

open to the appeal to his heart and to his pocket when the individual case comes to his notice. The difficulty is to arouse his imagination, and make him see that pathetic body of people, very like himself and his own wife and children, who have no other source of help than the charity of their professional brethren.

In the future I believe that the efforts which the B.M.A. is making to induce the general practitioner to insure himself against the contingencies of life will greatly lessen the claims on the benevolence of the profession, but in the meantime the need is there, and it is very great.—I am, etc.,

London, W.1, Nov. 2nd.

ALFRED COX.

After-treatment of Empyema

SIR,—I imagine that most surgeons who take an interest in the after-treatment of the empyemata that they may operate upon must agree with Mr. Denis Browne in his contribution to the *Journal* of November 3rd. To state an empirical date for the removal of empyema tubes is quite as irrational as to assert that a tuberculous hip should be immobilized for six or twelve months or three years. I think that very many records and statistics relating to the treatment of empyemata are untrustworthy, because so often the healing of the sinus in the chest wall is taken as the criterion of cure.

A few weeks ago I saw a woman who had a "successful" operation for an empyema twenty years before. The wound healed, and she was well for thirteen years, when she "felt her chest filling up again." The cavity was again drained and the sinus allowed to close, and since then the operation has been repeated twice at intervals. When I saw her there was no drainage; she simply complained that she could feel the fluid accumulating. At operation 1½ pints of thick pus were liberated. The walls of the cavity were found to be very tough and fibrous, obviously the original one which had never been obliterated. The discharge rapidly abated, and I am sure that if I were to remove the tube now the wound would heal again as on the previous occasions. There is also no doubt that the surgeons who performed the previous operations were satisfied that she was cured.

I am convinced that the only reliable indication that an empyema is healed is to be found in the *x*-ray examination after the injection of an opaque substance into the sinus, and not until this shows complete obliteration of the cavity deep to the ribs should drainage be removed. Filling up the cavity with Dakin's solution and measuring the amount contained is useful and inexpensive, always provided there is no broncho-pleural fistula, but this only gives an idea of the size and not of the shape and boundaries of the cavity. Sometimes it is very important to be aware of the way in which an empyema is closing in, as, for example, in the multilocular variety or in those large empyemata where the apex is involved and where there is a tendency for this region to become shut off from the site of drainage and to be left as a residual cavity. The value of repeated *x* rays with an opaque substance cannot be exaggerated.

To minimize expense, I use the irrigation method in the early stages when the cavity is large, and then resort to *x* rays when the irrigation chart shows that the capacity is suitably diminished. For this purpose I have used 20 per cent. sodium bromide solution without any ill effects, but I have discontinued this because the shadow cast in the lateral view is not definite enough. I now use iodatol, and find it just as efficient as lipiodol and less expensive. I think globules are only formed if a small quantity is used in a large cavity. I shall welcome Mr. Denis Browne's cheap emulsion.—I am, etc.,

November 3rd.

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X-Ray Examination of Empyema Cavities

SIR,—One is indebted to Mr. Denis Browne for his article on this subject (*Journal*, November 3rd, p. 807), but I would like to emphasize certain points which I have found of special importance while working on the surgical side of the Brompton Hospital. One obtains here considerable experience of chronic empyemas—that is, empyemas which have not healed after the ordinary period of weeks or months, but have persisted for months or years. In the past year I have seen fifty-eight patients of this sort treated, and this excludes tuberculous pyopneumothoraces.

The most striking thing is that easily the largest number have been brought about because the original drainage tube was taken out at the wrong time—usually too soon. It is a patent fact that the teaching at universities to students of when to remove the tube in an acute empyema is sadly lacking. Here it has been known for many years that drainage should cease when the empyema cavity is obliterated. As in all septic cavities, this only occurs by the fibrosis and healing together of the cavity walls. A dogmatic time, or the nature of the discharge, are quite useless as criteria, and the fact that there is no cavity at the end of the short track can be the only indication. In the early stages, of course, where the cavity is still large, the amount of fluid it will hold is easily determined, and indicates its size, but later, when there is perhaps a small cavity with a long sinus, we have found *x* rays after the injection of lipiodol perfectly satisfactory to delineate the outline, and have used it as a routine for many years. Where a large quantity is necessary a barium emulsion can be used with perfect safety, and is, of course, cheap.

I would like to draw attention to three details of technique. (1) The opaque fluid should be run in with the sinus opening at the highest point. (2) After plugging the opening tightly a metal ring, as a marker, is placed over it. (3) Lateral as well as antero-posterior *x*-ray views are essential, and erect as well as recumbent views may be necessary if the cavity is large.

It can only be when the essential rules for removing tubes in empyemas are fully understood that numberless patients can avoid the long ill-health and frequent operations that become necessary when an empyema becomes chronic.—I am, etc.,

A. BRIAN TAYLOR.

Brompton Hospital, S.W.3, Nov. 5th.

Treatment of Haemoptysis

SIR,—The use of Congo red in the treatment of haemoptysis and other forms of haemorrhage, as described by Drs. Morlock and Scott Pinchin (*Journal*, October 27th, p. 762) is of very considerable interest and worthy of a more widespread application.

Congo red has been extensively employed by Bennhold, Bookman and Rosenthal, Strasser, and others in the diagnosis of amyloid disease.

Some years ago I made an investigation into this test (*Lancet*, February 20th, 1932, p. 391) which necessitated intravenous injections of the dye into forty-five patients, mostly children. A 1 per cent. solution was used and the dosage calculated on the basis of 0.25 c.cm. per kilo body weight—that is, from 6 to 12 c.cm. in children and 16 c.cm. for a 10 st. adult. No after-effects of any kind were noted and rigors were entirely absent. This, I think, was probably due to the observance of two points which are stressed by the Continental workers: (1) the use of Grubler's Congo red, which is free from such commercial impurities as lead and arsenic; and (2) the fact that all solutions were used within twelve hours of being made. Strasser observed that solutions more than