LARYNGOFISSURE FOR CARCINOMA, WITH DEMONSTRATION OF SPECIMEN.*

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Laryngofissure† should occupy a more prominent position among laryngologists in the surgery of the larynx than it does. The assumption of its proper position has been delayed by the advent of direct laryngoscopy.

Diagnosis.—Except in a very few exceptional cases specimens for microscopic examination of suspected cases of carcinoma of the larynx should not be obtained by indirect laryngoscopy. The soundness of this proposition is proven by a great many illustrations in literature, a notable one being that of the Crown Prince Frederick of Germany, where a piece was taken from a portion of the larynx, undoubtedly adjoining the carcinomatous growth, which proved to be a pachydermia laryngis. Even in the very best operative hands there is a certain inexactness in indirect laryngeal operating. This may be due to the operator or to the patient himself. The laryngeal mirror does not provide sufficient visual acuity for us to always distinguish the best place from which to excise our specimen for microscopic examination, and this might lead to the removal of a part that is not carcinomatous; we know that other conditions may coincidentally exist in the larynx with carcinoma. Then, too, it is impossible to get a large piece from the depth of the growth by indirect laryngoscopy, and this is a *sine qua non* for reliable microscopic diagnosis in cancer. The only method that competes with laryngofissure for securing diagnostic specimens is direct or suspension laryngoscopy. But

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†Note.—These remarks relate to laryngofissure in connection with carcinoma only.

suspension or direct laryngoscopy should be employed only to make a diagnosis of the suspected tumor or to confirm a diagnosis by microscopic examination, that is all. It should not be employed for removal of the mass except in the rarest cases, where the growth is very small and superficial. In the large majority of cases that have undergone antisyphilitic treatment we can make a correct diagnosis by the laryngoscope, without microscopic examination. Suspension laryngoscopy for the purpose of confirming the mirror diagnosis of a malignant tumor is often an unnecessary ordeal. It is preferable to proceed at once, in many cases, with the laryngofissure and, if necessary at the time of operation, have the diagnosis confirmed by the freezing microtome. Otherwise, we are apt to temporize and waste time. The main considerations in treatment of suspected carcinoma of the larynx are early diagnosis and removal, and I believe that a laryngofissure provides the best means of doing this in selected cases. That means carcinomas that are small, intrinsic and limited to one side of the larynx. In 1,021 operations reported for the removal of carcinoma of the larynx by indirect and direct laryngoscopy, laryngofissure, and partial and complete resection of the larynx, in recent years, laryngofissure gives by far the greatest number of recoveries which have remained cured for a year or more. My own statistics, while embracing a small series, give a little over 50 per cent of recoveries living and without recurrence for over a year, in all cases of laryngeal carcinoma removed by laryngofissure. There can be no doubt that the condition of the patient after recovery from laryngofissure is infinitely better than that of the patient after total extirpation. The total extirpation patient is in a most pitiful plight for the rest of his life, depending upon a tube for air, and as a rule is despondent, whereas the patient with laryngofissure enjoys breathing through the natural channels, has a very good voice and is little incapacitated in any way. Laryngectomy should be reserved for large, obstructing, intrinsic laryngeal carcinomas.

Therefore, I make a plea for laryngofissure as the procedure of preference in the surgical treatment of circumscribed, early cases of carcinoma of the lateral walls of the larynx. It is preferable to direct or suspension methods, in my opinion, be-

cause, as I have already said in a paper read before the American Laryngological Association, laryngofissure gives us greater liberty of movement, better visibility, is as rapid, quite as safe.

There are several matters in the technic which might prove a subject for a fruitful discussion among men who have had experience. To perform the operation itself requires no special preparation. It is an easy operation. There are no blood vessels that will give us great hemorrhage. The parts are very superficial, and the points we may discuss are, first, tamponing the larynx; second, the use of the tracheal tube, whether it should be used or not; third, the use of the actual cautery, radium or X-ray, subsequent to operation, and the closure of the laryngeal wound immediately after operation. These are very practical questions.

I have had unfortunate experiences in cases where the tracheotomy has been done at the time of operation. Practically all my deaths have occurred in patients who have had a tracheotomy performed at the time of operation. The reason for employment of the tracheal tube dates back to the days when the operation was performed under general anesthesia. Now, the whole procedure is performed under local anesthesia. That gives an enormous advantage over the old days when I had the honor of assisting Christian Fenger. The whole aspect of the operation has changed since then. There is no longer danger of blood getting down into the trachea or bronchi during the operation. The patient's tracheal reflexes enable him to expel anything that goes down. In cases where the tumor is small a preliminary tracheotomy should not be performed. All the cases I have operated on without a tube, where the larynx has been closed immediately, have recovered partly because they were small epitheliomas. The hemorrhage from these operations is insignificant; the swelling is very slight. Here is another matter: In none of these cases which recovered did I use the cautery nor did I use radium. We should use a tracheotomy tube, only in cases where the denuded area is going to be large, in the cases where we are going to remove part of the interarytenoid region, and in cases where we use radium or X-ray. Recently I have been using the actual cautery in these cases.

Should the tracheotomy tube be placed in the trachea at the time of operation? I should say no. The tracheotomy tube should be introduced at least eight days before the larynx is opened, and it is a question whether we should use in all cases of tracheotomy local anesthesia or gas. In one of the cases it was remarkable how the infiltration anesthesia blurred the anatomic landmark. It is easier to do a tracheotomy with gas, so far as the operator is concerned, than with local anesthesia, especially where we have a short neck to deal with, the median lobe of the thyroid projecting well up, where we have to divide it, or dissect the middle lobe and retract it downward, because of the edema produced by the infiltration anesthesia. I believe the best way to proceed in these cases is to first perform the tracheotomy, making the incision from the hyoid to the jugulum, inserting the tube, stitching the upper and lower portions of the wound, and then, say about eight days afterward, when you wish to go into the larynx, the wound can be very easily ripped open over the larynx under infiltration anesthesia and the rest of the operation performed. The patient is then accustomed to the tube and to the new mode of respiration. I believe this is a better procedure than to introduce the tube at the operation on the larynx.

In opening the thyroid cartilage there is very little to be said. We may use an ordinary pair of heavy scissors, a curved bistoury, or, if partially or completely ossified, a pair of bone forceps or a chain saw. I do not believe that it is always necessary to divide laterally the thyrohyoid membrane. Undoubtedly it gives quite a little more access to the interior of the larynx to do this, but there is a danger of injuring the laryngeal nerve if we cut too far laterally, and this should be avoided. Once we are in the larynx and the growth is on the cord, we should begin by immediately dissecting up the perichondrium from the interior of the larynx beneath the growth, and after this has been elevated just as we do in a septum operation, then the growth should be excised, after which the cautery is used, not on the surface of the thyroid cartilage—this should be avoided—but simply sealing up the cut surfaces of the soft parts. During the use of the cautery we should be careful to protect the oppo-

site side of the larynx by means of moist gauze. The steam may burn the opposite side. We must also be careful to tell the patient to hold his breath while we are doing this, otherwise the heated steam may be inhaled and produce bronchitis. Great care should be exercised in retracting the edge of the laryngofissure. It is very easy to lacerate the edges of the mucosa of the larynx, fracture the thyroid or break off pieces on its cut edge, and this will seriously affect the postoperative course. A strip of mucosa should be allowed to remain along the cut edges of the thyroid cartilage whenever possible.

The next point is the matter of tamponing. It is unnecessary to tampon the larynx after laryngofissure for carcinoma. In cases, if I may digress a moment, of wounds of the larynx, where portions of the thyroid have become displaced, we usually have to pack in order to keep the parts in place, and because there is almost sure to be more or less suppuration, but not so in case of carcinoma. In the old days, when we used general anesthesia, the hemorrhage was very much greater and postanesthesia vomiting was to be feared, especially during the time the patient was unconscious. Now the patient is conscious; he can expel the secretion at any time and we do not need to pack for hemorrhage. On the contrary, packing is dangerous. Felix Simon reports a case, as does Schmiegelow, where the packing became displaced below the tube, causing asphyxiation. In one case, on account of the irritation produced by the packing, the patient coughed a great deal and produced a hemorrhage, which in turn induced a pneumonia. If packing is necessary, it should not be by means of a strip of gauze packed into the larynx, but by means of the Mikulicz tampon. However, in the operation under consideration packing should be avoided.

Usually we close the larynx immediately afterward. I believe we should even in cases where the actual cautery is used, because in cases I have observed, which are not enough to draw absolute conclusions from, but in the cases I have observed, the swelling, after considerable cauterization of the larynx, was insignificant. It did not produce stenosis. The case that furnished the specimen I showed here I left open.

If radium is used in these cases, then we must leave the larynx open, but I believe a certain number of fatalities will

result from leaving the larynx open. My experience leads me to the conclusion that the dangers incurred in leaving the larynx open greatly overbalance the benefits derived from radium. Deglutition is very much more difficult and painful in cases where the larynx remains open. Nutrition can, therefore, be much earlier maintained in cases where the larynx is closed. It is not necessary in these cases to put stitches through the cartilage. Deep stitches through the soft parts attached through the perichondrium, and superficial stitches of silk or catgut, are sufficient and they hold very well. As a rule, the larynx closes very kindly. The best way of preventing infection is to close the larynx immediately.

Here we have points that are open for discussion, whether we should use the tracheotomy tube, whether at the time of operation or before, whether we should use a tampon, whether we should close the larynx immediately, whether we should use the cautery, and if so, whether we should close the larynx immediately, or whether we should use radium, in which event we must leave the larynx open.

REPORT OF THE PATHOLOGIST.

The specimen shown was from Dr. Pierce's last case of laryngofissure. The patient was a man in the late fifties, who in July was treated for laryngitis because of hoarseness. The diagnosis was not made; the hoarseness disappeared, but in October, 1919, it recurred without any apparent cause. At that time a diagnosis by the indirect method was easily made of carcinoma of the left vocal cord. The growth measured about one inch or less in length and about one-half inch in width, and produced a tumor that limited the motion of the cord; it was hard, immovable and surrounded by a zone of hyperemia. The man should have recovered. Laryngofissure was performed, the growth excised, the base cauterized by the actual cautery and the patient was in the usual condition of these cases for about two days, when he had a chill and died of pneumonia. The demise, he thought, could be attributed to improper after-treatment.

Postmortem revealed a completely collapsed right lung, which they had thus far been unable to account for. There

was no connection between the tracheal wound and the pleural cavity. Saline solution had been injected under the mammæ, but no perforation in the chest wall could be found. Such a case was deplorable; the wound looked quite healthy. Below the tracheal opening was an area of necrosis caused by pressure of the tracheal tube.