

terminated upon, an important point is where this should be made. On this question, as well as on the general subject of empyema, the valuable lectures of Mr. Godlee (*Lancet*, vol. i, 1886) should be carefully studied. The main thing is to secure the best drainage of the cavity, and I agree with Mr. Godlee that this is obtained by making the opening in the eighth or ninth intercostal space just external (or anterior) to the angle of the scapula.

As Mr. Godlee points out, an opening at the lowest part of the chest where the cavity is soonest obliterated is less efficient for drainage than one placed higher up opposite the part of the empyema, which is the last to close. The opening is best effected by making an incision through the skin and muscles of the intercostal space, and then thrusting a director into the pleural cavity and dilating the track thus secured by dressing forceps. No hæmorrhage of any importance is likely to occur by this method. During the operation the patient should be under chloroform, and should be placed on the affected side and over the edge of the table, so that the action of the sound lung is not impeded. An important question is whether part of a rib should be removed in order to secure space for the introduction of a tube so that efficient drainage is established. In adults, in whom the intercostal spaces are wide, this need not, I think, be done. Nor is it always necessary in young children. I have notes of several cases in which the empyema closed completely in less than three weeks after simple incision. Yet the space between the ribs in children is often so narrow that a tube of sufficient size cannot be introduced. In such cases about three-quarters of an inch of the rib just below the incision should be removed. The operation can be performed very easily with cutting bone forceps. It is advisable, I think, to remove the periosteum also, for otherwise the reproduction of the rib takes place so quickly that drainage may become difficult. I have never met with any hæmorrhage that could not at once be arrested, for the wound is open, and any bleeding vessel can be readily found and tied.

Another point is whether the cavity of the empyema should be washed out with an antiseptic lotion. I agree with those who think this should not be done in ordinary cases. It is well known that the proceeding has been followed by serious symptoms; while in a large number of instances the washing out seems unnecessary, for the pus withdrawn is quite free from decomposition, and the cavity has remained aseptic throughout. But in cases in which the discharge is from the first, or subsequently becomes, fetid, irrigation is very advisable. I have used a two or three per cent. solution of boroglyceride; boric acid lotion; and a solution of one part in 1,000 of tincture of iodine in water. The fluid used should be raised to a temperature of about 90°.

The prognosis, I believe, turns almost entirely on the duration of the empyema. In early cases—those within a month—recovery will, as a very general rule, take place. Sometimes it occurs very rapidly. In some instances the wound has, in children, entirely closed within a fortnight; but in cases of long standing the prospect is often very doubtful. The lung has become bound down; suppuration continues to be free; pus is apt to be retained, locked in by adhesions; the granulations covering the pleural surface become callosus; not rarely there is necrosis of one or more of the ribs; while the general condition of the patient steadily deteriorates, and amyloid degeneration of the internal organ not rarely ensues.

In cases in which the empyema is chronic, and in which suppuration continues after a free opening has been made, Estlander's operation, consisting of the removal of a portion of two or more of the ribs, should be performed. This operation is certainly of great value for two purposes. In the first place, through the free opening which it provides the finger can be introduced, and any adhesions that are found to be obstructing the free escape of pus can be broken down, so that free drainage of the deeper parts of the pleural cavity is secured. This is a matter of great importance. Adhesions may form in such a way as to bar the exit of pus from some part of the sac, and till they are removed no progress towards healing