

doctor's work without the health department contributing its services.

Some producers of antitoxin advise its administration without waiting for the bacteriologic diagnosis. This may be justifiable in laryngeal cases, but in not one case out of a hundred will the interests of the patient suffer if a culture can be made in four hours. Antitoxin is a highly organized product of unknown properties requiring the highest skill in its manufacture, and can only be produced by carefully followed rules requiring months of work and involving large expense. The failure of a single step in the long process will affect the product. This remedy is injected directly into the tissues and is absorbed by the blood. The action is so rapid that if unfavorable one patient is beyond hope before any known means can counteract the effects. These facts make it imperative that the utmost consideration should be given the subject of when and how to administer antitoxin. I have taken the serum myself and know its immediate effects are painful. I have also seen most alarming symptoms follow its administration. Hence the indiscriminate injection of antitoxin in cases of angina is dangerous, unjustifiable and unscientific.

Every city has its own problems to solve. In evolving a plan for controlling diphtheria all conditions of municipal life must be considered. Grades of diphtheria differ in New York, Paris, London and Chicago, as the environment of those cities differ. If the mortality of diphtheria in Chicago is lower than that in New York it is only fair to say that it is probably due more to the less crowded condition than to superior equipment.

Our position of health commissioner is a political one with a term of but two years. This is a short time to institute and carry out any elaborate scheme of hygienic reform. But it is long enough to set in motion plans of work whose beneficial effects will not permit them to be dropped by the next administration.

The municipal control of diphtheria then means:

1. The enforcement of those hygienic laws which will increase physiologic resistance and thus remove predisposition to the disease.
2. It must protect children from contagion by competent medical inspection in schools and public places of work.
3. It should furnish physicians convenient means for early bacteriologic diagnosis.
4. It should obtain and furnish the best possible quality of antitoxin.

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DISCUSSION.

Dr. REYNOLDS—It seems to me that the logical result of all this antitoxin and germ study is that every physician who visits families and comes in contact with them should be able to make a diagnosis in from two to four hours. It is the function of the department of health to prevent disease.

Dr. ROOT—This very important subject concerns not only ourselves as specialists, but the general practitioner as well. One point has not been touched upon, and that is the necessity of having these cultures made and the bacteriologic examinations continued after the apparent symptoms have cleared up. The difficulty is that after the case is apparently well the children are allowed to go to school and about the streets while they are perfectly capable of infecting others. In Hartford we insist that every case shall be reported at once to the health board. Test tubes are kept, on ice, in the leading drug stores. When a physician sees a suspicious case he can drive to the nearest drug store, get a test tube, make his culture and have it sent at once to the health board. A record of the case is made and kept, and is inspected by the health inspector, and before the child is allowed to go out it must be demonstrated that there are no more bacilli in the throat. When the throat is apparently well he may still infect others by expectoration, etc.

Dr. VANSANT—I do not think that any such discussion should proceed without a protest against a diagnosis of diphtheria based solely on the presence of the Klebs-Loeffler bacillus. It is not a simple thing to diagnose a case as diphtheria, and we should proceed carefully. A diagnosis based on the presence of this bacillus alone is not necessarily correct. I made a series of cultures from 100 patients last winter, and with the aid of our bacteriologic department examined the secretions in chronic nasal catarrh. I excluded every case that had any clinical signs of diphtheria. One of the first cases I sent was rhinitis. A report came back that typical Klebs-Loeffler bacilli had been found and the case must be isolated at once. The case was a true atrophic rhinitis, but every time I examined I got a beautiful culture of the bacillus. There was no sign of diphtheria whatever. From 25 to 50 per cent. of the cases of chronic nasal catarrh contain the bacillus. I protest against isolating cases simply on the bacteriologic examination. We should also have well-marked clinical signs.

Dr. JURIST—In a town not many miles from here two police surgeons made cultures from each other's throats and sent them to the city bacteriologist. They were promptly quarantined the next day, though there was no sign of sickness. When physicians depend on one point in any diagnosis they fall in error. We have also in laryngology attached too much importance to bacteriologic investigation. I believe that in 95 out of 100 cases the disease can be determined without bacteriologic investigation. Isolate your patient for a day or two and you will often see that a case can appear like diphtheria and not be diphtheria.

Dr. RANDALL—The nasal cases are not so apt to convey infection, and yet I know of many a case that has originated in this way. I know a resident who had such a condition in his nasopharynx, and he was responsible for several cases of diphtheria in the hospital and finally had a plain case of the disease himself. Cases are certainly infectious in that stage and call for recognition. The difference between faucial and nasal cases must be borne in mind.

Dr. JAKES—The Klebs-Loeffler bacillus may be in many throats without producing diphtheria. Physical resistance is what prevents children from taking diphtheria. About this time of year most children have the bacillus in their throats without producing diphtheria. In winter the conditions are more favorable for its occurrence. Great care is necessary. A person who has the bacillus in his throat may not have diphtheria, but he may come in contact with a child who is susceptible and cause the death of the child. I have known mothers who had this condition of the throat to inoculate their children and cause their death. For the protection of the physician, he should know the origin of every case of angina that comes under his care. He can then put the bacteriologic diagnosis with the clinical symptoms and know what the disease is.

REMARKS UPON THE SURGICAL TREATMENT OF MALIGNANT DISEASE OF THE LARYNX.

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While operations for the cure of malignant diseases of the larynx have generally resulted in shortening rather than lengthening the lives of patients so operated upon, the experience of the past few years in certain parts of the world has been somewhat encouraging. Indications are beginning to appear which suggest that for this class of patients there exists a not entirely unpromising future.

Within the past two years several papers have been published in which the proportion of successful operations has been unusually large, and while the actual number of patients operated upon has been too small to establish any positive conclusions, and the dates of most of the operations have been too recent to admit of a complete study of the cases themselves, there can be no question that the work recorded in them is, on the whole, worthy of careful consideration. The varieties of operation which have lately challenged atten-

tion by reason of the improvements which they have offered may be divided into three groups: 1, thyrotomy, with or without partial laryngectomy; 2, complete laryngectomy by the method adopted in Solis-Cohen's case; 3, complete laryngectomy in cases of extensive laryngeal disease with glandular involvement. Examples of all three are beginning to multiply to such an extent that it will not be long before we shall have a collection of details sufficient to afford a fairly positive knowledge of their real value, together with a fund of technical knowledge relating to the subject which can not fail to be of material aid for future guidance.

A short consideration of these methods may not be without interest. The first variety, while advocated by many surgeons here and abroad, has been studied and practiced in this country chiefly by Prof. Clinton Wagner of New York, and by Mr. H. T. Butlin and Dr. Semon in London. It consists in performing thyrotomy and removing as much of the diseased tissues as may be necessary. Mr. Butlin, in the main agreeing with many of the best surgeons of the day, has advanced the following propositions:

1. Every malignant growth of the larynx of intrinsic origin which can be dealt with should be treated by an operation in the absence of a decided indication to the contrary, and the operation should be performed with the least possible delay.

2. Every tumor of the larynx suspected to be malignant, of intrinsic origin, of limited extent and apparently within reach of free removal, justifies an exploratory thyrotomy in a suitable patient, in the absence of infiltration of the surrounding structures and of affection of the lymphatic glands.

The method of operating pursued by Butlin and Semon has been described in their published writings. It applies distinctly to cases in which the disease is absolutely confined to the interior of the larynx. Preliminary tracheotomy is done with the insertion of the tampon canula and its careful adjustment. The anterior part of the thyroid cartilage is laid bare with scalpel and raspatory, it is opened exactly in the median line, and the two sides of the larynx are held apart, preferably with two strands of strong silk inserted through the anterior parts of the lateral wings of the thyroid. After the latter has been split open, undue violence in holding the halves apart must be strictly avoided. At this stage it will generally be necessary to protect the parts from mucus and saliva by packing the lower part of the pharynx with a large septic sponge secured by a string and passed through the laryngeal wound upward. There are two recommendations upon which Semon lays special stress; 1, the surgeon should be provided with a forehead reflector and a good light, and as has already been suggested by the writer for deep operations in the pharynx, he should if possible have at hand a small two- to four-candle power electric lamp, to be used for the purpose of securing the best possible illumination of the interior of the larynx for the detection of every possible bit of diseased tissue; 2, before he begins the removal of the growth the whole side of the larynx to be operated on should have applied to it a 5 per cent. solution of cocain, for the purpose of contracting the capillaries on that side and preventing parenchymatous bleeding, which otherwise is sure to interfere with and greatly prolong the removal of the growth proper, while at the same time it may allow suspicious portions to remain behind. The importance of the

two above mentioned measures is strongly insisted upon. The field of operation having been thus prepared, the diseased soft tissues are thoroughly removed to at least half an inch from the periphery of the growth, and if necessary the underlying cartilage is scraped or even removed, the base being firmly scraped with a sharp spoon. The use of the galvano-cautery will seldom be required. Every source of bleeding having been stopped, the whole interior of the wound is dusted with pulverized iodoform, or with iodoform and boric acid in equal parts, and the tampon canula is immediately removed. The whole of the wound is then covered with cyanid or iodoform gauze.

In cases where the more extensive resection of the thyroid or even extirpation of one-half of the larynx is contemplated, the parts of cartilage to be removed should be freed from their perichondrium and from the surrounding soft parts by means of an elevator. In other respects the operation is the same, only more extensive than mere thyrotomy with removal of soft parts. It is generally not necessary to prophylactically ligate the laryngeal arteries. Where the epiglottis or the aryteno-epiglottidean folds are diseased, the best means of access to them is sub-hyoidean pharyngotomy.

For after-treatment, both Wagner and Butlin immediately remove the tampon canula, and from that time use no tracheal canula whatever, and the wound having been dressed as above described the patient is not propped up in bed, but is placed horizontally on the side corresponding to the half of the larynx operated on with one small pillow under the head. Instead of plugging the wound with gauze as formerly, Mr. Butlin dusts it at least twice daily for the first few days with the antiseptic powder by means of a powder insufflator. The application can be made to the best advantage when the patient is swallowing, as during the act of deglutition the wound in the neck is separated sufficiently to admit the end of the powder-blower, so that the powder may be thrown directly against the raw surfaces, which should be thoroughly covered by it. The external covering of cyanid or iodoform gauze should be removed as often as wet by secretion. Although nutrient enemata may be required for the first few days, the experiment may be tried on the day of the operation or soon thereafter, of allowing the patient to attempt to drink a little water while leaning with the upper part of the body well over the edge of the bed. In case of any impediment to the closure of the larynx during this act, the water will run directly out of the wound and no harm result; should the experiment succeed milk may at once be taken in the same way, and the necessity for rectal feeding avoided. The external wound gradually closes by granulations, which may have to be stimulated by applications of nitrate of silver.

Turning now to the method of operation classified as number two, we find that a distinct advance has been made in the treatment of cases requiring complete extirpation. It was first proposed and practiced by Prof. J. Solis-Cohen of Philadelphia. The patient upon whom he originally employed it in 1892, is still living and well. In this operation, as in several similar to it, the larynx was completely removed and the severed end of the trachea brought to the external edges of the cervical incision and there retained, communication between the lungs and the pharynx being thus totally and absolutely cut off. The great advantages of this plan over the usual methods are:

1. The danger to life from inspiration pneumonia is greatly lessened, owing to the shutting off of the mouth from the trachea.

2. Swallowing is accomplished with great ease and as freely as under ordinary circumstances.

3. In at least three cases thus operated upon, the power of phonation has been acquired with a voice fully as satisfactory as that produced by any artificial appliance, and without either the inconvenience and discomfort of an artificial larynx or the danger to the adjacent parts from the irritation of its presence. The mechanism by which phonation is accomplished in these extraordinary cases has not been explained. Cohen's patient is able to make his voice distinctly heard from one end to the other of the great hall of the New York Academy of Medicine.

4. The comfort of the patient is greatly increased, and the disfigurement of the other operation and the wearing of the artificial larynx largely done away with. It is entirely probable that under certain conditions, this method will prove to be the most satisfactory for complete laryngectomy of any yet proposed, and it is to be hoped that it may be given a sufficient trial to prove whether or not the cases already reported have been but the result of a happy accident rather than the first illustrations of a definite rule.

As to the third variety of operation it has often been insisted that in order to insure success, malignant disease of the larynx must be treated as early in its history as possible, and at least before involvement of the neighboring glands has taken place. Unfortunately in the history of the past early operation has not always saved life, but on the other hand several eminently successful cases have been in patients who suffered from a tolerably extensive condition of disease. The management of cases of extensive laryngeal disease, therefore, becomes a matter not only of great importance but of lively interest, especially when it is remembered that perhaps a majority of patients are not seen by the specialist or surgeon until the disease has made considerable progress, and the time most favorable for operation has passed.

Several years ago operations were attempted upon such patients with only here and there an exception to the inevitably and immediately bad result. Subsequently they were generally left to their fate. Of late, under the influence of improved methods and increasing knowledge, a hope, a small hope indeed, but worthy of all encouragement, has been aroused by the excellent work of several men. Prominent among these may be mentioned Mr. Watson Cheyne of King's College Hospital, London, whose efforts in this direction are now attracting much attention, and who in his admirable Lettsonian Lectures (*Lancet*, February 15 and 22 and March 14, 1896,) upon "The Objects and Limits of Operations for Cancer," delivered before the Medical Society of London last February, says: "As compared with cancer in the breast, the disease in the throat is in some ways more favorable for cure; in other ways less so. Primary disease of the breast is by far the more favorable of the two, for there it is fully exposed to view, and there is plenty of room for its free removal without endangering important structures. In the mouth and throat, on the other hand, the disease is close to if not involving many important parts, the space in which one has to work is very limited, any considerable margin of healthy tissue can not be obtained, and the early spread of the cancer to muscle, tends to distribute it over a considerable area.

In the throat, moreover, the disease is much less favorable for operation, because the septic elements comes into play, and thus instead of having to do with an operation in the breast where the mortality is practically nil, we have to face very considerable risk of death from septic disease. On the other hand, cancer of the mouth and throat is more favorable as regards the glandular deposits, for in the neck we have an extensive glandular area exposed to view which can be much more thoroughly dealt with than in the case of the breast. It is true that many surgeons look on the glandular trouble as a most serious part of the disease. With this I do not agree. In another respect cancer in the throat is more favorable than in the breast, namely, that in it metastatic deposits are infrequent."

As to the neighboring lymphatics, Cheyne believes that they should be removed as in cancer of the breast. It is seldom that no enlarged lymphatic glands can be felt in these cases, and usually they are of considerable size. Whether they can be felt or not, the lymphatic area should be cleaned out. Unless the lymphatic enlargement is very extensive or adherent to a variety of structures in the neck, and not merely to the sheaths of the vessels the operation will be more thoroughly done and the patient will have a better chance of recovery and cure if enlarged glands are already present.

With regard to preliminary tracheotomy, Cheyne, agreeing with many other excellent authorities, does not believe in the insertion of the tube several days prior to the performance of the main operation. Personally I do not think his ground upon this question well taken, the objection being that in three or four days after the insertion of the tube there will be a collection of septic matter around it which may get into the trachea after the performance of the main operation. Such an accident could probably be avoided by extending the time between the two operations to ten days or more. It is desirable, however, that this question, namely, when preliminary tracheotomy should be performed, should receive more careful attention than has hitherto been accorded it, as it is without doubt an important factor in the patient's welfare.

These three varieties of operation just described may be said to finally represent the most recent additions to our present resources for the surgical relief of malignant disease of the larynx.

Turning now to the statistics of these and similar operations performed upon the larynx, we find according to a recent valuable article published by Schmiegelow of Copenhagen, in *Gouguenheim's Annales* for April, 1897, that during the past six years the mortality resulting from extirpation of the larynx has been materially diminished. Thus up to 1880, according to Holmer, the mortality was 42 per cent. Tauber reports a rate of 60 per cent., following total extirpation of the larynx between 1866 and 1890. Between 1880 and 1888 Schier found that the rate had fallen to 34 per cent. Since 1890, however, the reports are much more hopeful, for the same observer finds that the rate during that period has been reduced to 22 per cent. Schmiegelow, carrying the reports up to the present time, finds that the percentage of cures since 1890 has been 13.5 per cent., and of immediate mortality 18.7 per cent.

I earnestly wish that these flattering statements as to the improved statistics of this class of operations could be accepted as accurate and reliable. Undoubt-

edly in the cases of certain individual operators, who like Hahn, Butlin, Schmiegelow and some others, have faithfully and without reserve reported all of their cases good and bad alike, we are able to gain from their reports deductions of genuine value. It is both discreditable and unfortunate, however, that many operators have failed to publish their unsuccessful cases and have only reported such as have resulted well. This, I am sorry to say, has been particularly the case in our own country. Two years ago, the writer in the course of preparing an article upon this subject, wrote to the principal surgeons of the United States asking for a statement of their results. The answers were so incomplete and unsatisfactory that he abandoned the attempt. One surgeon who had operated four times with three speedy deaths, entirely omitted to mention his failures, while the successful case was reported in full.

Time and again the operation has been attempted under unfavorable conditions and by unskilled but venturesome men, whose rashness has quickly robbed the patient of what little hope belonged to him, and who having nothing creditable to report, have avoided publicity. If the whole story were to be told it is probable that the statistics in this country would be discouragingly bad.

It can not be insisted upon too urgently that carcinomatous cases requiring laryngectomy are desperate at the best, both as to immediate and ultimate results, and that with our present limited knowledge of the subject, no amount of caution, however great, will avail in preventing a high percentage of failures. With the sources of danger so numerous, constant and subtle, it is impossible that too great foresight or experience be brought to bear against them, or that the urgency of this demand be over-stated. Doubtless the best preparation for the work on the part of the surgeon would be a thorough knowledge of operations upon the tongue, neck and lower jaw in general. In the after-care of the patient also it is not by any means enough that the watchers should be ordinarily qualified in the care of severe surgical cases. Nothing short of special fitness in the department of this particular class of cases will yield the best results.

Next, such accidents as the entrance of septic or foreign matters into the air passages must be carefully guarded against. The use of the esophageal tube when entrusted to inexperienced hands has often been the cause of disaster. This part of the management as proved by the records of failure, requires most careful handling. Another dangerous and preventable accident is the poisoning of the patient by the antiseptic dressings, among which iodoform has been the principal offender. The substitution for it of a mixture of equal parts of powdered iodoform and boric acid, or of the compound tincture of benzoin has been attended with success.

In reviewing the recent progress in the treatment of malignant disease of the larynx, and in studying the manner in which these advances have been made, it must be apparent that nearly all have been the result of long and close study of the subject by accomplished surgeons, whose opportunities for clinical study have been unusually great. The time has long passed when an unsuccessful attempt at laryngectomy by one not fitted for the work can bring anything but reproach to the operator and discredit to the operation.

I am strongly of the opinion that, for a time at least, both the welfare of the patients operated upon and

the interests of science demand that the indiscriminate performance of capital operations upon the larynx should cease. In most great centers there are individual surgeons or groups of operators who are especially well fitted both by personal qualifications and hospital facilities for the successful performance of this work, as has been proved in many cases by the records which they have already made. Let such men surround themselves with the proper assistants, let them systematize their efforts and use all the diligence in the perfection of appliances and methods and in the study of the cases under them, and keep careful and accurate record of everything pertaining to the history of their work. Then resign to them temporarily the care of as many cases of laryngeal cancer as possible. When a sufficient amount of material has been collected, we shall learn whether the radical extirpation of laryngeal epithelioma is unjustifiable, or whether, as we have the best reasons for hoping, it is likely to establish for us a reliable means of cure.

Finally, with the best results obtainable, it should not be forgotten that in this disease surgery is, and probably always will be, a forlorn hope, and that until we have discovered some better method of dealing with it, the results of operation, even under the best conditions, will fall far short of a perfect means of cure.

DISCUSSION.

Dr. COHEN—In my opinion much of the success of the case depends upon the attention given to the patient after operation. Operation is of course very important, but the best operation will fail if the patient does not receive the proper after-treatment. I am certain that a number of the cases I have seen could have been saved with proper care. The patient requires not only to have the surgeon within immediate call, but also the laryngologist. The great mistake is made when the laryngologist abandons the case to the surgeon, for the surgeon is not always familiar with the emergencies that may occur in such cases. Even if the laryngologist is not able to perform the operation, he should be in constant attendance with the surgeon until the patient is out of danger.

Dr. MACKENZIE—The surgical treatment of laryngeal cancer has resulted in failure in the past because the methods employed have not been sufficiently radical. Thyrotomy, partial and complete extirpation of the larynx have fallen far short of success simply because they have not completely removed the disease. There is but one rational treatment for cancer of the larynx. Early total extirpation of the organ together with its neighboring lymphatics and glands whether the latter be apparently diseased or not, is the only possible safeguard against local recurrence and metastasis. By no other method can we give the patient a reasonable assurance of a permanent lease of life.

The time will surely come when the conscientious surgeon will consider that he has fallen far short of his duty to his patient and himself if he does not in the treatment of cancer of the larynx, no matter how circumscribed the growth may be, remove not only the entire organ, but also the neighboring lymphatic area. Then and not until then will we have more favorable statistics and prognosis in cancer of the larynx. Then, and not until then, will the medical historian chronicle a real advance in the management of this terrible disease.

Dr. MYLES—I think the high death-rate is because the general surgeon does not know enough about the after-treatment of these cases. We have our laws as to laryngeal trouble and things germane thereto, but we should have the assistance of the general surgeon and let him do the cutting. In a case which Dr. Mackenzie and Dr. Halsted had, after the larynx was extirpated there was no recurrence at all. They decided to take out the whole larynx and found by the microscope, cancer on the opposite side which had not been evident before the operation.

Itching of Urticaria.—Distilled water 450 parts; cherry-laurel water, 50 parts; chloral hydrate, 5 parts; cocain hydrochlorate, 3 parts.—*La Provence Médicale*.