to state here that it consists essentially of only two steps: (1) The removal, chiefly by mechanical means, of all granulation tissue, cast-off epithelium and detritus from the diseased tympanic cavity of antrum; and (2) the destruction, by chemical means, of all pathogenic germs. Injections of hydrogen dioxide, through variously curved glass tubes, play a very important part in the procedure, not simply on account of the germicidal action of this fluid, but largely because the active effervescence which at once takes place when it comes in contact with decomposing organic material, aids in dislodging the obstructing substances. When once the cavity has been cleared of all these and rendered aseptic, powdered iodoform or one of the more recent antiseptic powders (euphraphen, aristol, etc.) shall be introduced in liberal quantity and allowed to remain there indefinitely. This, in brief, is the mode of treatment which I have termed the cleansing method.

In conclusion, permit me to bear further testimony to the beneficial results which are obtained from the faithful and persistent employment of this method. I believe that I do not exaggerate when I say that in a decided majority of the cases treated in this manner the results have been successful; and I base this belief not simply upon my own personal experience, but also upon that of other otologists with whom I have had an opportunity to compare notes.

FAVOURABLE RESULTS IN OBSTRUCTION OF THE TRACHEA BY DIPHTHERIAL MEMBRANE FROM THE INTRODUCTION OF CREASOTED OIL THROUGH THE TRACHEOTOMY TUBE.

BY

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The following case is of interest as an instance of recovery from a desperate condition, and it is of some importance as showing that we need not regard cases of tracheal and bronchial diphtheria as beyond the scope of active treatment even after tracheotomy has failed to relieve the obstruction. It may be of use to others in similar emergencies.

A. S., aged 2 years and 4 months, admitted on October 31st, 1897. Laryngeal stridor and dyspnoea since the middle of the night. Face dusky, lips bluish; temperature 102° ; tonsils and fauces red, but no membrane to be seen; nose free; much inspiratory recession of lower intercostal spaces. Tracheotomy was performed, low down, with instant relief; no membrane was coughed up or seen *in situ*; 4,000 units serum were injected.

November 1st. Temperature remained above 101° , pulse 160, respirations 52. Throughout the day the breathing was gradually getting worse, but no membrane was coughed up.

November 2nd. Temperature 99° in the morning, 101.8° in the evening. There was now some inspiratory recession of intercostal spaces. At 4.30 the breathing became very difficult; the tube was changed, an oiled feather passed into the trachea, and oxygen given to inhale, with much relief to the patient, whose colour was improved. Dr. Ewart, being informed of the child's dyspnoea, had prescribed creasoted oil (1 in 20) to be dropped into the trachea. Owing to an accident this was not supplied to the nurse, but olive oil was used instead, the oil being dropped from the feather used for clearing the tube. This supply of oil was kept up every half-hour from 4.30 P.M. Still, in spite of the oil, there was no effort at coughing and no membrane brought up. At 6.30 P.M. there was urgent dyspnoea, the face dark and sweating, the teeth clenched, and much inspiratory recession of lower spaces and ribs. Mr. Eames passed a silk catheter down the trachea twice through the outer tube; each time it was withdrawn covered with membrane; some coughing was set up, large quantities of membrane being expectorated through the tube. Brandy and oxygen administered. 8.30 P.M. 4,000 units antitoxin injected.

November 3rd. Had a fairly good night. At 2.30 A.M. a piece of membrane the size of a two-shilling piece was coughed up; this was the only piece coughed up since the catheterisation. At 9 A.M. the treatment by creasoted oil was begun; a large drop of the oil being introduced into the trachea through the tube every half hour. Each time this was done cough was set up, and membrane was expectorated freely.

November 4th. The temperature had dropped to normal after a good night. Three doses only of creasoted oil of two or three drops each were used during the night, with the same result. The treatment was continued during the day with much success, the membrane coming up easily; the total amount expectorated during the last two days being very large.

November 5th. Breathing easier. No membrane expectorated. At 12 noon the tube was plugged, with very little discomfort.

November 7th. Tube removed; voice returning; child much improved.

November 15th. Wound healed; child practically well. The child was treated internally with quinine, strychnine, and brandy.

REMARKS BY DR. EWART.

Recovery in this case was due to the careful way in which the treatment was carried out, and to the timely and skilful catheterisation of the trachea. I had long made it a rule to introduce twice a day carbolic oil into the nostrils as part of the toilet of diphtheria during the acute stage and during convalescence; but the idea of the systematic use of oil first occurred to me whilst writing an article on Plastic Bronchitis for the forthcoming volume of Professor Clifford Allbutt's *System of Medicine*, and it happily came to mind again at the moment I heard of the child's danger. It happened that simple olive oil was used at first instead of the creasoted oil which has been prescribed. We gained experience from this accident which, owing to Mr. Eames's successful operation, did not affect the result. The effect of the olive oil was to facilitate the removal of the membrane by the catheter, when this was used; but the olive oil did not save the child's life, as it failed to set up spontaneous cough or expectoration of membrane, and cannot therefore be credited with having done more than assist the work of the catheter. The quantity of membrane which was discharged during the next two days showed that all danger had not ceased; enough remained or was freshly formed in the air tubes to have led to further obstruction or to pneumonia. The moment, however, the creasoted oil was substituted for the olive oil, cough was set up, and large pieces of membrane were expectorated with conspicuous ease. In this respect this treatment carries out the objects of the time-honoured treatment of croup by emetics, but in a more easily regulated fashion.

The direct access to the trachea rendered the introduction of the oil a simple matter, so that it could be entrusted to a trained nurse. Whatever the results may be in future cases, we are glad to think that in this instance there was not even a suspicion of any drawback. The satisfactory effects witnessed suggest that the usefulness of the treatment may not be limited to cases of urgent danger, and perhaps not to cases in which tracheotomy has been performed, and that when tracheotomy has shown that the membrane extends below the larynx its systematic employment might be begun early.

The application of creasoted oil might safely be tried in diphtheria of the fauces, and its action could then be watched with relative facility. Whether it may be possible or expedient to use it as an intralaryngeal injection is a question for future consideration. Our experience for the present is limited to the case narrated, and we shall have to feel our way with the details of the treatment. Dropping the oil into the trachea is clearly better than the sudden injection of a quantity of it. In this way we escape the danger of adding to the obstruction by the bulk of the oil. When creasoted oil of proper strength (1 in 20 in this case) is used this danger is much less likely to arise, since the effect of the remedy is to excite cough and clear the air passages. If due caution be exercised in respect of the strength and of the quantity of the oil used, the publication of the case may lead, it is hoped, to none but satisfactory results.

SANITARY STATE OF MADEIRA.—Medical men who were influenced last year by the unfavourable reports concerning typhoid fever and defective water supply at Madeira, will hear with interest of the large annual grant which has been voted in Lisbon for the amelioration of the island. Dr. M. Grabham announces that the district of Funchal is to receive a copious supply of pure water from the high, uninhabited mountains behind it, and the town is to be drained according to modern principles. When these plans, which are stated to be in a forward state of preparation, have been carried out, Madeira will doubtless become again as popular as ever, and will attract its full share of visitors from England, especially that class of invalids likely to be benefited by its moist, equable, warm, marine climate. The construction of good roads, which is likewise contemplated, will open up the scenery of the interior of the island.

The Council of King's College, London, have received an anonymous donation of £15,000 towards the liquidation of the College debt.