

Progress of Science.

A YEAR'S EXPERIENCE IN TRACHEOTOMY.

George M. Gay, M. D., writes, in the *Boston Medical and Surgical Journal*: During the year 1883 I performed tracheotomy twenty-one times for croup. Eleven patients recovered. All but one, a fatal case, were treated in the City Hospital. The cases were not selected, every one coming under our charge being operated upon if requiring it.

Many of the patients had diphtheritic croup, a few membranous, and, occasionally, it was not easy to make an exact diagnosis. Cases presenting enlarged glands and a nasal discharge early in the disease were undoubtedly diphtheritic. On the contrary, cases beginning as an ordinary cold, with no membrane visible in the fauces, no septic symptoms, but having a severe and constant dyspnoea, were called membranous croup. It is not of the utmost importance that much time be spent in discussing the difference between the two varieties of croup, considering the fact that both are extremely dangerous to life, and that both demand essentially the same treatment. Suffice it to say, that all of the cases presented severe and continued dyspnoea, due to an acute laryngeal obstruction of from one to five days' duration.

One patient was twenty-four years (died); the age of the others varied from eleven months to nine years; a majority were four or five years old. The youngest who recovered was three.

The duration of the diseases at the time of the operation ranged from one to eight days; the dyspnoea from one to five days. As a rule, the shorter the period of obstructed respiration the more favorable the result.

No ether was used in eight cases, and only a few whiffs in the others; merely enough being given to partially control the struggling and fright. Generally, the patient had rallied from the anæsthetic before the tube was secured in its place.

Two children died of shock and septicæmia a few hours after the operation; the other fatal cases survived from two to five days. None died from hemorrhage. Death resulted from either bronchitis or blood-poisoning. Every case but one derived more or less temporary relief from opening the trachea, and, so far as I know, no life was shortened by the operation. The upper rings of the trachea were usually incised, and also the isthmus of the thyroid, if necessary. In a baby lately operated on at the age of nine months the cricoid cartilage was divided with the result of greatly facilitating the introduction of the tube.

Venous hemorrhage was quite free in many cases, but no trouble was ever experienced from blood getting into the bronchi. By inserting a ten-

culum or hook into the trachea just below the cricoid cartilage and lifting it up the windpipe is under control, and it is not necessary that the rings be exposed before they are divided. At all events I have not found it to be so in many of my later operations. Beginners, however, had better see the rings before they cut them. The tube having been secured by tape, a piece of cotton flannel spread with cosmoline is placed between the plate and the skin to prevent irritation.

After Treatment: Milk, ice-cream and beef-tea were the favorite articles of food. Nourishment was also administered by the rectum. Alcohol was never given unless the patient exhibited symptoms of marked exhaustion, when champagne was added to the diet. Several of the successful cases received no liquor during the treatment. Quinine and aromatic spirits of ammonia were given in every instance, while iron and chlorate of potash were not resorted to.

Next to nourishment I consider *steam* to be the most important part of the treatment. It is conducted from the radiator through a rubber tube, and directed upon the neck of the patient. The vapor is warm, moist, and does not condense in sufficient quantity to saturate the clothing. Atomized or medicated liquids are not used at present. Lime-water often produced a disagreeable erythema of the face, and thinking that possible it might act as an irritant to the air passages, pure steam was substituted, and so far it seems to act as favorably as did any of the sprays formerly in vogue.

In all cases the patient received steam half the time, while to the more serious it was constantly supplied. The very great benefit derived from breathing the warm vapors was demonstrated beyond a doubt in many instances. Under its use the secretion would soften, the respiration would become easier, the child would become quiet, and fall asleep. The importance of a constant and generous supply of steam cannot be over-estimated in this affection.

In the favorable cases the tube was worn from six to fifteen days; the average time being nine days and a half. I have found the most satisfactory way of getting rid of the tube to be as follows: At the end of a week, if the respiration is free, the tube is taken out quietly, and the child is let alone. No trials are made to see if he can breathe through his mouth. As the tracheal wound contracts natural breathing through the larynx is gradually restored. With one exception this plan has worked well. In the case of a little girl, after the tube had been taken out, occasional attacks of dyspnoea would come on, which were relieved by the nurse's opening the wound with the dilators, and turning on more steam. The child soon learned to call for this instrument whenever she felt an attack approaching. The use of the tube was not again resorted to, and in a few days the dyspnoea ceased and the patient recovered.