

ation from the normal. This, of course, does not apply to paralytic or even true paretic cases, in which characteristic appearances would be present, but to atony of the muscles. The speaking voice is normal. The singing voice is generally alone affected, and that only in certain tones, though weakness pervades them all. The higher tones are generally "lost in the breath," that is to say, the passage of the air through the glottis is much more audible than the note proper, although in a small proportion of the cases the upper portion of the chest register may alone be affected.

The treatment of this condition differs in every particular except one from that of the preceding condition. The exception is the attention to be paid to the gastro-intestinal system, which may be found to be an important element in a small proportion of cases. In emergency cases the voice is sometimes markedly improved by a mild Faradic current, the positive pole being applied behind the larynx below the inter-arytenoid notch, and the negative externally on each side of the thyroid cartilage. The point of the laryngeal electrode should be flattened from before backward and covered with chamois skin. For an external electrode I usually use the thumb and index finger of my left hand, the end of the battery cord being fastened to the palm. In this manner I can make the application with much more exactness over the location of the muscles I desire to influence on each side of the glottis, penetration being secured by frequently dipping my fingers in water. The crico-thyroid and crico-arytenoid are first treated by placing the fingers on each side of the space felt below the thyroid cartilage, and sliding them antero-posteriorly along the groove felt in the deep tissues, the skin which slides over the latter with the fingers being pinched when they are approximated anteriorly. To treat the thyro-arytenoid the fingers are merely moved a quarter of an inch higher (just below the lower border of the thyroid), and the same procedure gone through with. The length of the application depends entirely on the ability of the patients to stand the electrode in the larynx. It is generally well tolerated, owing to the fact that it does not enter the laryngeal cavity. Five minutes represents the usual time occupied in such cases. The electrode is introduced a few seconds, then withdrawn, then reintroduced, and so on, great care being taken to avoid touching the base of the tongue. A solution of the hydrochlorate of cocaine can be used to anaesthetize the spot upon which the electrode is to be placed, but the pernicious after-effect of this drug on the voice when the latter is to be used within a few hours renders the use of the drug undesirable.

Internally a pill composed of 1 gr. of quinia and $\frac{1}{4}$ gr. of nux vomica, administered every two hours, maintains the muscular tonicity

throughout the performance, especially when coca wine is taken between the acts, as recommended above. The curative treatment includes the electrical application three times a week, and iodide of potassium, 5 grs., gradually increased to 30, three times daily if the patient can bear it, which he will be much more likely to do if the iodide is administered in a glassful of water immediately after meals, and if three drops of Fowler's solution are given with each dose.

THE VALUE OF INTUBATION OF THE LARYNX, IN CONNECTION WITH OTHER OPERATIONS.

BY MEANS OF CATHETERS, RUBBER TUBING, AND INTUBATION TUBES, WITH METHODS AND DESCRIPTIVE CASES. A NEW SELF-CLOSING INTUBATION TUBE.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, June, 1880.

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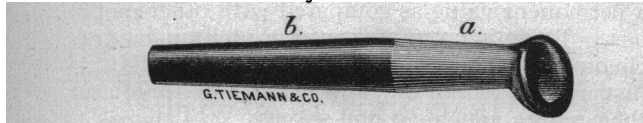
As we advance in our specialty we therefore increase in the number of operations, and there is no doubt that most of those have proved to be a lasting benefit to the world at large. I wish here to add and bring before the notice of this body several new methods showing the use and value of intubation of the larynx in connection with other operations.

My remarks upon these methods will be brief, and by way of illustration will cite a few cases upon which these operations have been performed.¹ The following are some of the operations in which intubation by the above means can be made use of: Post-pharyngeal abscess, laryngeal abscess and cysts, syphilitic adhesion of the larynx by a web, in all operations about the cavity of the mouth where hæmorrhage is present, cleft palate, in all oedemata about the larynx, excessive hæmorrhages from the tonsils, post-nasal tumors or growths, in the removal of vegetations of the vault of the pharynx, in cases where a hurried tracheotomy is necessary—called by me the combined method of tracheotomy and intubation, previously intubating with a large-size catheter and then performing tracheotomy, thereby gaining time in operating and supplying the necessary air during such an operation. This I have many times performed much to my satisfaction, and must here say that those who ever perform tracheotomy by this mode will never do it otherwise. Every one who has performed this operation knows the amount of risks that one has occasionally to contend with during the stage of passing the tracheotomy tube, etc. In some other operations where a hæmorrhage or apnoea may be present or due to causes which would require a preliminary

¹ As it seems to me that in subjects such as these it is well to confine oneself to those points about which one can speak from experience, and which one has put into practice.

tracheotomy, without interfering with the operating field.

The following are some of the cases in which I made use of intubation of the larynx: Four cases of post-pharyngeal abscess, one case of syphilitic adhesion of the larynx, three cases of combined tracheotomy and intubation, two cases of œdema of the larynx, one case of tongue swallowing during anæsthesia, etc. All these were treated with the most satisfactory results.



The Methods with Illustrative Cases.—1. The first case in which I introduced into the larynx an English catheter was a child 2 years old which I operated upon for a deep-seated post-pharyngeal metastatic abscess due to vaccination. The abscess was nearly the size of a chicken's egg, occupying nearly the entire space of the pharynx. It was one of two weeks' standing. The patient was in its last stage, and to operate without some means of keeping up respiration during the operation, which was at that time hazardous, and then taking into consideration the possibility of the pus after the incision passing into the trachea; taking it altogether, the prognosis of this case was not of the most hopeful.

Method of the Operation.—The operation was conducted in the following way: The patient was placed in the ordinary intubation position, a gag was inserted, after which a No. 16 English catheter—or use the largest size that can be introduced in such or other cases, in order to prevent fluids from passing in between the unoccupied space, it should previously be softened in warm water. This was introduced well down into the trachea and then turned the outside end towards the back of the head, thus allowing the assistant to control and guard both the gag and catheter. Immediately after the introduction of the catheter the character of the respiration becomes normal and the patient makes no more resistance or struggle during examination or operation. I waited a few minutes, after which I passed the forefinger of my left hand well down upon the abscess, followed by a laryngeal lancet, opening the same by a deep incision. After the incision the child was at once inverted, and pressure made upon the abscess with the index finger. The throat was thoroughly irrigated with a solution of Ch. Marchand's peroxide of hydrogen, $\frac{3}{4}$ iv to $\frac{3}{4}$ iv of water. This solution I always use in such conditions where pus is present; this has proved in my hands one of the best antiseptic and non-poisonous compounds, and should certainly be highly recommended. From this case I make these deductions:

1. That without catheterization of the trachea

the chances of suffocation from the pus flowing into the trachea were imminent.

2. The stenosis which was present and so alarming was immediately overcome, and during the entire operation, by previously establishing normal respiration.

3. Guarding the opening of the larynx by means of a large-size catheter.

4. Gaining of time during the operation, and all struggle for breath was thereby obviated.

The next operation that I wish to illustrate is one of syphilitic adhesions of the larynx which was cured by means of incising the adhesions and the introduction of large-size intubation tubes, thus keeping the incised edges from again adhering to each other, and also dilating the adhesions which were previously incised.

A female æt. 35 years, syphilitic, came under my care for the treatment of a severe stenosis. On laryngoscopic examination an inflammatory syphilitic adhesion was seen which existed between the cushion of the epiglottis by a tight fibrous band uniting the vocal cords along the anterior two thirds of their free border and reducing the glottic chink to the size of a goose quill. The right cord was much inflamed and the side of the larynx generally was thickened, respiration was harsh and whistling but regular during the day; there was much dyspnoea; on slight exercise, at night and during sleep loud stridulous breathing on inspiration.

The examination of the lungs elicited dulness over both apices.

The patient was placed on large doses of the iodides and cold applications to the throat. These conditions of the throat within three weeks' time were much improved. Most of the inflammation disappeared.

Now for the treatment of the cicatricial tissue. Dilatation was tried for three months by means of the O'Dwyer tubes. These were worn for two weeks at a time and then changed for larger sizes. Under this mode of treatment and dilatation the patient showed much improvement. She gained in weight. Her lungs again on physical examination in the second week showed a very marked change. After two months the tubes were discontinued and the patient was discharged. Two months later the patient came again under my notice and complained of her breathing, saying that it was not as free as a month previous. I again examined her by the laryngoscope, from which I learned that the cicatricial web again began to interfere with normal respiration, closing around as before treatment. I concluded from the condition of affairs that it would be best to operate, and thereby if possible give her permanent relief. These were the steps taken for the permanent cure of this case:

This patient was one well trained for laryngoscopic examination and who could stand any

amount of laryngeal manipulation. A good light was thrown upon the operating field, and thereby the entire condition thoroughly explored before any operative procedure was undertaken. A 20 per cent. solution of cocaine was sprayed over the pharynx, post-pharyngeal wall, soft palate and larynx, in order to produce a complete anæsthesia of the entire surrounding localities. A gag was inserted on the left side of the mouth. This instrument should be made use of in all such operative manœuvres, so that one may be able to control the opening of the mouth, and not trust to the patient. An assistant should control the head of the patient against an ordinary head rest. These are the preliminary steps that I generally pursue.

The cutting was done with Lennox Brown's laryngeal dilator with cutting blades. This instrument possesses these advantages over the Whistler cutting dilator: In passing tubes into the larynx many difficulties are encountered, and especially through a cicatricial stricture are much greater than generally stated. This instrument of Lennox Brown's possesses the advantage of being a hollow tube of Schrötter and the cutting dilator of Whistler, so that the surgeon in operating is always sure by the outward passage of air, when the hollow tube is in the larynx, is able to incise with more certainty as to what he is cutting and, moreover, in case of spasm the air passages are not entirely obstructed. A large size laryngeal mirror is necessary in order to procure a good laryngeal image. The Lennox Brown cutting dilator was introduced with ease and the cicatricial web cut through. The breathing during the introduction of this instrument was momentarily disturbed, after its complete passage normal breathing was carried on through the hollow opening in the dilator. Hæmorrhage was very slight. After the incision the instrument was withdrawn and the larynx thoroughly sprayed out. A few minutes later a large-size hard rubber intubation tube was introduced into the larynx and kept there for three days without its removal. Cold applications by means of compresses were used for forty-eight hours with irrigation of the larynx, also spraying with a 10 per cent. solution of cocaine for the relief of pain; this was continued for two days with much relief to the patient. Iodide of potash was again resorted to. Three days later the tube was removed and again replaced. An examination after the first removal of the tube showed a great improvement and healing of the wounded cicatricial web. The cicatrix was diminished, and the size of the opening made by the incision was thus kept open by the continued dilatation of the larger sized tubes, until the edges of the cicatricial tissue were well healed. The time of healing of these edges lasted seven days. The tubes should be worn for two weeks at least after their first introduction. The tube should be removed daily for

cleansing. Astringent solutions should be used in spray form for after-treatment. This patient made a complete recovery as the result of this operation. It is now two months since the tube has been permanently removed, and when I last examined the larynx I found the cicatricial web in the same state as after the incision. The patient was in excellent condition and breathing at a normal rate.

This method of treatment seems to me to be of a permanent value as compared with other methods. There is no necessity for a preliminary tracheotomy. The tedious dilatation with dilating instruments for an indefinite length of time, and then with a view of a non-success.

I do not mean to say that every case can thus be treated, but there are cases which come under our notice for treatment where such treatment by this mode I here introduce deserves a trial.

I have used these modes of operating in many such cases which are too numerous to describe here. These two cases by way of illustrating which have just above described and are sufficient to bring before you what can still be expected of intubation of the larynx in connection with other operations.

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TREATMENT OF MORPHINE HABIT.

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By the introduction of new remedies considerable change has taken place during the past three years in the management of cases of the morphine habit. My present method of treating is, briefly, this: Upon admission to the hospital the patient is introduced to his special nurse who is to be his constant companion during the succeeding six weeks, and after being made comfortable is given an initiatory bath. He is then requested to give up his instruments and morphine as the physician henceforth is to attend to the administration of the drug; he does this willingly and makes no attempt to concealment if he be in earnest about undergoing treatment—if he be not, cure were better left unattempted. Under no circumstances is the patient humiliated by *searching* the clothing and trunk, as advised by many authors—it is the keynote of dissatisfaction and discord can be the only result; in other words the subject is made to feel that confidence between patient and physician is mutual.

WITHDRAWAL.

After these preliminary steps an assurance is given the patient that he is to be made as comfortable as possible and that the pain will be reduced to the minimum. He is then left to become accustomed to his surroundings, and at the