A CASE OF STENOSIS OF THE LARYNX FOLLOWING FRACTURES; OPERATION; RECOVERY.*

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Fracture of the larynx is such a rare accident and so often quickly fatal that cases of stenosis following such injury must be very few. For this reason it is hoped that these notes of a case, although showing no especially remarkable conditions, may be of interest. As so little is said of the later results of fracture of the larynx in works on laryngology and general surgery, and as the writer, in a somewhat hasty review of the later literature has been unable to find any similar case recorded, no conclusions as to the frequency of such conditions or the results of operative measures for their relief can be drawn.

The patient, W. C. F., a boy of sixteen years, on May 6, 1899, while riding his bicycle ran into the tail-board of a wagon, striking the neck over the thyroid cartilage, and sustaining a lacerated wound beneath the chin. He went to a nearby hospital where three stitches were put in the chin cut. He was then allowed to go home. The voice was lost immediately after the accident, and he had cough with bloody expectoration, but no dyspnoea. He had also inability to swallow, the food and fluids regurgitating. Pain was slight. The cough and bloody expectoration lasted three days. When he became able to swallow, food would enter the larynx causing paroxysms of coughing.

About six weeks after the accident the patient began to have difficulty in breathing, which increased up to July 14th, when he was taken to Dr. John A. Hearst, of Germantown, who, on the same day, brought him to me.

The condition as noted at the time was as follows:

The patient is pale and anxious-looking; skin bathed in sweat, all mucous membranes pale, pulse weak and rapid, breathing labored and stertorous, the slightest exertion producing increased dyspnoea. The voice is reduced to a hoarse whisper. Examination: Externally some flattening of the thyroid angle, and a recent scar beneath the chin. Laryngoscopy shows: Adhesion between the ventricular bands to within a short distance of their posterior extremities, leaving

* Paper read at the Twenty-third Annual Congress of the American Laryngological Association, New Haven, Conn., May 27, 1901.

a small opening posteriorly. The supra-arytenoids are drawn together and inwards. The vocal cords cannot be seen.

It was supposed from this examination that the adhesion was the whole cause of the difficulty, and accordingly, under cocaine, the adhesion between the ventricular bands was cut. About one-half was found to be membranous, but anterior to that the knife encountered a mass of dense tissue filling the anterior part of the larynx. The breathing was only slightly relieved. A few days later an intubation tube was introduced, the largest size of O'Dwyer's set. This tube was kept in the larynx until August 24th, when a larger hard-rubber tube was introduced. This tube was kept in until September 5th, but during this time was frequently expelled. On the last date a still larger metal tube was introduced, which proved more satisfactory. It was kept in until October 10th.

But after all this time it was found that no real improvement had been made, as the dyspnoea returned as soon as the tube was removed. It was decided, therefore, to do something more radical. The boy was admitted to the Polyclinic Hospital and a preliminary tracheotomy was done on October 10th. A week later he was sent home wearing the tracheal tube. On the fifth of November, the patient again having entered the hospital, the operation of laryngofissure was done. The patient being etherized an incision was made over the larynx from the hyoid bone to below the cricoid cartilage. The thyroid cartilage was incised in the median line, but the mucous membrane was divided from within, the knife entering below the vocal cords, great care being taken to make the division accurately between them. When the wings of the thyroid were separated it was found that from the thyroid notch to below the vocal cords the cartilage was about a quarter of an inch thick, the thickened portion extending backward about a third of an inch, pushing the ventricular bands upward and the anterior commissure of the vocal cords backward. By the release of the tissues in front the arytenoids became movable. The redundant cartilage was cut away from the wall of the larynx and then shelled out without injury to the soft parts within. In closing the thyroid a catgut stitch was passed through the cartilage and through the ends of the vocal cords and tied. The skin wound was sutured. On the day after that of the operation the voice and laryngeal breathing were good, but later the voice was partially lost and the breathing became less free, on account of the swelling. The patient was allowed to go home on the 13th, still wearing the tracheal tube, but kept under observation. After healing of the parts the vocal cords could be seen to move freely. The swelling of the membrane did not entirely subside for some time, so that the tracheal tube was retained, although it was worn corked part of the time. Later, however, after the tube had been kept corked continuously for about two weeks, it was removed and the tracheal opening allowed to heal. At present the voice is clear and strong and the breathing perfectly free, the boy being able to work and otherwise do as he pleases.

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