

intubation until urgently demanded. This, however, occurred on the following day, about twenty-four hours after, when the dyspnoea was almost as distressing as the day before. I introduced another tube with the same satisfactory relief. After intubating again we auscultated, finding full and soft respiratory murmur, marked somewhat with coarse rales as before, which again disappeared after three or four hours of free respiration. After twenty hours the tube was again coughed out and required again to be introduced in a few hours with similar results. On the fifth day it was again coughed out and was not further demanded. The child recovered and the tube swallowed appeared *per vias naturales*.

The points in this case to be noted, in addition to the relief of the dyspnoea and the recovery, are:—

1. The prolonged relief obtained after the tube had been expelled, together with a membranous cast of the larynx. This shows the importance of adopting some mechanical means to remove the exudation from the larynx and not allow the patient to die without such effort. Either a squirrel-tail brush, as recommended by McKenzie, or the O'Dwyre tube, which I have found in a number of other cases, as in this, to be the means of bringing away a cast of the larynx, and in one case, which I now show you, an entire cast of trachea and bifurcation.

2. The impossibility of diagnosing by the aid of the stethoscope, in a case of extreme dyspnoea, the condition of the lungs, as contrasted with the readiness and clearness with which it is done as soon as the tube is introduced—a fact which stands against tracheotomy, for if the lungs were known to be already involved, so serious an operation as tracheotomy would not be performed; whereas the simpler bloodless operation of intubation would still be advisable in view of the relief it would afford.

3. The engorgement of, and exudation from, the bronchial mucous membrane, due doubtless to the general venous engorgement from long continued asphyxia, proven by its speedy and complete removal in the course of a few hours after air has freely entered.

4. This was a case in which it was not to be

said, "We feared it would not get well," but one that any skilled physician would say "was dying." The power for expulsive effort was gone; such effort had for some time ceased; coma was rapidly supervening. I believe the tube saved his life.

Without being wearisome in detailing other cases, I wish to make mention of a symptom which I have discovered in a number of my fatal cases and which I consider of prognostic value.

After introducing the tube in these cases referred to, the dyspnoea was at once relieved, and the patient looked bright and with a good promise of recovery.

On examination, the stethoscope reveals a free respiratory murmur, apparently full and easy, but has a metallic character, has lost the soft breezy quality. I at first thought it was due to the sound of *the air* passing through the tube and communicated downwards, but in my cases that recovered this quality was not appreciable. In all the cases where I was able to recognize this metallic murmur death followed in from two to four days, from extension of the disease to the bronchi.

I look upon it as diagnostic of the incipient stage of the exudative process throughout the mucous membrane of the larger and smaller bronchi, not yet having thrown out the exudate, but swollen and thus lessening the lumen of the tubes and changing the quality of the sounds. With this symptom present the prognosis is bad, even though the patient looks bright and otherwise hopeful.

In all I have had nineteen cases of intubation in diphtheritic croup. Fourteen died and five recovered.

The ages of those that recovered were respectively, three, five, seven, six, and nine. Of those that died, seven were between the ages of twelve months and three years; four between three years and seven years; one at eleven years; one at twenty-one years; and one at twenty-three years.

Nine died of extension of the exudative disease into the bronchi. Of these nine, five gave good promise of recovery for two days after the tube was introduced; the other four were of such malignancy that hope was not entertained.