

FAVORABLE EFFECT OF TRYPSIN IN A CASE OF LARYNGEAL EPITHELIOMA; EXHIBITION OF CASE.*

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James O'Brien, white male, age 59. Personal history excellent up to December, 1905, when he became very hoarse, which condition persisted during the rest of the winter and into the spring of 1906; he attributed it to a cold. On May 26, 1906, patient presented himself to me for examination. Laryngoscope disclosed a growth in the anterior commissure of the larynx. Its point of origin was subglottic and to the right side of the median line. It was firm and pale in appearance and in size approximated an averaged sized pecan. There was a shadow of doubt as to its neoplastic nature, and even with a negative history of syphilis, he was put on the iodide of potash, 50 drops three times a day and protoiodide of mercury one-quarter grain, for a period of four weeks without any perceptible impression on the growth. He consulted another physician and during June and July local treatment in the form of spraying was resorted to. He returned to me about August 4th, 1906. The growth seemed to have increased and, in fact, protruded into the glottis anteriorly. Malignancy was suspected and thyrotomy advised.

On August 15, 1906, at the Eye, Ear, Nose and Throat Hospital, I opened the larynx by an external operation and found a greater extension of the growth than was at first revealed by the laryngoscope. The anterior third of the right true and false vocal cords were involved. The growth seemed to arise from the right ala of the thyroid cartilage, near the median line along the anterior commissure. These involved structures were excised and thorough curettage practiced at the point of origin over the cartilage. While I regarded the case as one of the intrinsic variety, that is, in which the neoplasm is limited entirely to the interior of the larynx, its situation so near the median line made me fear recurrence on the opposite side. This actually occurred and by the middle of September, 1906, a month after the operation, the growth presented on the left side and progressed rapidly.

A specimen of this growth, obtained at the time of the thyrotomy, was examined microscopically by Dr. John J. Archinard, who re-

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portend it to be epithelioma, polyhedral in cellular arrangement. While I was seriously thinking of performing a total laryngectomy, I hit upon the idea of giving trypsin a trial. Before initiating this treatment, Drs. Gordon King, A. B. Gaudet, DePoorter and E. S. Keitz, severally, made laryngoscopic examinations. This was done to secure separate, corroborative and impartial evidence in noting the progress of the case. The first injection of trypsin (Fairchild's) was made October 27, 1906, a whole ampoule being used. A whole ampoule, or 20 minims, was used at each injection during the treatment. After the thirty-seventh injection, trypsin was discontinued and Holadin (extract of pancreas) given in capsules, 3 grs. each t. i. d. After a few days this was increased to 4 and 5 capsules a day. Holadin was thus given for 29 days. On January 21, I returned to the trypsin, giving 11 injections during that month. On February 1, I discontinued trypsin and returned to Holadin, giving the same dosage. February 18, trypsin injection was resumed, 12 injections being given from this date to March 4, when Holadin was again taken, to March 21.

It will be noted that I alternated in the use of trypsin and Holadin, the latter being given to reinforce the action of trypsin.

In all, to date, he has received 55 ampoules, or 1100 minims, of trypsin; 290 capsules, or 890 grs. of Holadin.

The injections were given hypodermically, first in one arm and then in the other, and so on exclusively. No severe systemic reactions were observed which could be directly attributed to the trypsin. During the first fifteen days of the treatment there were temperature variations ranging from 99° to 99.4-5°. Locally, the site of the injections sometimes showed some inflammatory reactions, without any suppuration. The injections were usually followed by burning sensations, more or less severe in character, but evanescent in duration.

Now, as to the changes in the growth: On the 12th of November, 1906, 16 days after the first injection, the growth appeared pale and harder, and had distinctly diminished one-half in size. After this observation, with the exception of marked pallor, no further change appeared in the growth until December 7, 1906 (41 days after initial injection), when the laryngoscope showed it to have still further diminished, as it no longer protruded into the glottis, but remained sub-glottic. These alterations continued until about January 21, when the laryngoscope gave the grateful information that the tumor

was no longer visible. This observation was confirmed by the visiting staff of the hospital.

It is now over two months without a sign of recurrence having set in. The remaining laryngeal structures appear normal. The patient naturally possesses a very husky voice, the result of a complete operative removal of the right vocal cord. His general condition is excellent.

Drs. Gordon King, A. B. Gaudet, DePoorter and E. S. Keitz re-examined the larynx March 22 and all concur with me that the tumor has totally disappeared.

The case presents some very interesting features: The situation of the growth in an accessible region brought it within a splendid field for frequent and exact observations. Its limitation to the inner structures of the larynx, without involvement of the related lymphatic glands, undoubtedly contributed to the favorable results. A thyrotomy disclosed the extent and malignant nature of the growth. Its rapid recurrence, the positive microscopic findings by Dr. John J. Archinard, and the laryngoscopic examinations of several competent witnesses, insures a correct diagnosis and safeguards the observed results. The absence of severe systemic reaction is worthy of note. It was the absence of these untoward effects, which Beard attributes to the toxin absorption, when the cancer cells are broken up by the trypsin, which made me desist from the use of the amylopsin preparations. We had best consider this as only an apparent cure, further extension of time being required to confirm the brilliant clinical results thus far obtained. The case is reported on its own intrinsic merits. It certainly encourages the trial of trypsin in selected cases. In these pioneer medical applications, we can only reach definite conclusions by the accumulation of personal experiences and mine may be an incentive to others.

N. B.: I will report further on this case, be the results favorable or otherwise.

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