be treated by other therapeutic means.

2. The procedure of infusion should be carried out with the same care and skill as the main operation.

3. If it is anticipated that saline infusion will be necessary an anæsthetic other than ether should be chosen.

4. When co-existing renal insufficiency is suspected, intravenous infusion, especially in conjunction with ether as an anæsthetic, is better avoided altogether. Rectal infusion appears to be less dangerous, and subcutaneous infusion seems to stand between the two.

### THE NOTIFICATION OF PHTHISIS.

The announcement that in the near future a Local Government Board Order is to be issued making the notification of pulmonary tuberculosis compulsory will be welcomed by all local health authorities, and should materially help in the early recognition, and consequently the eventual extinction of the disease.

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