A case of sarcoma of the thyroid gland / by J. Solis-Cohen.

Reprinted from the New York Medical Journal for August 10, 1889.

A CASE OF

SARCOMA OF THE THYREOID GLAND.

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Pressure on the Right Sympathetic Nerve; Unilateral Tonic Spasm of Laryngeal Muscles; Intermittent Clonic Spasm of Opposite Side; Compression Stenosis; Tracheotomy; Hæmorrhage from the Gland Twenty Months later; Pressure upon the Left Sympathetic Nerve; the Functions of the Compressed Pneumogastrics aroused by Irritation of the Trachea; Death from Disturbance in the Functions of the Two Pneumogastrics.

X. Y. Z., of Wyoming Territory, a stock raiser, aged about forty-five years, applied to me July 18, 1887, at the instruction of his physicians, with a swollen neck, dyspnœa, right-sided ptosis and contracted iris, abnormal warmth of the same side of the face, and with frequent right-sided perspirations of both neck and face. His clinical history was as follows: He was reared in a limestone district, and had always led an active outdoor life. His mother had had a goître, which he thinks was the cause of her death. A brother and sister have disease of the throat, which he thinks is due to swellings in the neck.

Somewhere about 1871–'72 he began to notice that in running he got out of breath much sooner than any of his companions, and that his neck was getting thicker and thicker, so that within from five to six years it increased fully two inches in circumference. His general health continued good. In 1874 he suffered pain for the first time. This pain was a neuralgia of the right eye, which had been more or less continuous since, and at times excruciating. In 1881 he had erysipelas of the right side of the face, and about one month after recovery therefrom his right upper eyelid drooped and the ptosis had been continuous. In 1885 he noted that the right side of his face was hot, and this heat had been continuous since. This heat had been attended by frequent perspirations of the right side of the face and neck, sometimes several times a day.

The patient was a sturdy man of medium height, with an irregular,

dense, nodulated tumor of the thyreoid gland, larger on the right side, with several enlarged cervical glands to the exterior of the tumor, and with considerable collateral effusion into the surrounding connective tissue. This effusion he stated was much less since he had left the high altitude of Colorado. He had considerable continuous dyspnœa, and had had a few suffocative spasms. The outline of the lower portion of the larynx and of the trachea could not be defined. He had contraction of the right pupil, ptosis of the right upper eyelid, and redness and heat of the right side of the face, with frequent perspiration of the same territory. The right vocal band was immobile in the median line (Fig. 1), and the movements of the left band were feeble, but sufficient for respiratory and phonatory purposes. The diagnosis made was that of malignant tumor of the thyreoid gland with stricture of the trachea by compression. The ptosis, contraction of the pupil, heat of the face, and perspiration I attributed to the results of pressure upon the sympathetic nerve; and the spastic contraction of the vocal band in the middle line to the result of pressure or irritation upon the recurrent laryngeal nerve.

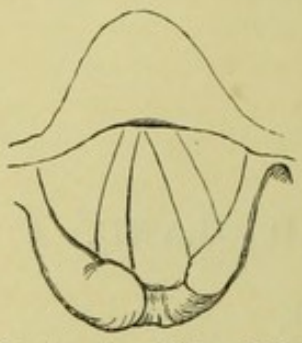

Fig. 1. — Immobility of the right vocal band in the median line.

A tentative treatment with arsenic internally and with inunctions of diluted red iodide of mercury ointment over the mass soon produced improvement in breathing and marked diminution in the bulk of the tumor, especially in the nodules at its periphery.

On August 1st I noted for the first time clonic spasms of the left vocal band, rendering the slit for breathing very narrow, but without producing as much disturbance of breathing as I had noted in similar conditions. I attributed this spasm to reflex irritation from traction on the right pneumogastric by the contraction of the mass, rather than to any direct implication of the recurrent nerve of the left side. The patient reported that he had nearly choked the night before, apparently from something which he had swallowed; but I attributed this to spasm. I deemed it most prudent to send him at once to a hospital, where I performed a prophylactic tracheotomy without anæsthesia a few hours later.

On the right side of the middle line, the skin, the intermediate tissues, the thyreoid gland, and the wall of the trachea were all one continuous mass. The trachea was away over to the left side of the neck, and was bent upon itself in its descent behind the sternum. The incision had to be made directly through the enlarged isthmus of the gland. This structure was so calcified posteriorly as to necessitate the use of the curette to scrape a way through to the trachea. After the trachea had been opened a terrific hæmorrhage took place from a portion of the tumor which had penetrated the left side of the trachea. This hæmorrhage was so sudden and so profuse that, had the patient been unconscious, he would in all

probability have perished through inability to obey instructions necessary —to place his neck in a favorable position and to cough out the blood as it flooded the air-passage. On account of the bend in the trachea, it was found impossible to introduce the cannula with the aid of the ordinary pilot conductors. Trousseau's dilator and Golding-Bird's dilator both failed; but with the three-valved dilator of Laborde, fortunately at hand, it was found practicable to keep the opening patent and to push the impeding swelling to one side, so as to admit of the introduction of the tube. The patient professed to have experienced no pain whatever during the operation, pain having probably been deadened by the attending excitement. The condition of the parts was such as to justify the inference that the cervical vessels were involved in the growth, thus precluding attempts at extirpation of the mass in the future.

The neuralgia of the right eye ceased with the operation and did not return, and the heat and perspiration of the face diminished considerably. The ptosis and contraction of pupil remained uninfluenced.

Before the wound was dressed, the exposed portion of the diseased gland was dusted with potassium-chlorate powder. This produced considerable disintegration of a portion of the mass which discharged through the external wound, and the size of the tumor diminished to such an extent that, at the end of two weeks, the length of the tube had to be lessened by nearly half an inch, and the tracheal opening had receded a little toward the middle line of the neck.

I kept the patient under observation for about six weeks, during which time he progressed very satisfactorily in every way, except that the clonic spasm of the left vocal band soon became tonic, with permanent occlusion of the glottis to a very narrow slit totally insufficient for respiration (Fig. 2). It appeared in this instance, as I have noticed in similar ones, that as soon as the artificial opening in the trachea insured access of air to the lungs in sufficient quantity, the forced contractions of the dilating muscles of the glottis, in the struggles for breath, subsided, and the spasm became permanent and unopposed. I considered the condition to be spasm of the laryngeal muscles, rather than paralysis of the posterior crico-arytenoids, because of the tense condition of the edges of the vocal bands and the backward position of the arytenoid cartilages—physical conditions which require active contraction of portions of the posterior crico-arytenoid muscles. The voice was excellent as to modulation, but weak in intensity, reedy in tone, and produced only with considerable expiratory effort.

FIG. 2.

About one month after the tracheotomy the patient complained of regurgitation of undigested food about three hours after the mid-day and evening meals. Whether this was due to pressure of the tumor upon the œsophagus, or to the presence of a diverticulum, remained undetermined, as the condition soon subsided and did not recur.

The patient returned to his home with his tumor diminished to fully

one half of the bulk it had acquired previous to the operation. The trachea had not receded from its position somewhat to the left of the middle line. The contracture of the glottis had become permanent and apparently complete, so that there was practically no room for respiration through it.

Several months after his return to Wyoming Territory I received a letter from his physician, under date of February 15, 1888, in reply to a letter of inquiry, that "the patient was doing nicely, and coughed but very little, the enlargements on the neck having reduced considerably in size and being quite soft. The right pupil remained slightly contracted, and he suffered from occasional attacks of facial neuralgia. He was in good spirits. His weight was one hundred and forty-five pounds, a gain of twelve pounds since he had left Philadelphia. His appetite was fair. He underwent active exercise without much difficulty. He slept well, and, in short, was doing nicely—much better than he had dared to anticipate."

About one year later, February 2, 1889, the patient returned to me to learn whether anything could be done to disembarrass him of his tube, the presence of which, interfering with his convenience, was the only thing he complained of. He felt perfectly well and vigorous. His neuralgias and other pains had almost ceased. The ptosis and contracture of the iris were as formerly. The tumor had enlarged somewhat. The larynx and trachea were fully an inch to the left of the middle line. The glottis was oblique, from right to left, and practically air-tight, the vocal bands being in tense apposition (Fig. 3), and remaining quiescent on the strongest efforts at inspiration.

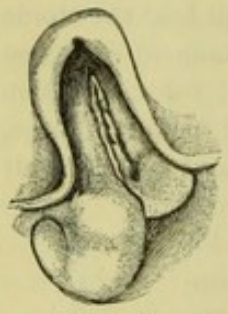

Fig. 3.

The larynx showed no indication of structural disease. The voice was good and well modulated. While no encouragement could be given as to any hope of dispensing with the tube, I thought something might be done constitutionally to reduce the bulk of the tumor, and therefore put the patient on a course of Zittmann's decoction of sarsaparilla, under the influence of which the tumor diminished considerably in size in about two weeks, especially as regarded some enlarged lymphatic glands on the right side and just above the clavicle.

Some bloody oozing from the top of the wound was now noted on changing the cannula, but I could not determine its source. It did not occur every day, and did not seem to be due to any erosion of the tissues. Despite my desire that the patient should remain with me, he insisted on returning home to shear his sheep, shipping himself a quantity of Zittmann's decoction, and carrying the formula for its manufacture with him, so that its use could be continued under the supervising sanction of his own physician.

Some three weeks after his departure I received a telegram that he

was on his way to Philadelphia, his throat bleeding badly. Arrangements were made for his instant admission to Jefferson Medical College Hospital on his arrival. He arrived March 22d, looking well, but pale. The wound was not bleeding. He told me that the oozing of blood at changes of the cannula had gradually become more copious, and that, after a serious hæmorrhage, his physician had thoroughly cauterized the track of the wound with nitrate of silver, and had started him off to Philadelphia with strict injunctions not to remove the cannula under any circumstances until he had reached me—a most judicious procedure and advice, as the sequel proved, all oozing having ceased for two days. I allowed him to remain a day without disturbing the tube. On the next day, in the presence of the late Professor S. W. Gross, whose co-operation I had requested in anticipation of trouble, I removed the tube. Blood poured out from the fistula as from a little pitcher. After a moment of consultation, we cut down upon the parts without anæsthesia, exposing them freely, but we could find no bleeding vessels. The hæmorrhage was parenchymatous from the left side of the body of the gland, which formed part of the fistula. We then cauterized the parts freely with the thermo-cautery, which restrained the hæmorrhage in great measure, but not wholly. Then the cannula was replaced, after having been wrapped in a tampon of gauze, into which a considerable quantity of Monsel's salt had been rubbed. This controlled the hæmorrhage satisfactorily, and the cannula was not removed until the fourth day. There was no further hæmorrhage. There was considerable dyspnœa after these procedures, and the parts became somewhat swollen. I noted contraction of the left pupil. This and the dyspnœa indicated an additional pressure on the left sympathetic and pressure upon the pneumogastrics. The dyspnœa would come on suddenly, there would be an arrest of respiration, and then the face would become pale and then livid, consciousness becoming benumbed and occasionally abolished. Sometimes this condition would be preceded by spasmodic, irregular, diaphragmatic respiration. Any irritation of the mucous membrane of the trachea would relieve the dyspnœa, redden the face, and arouse the patient's consciousness. The dying functions of the nerves were aroused the most effectually by passing down a loop of wire —in fact, the wire of the brush used for scrubbing the cannula. This had been first used for the purpose of drawing out any clotted blood which might have been occluding the trachea. Relief by its introduction was so marked that the patient begged for its almost continuous presence in the trachea. He could recognize the spot in the posterior wall at which the loop of wire would be most effective, and would grasp the physician's hand to prevent its being moved therefrom. When it was withdrawn from time to time, the phenomena of arrest in respiration would supervene. Inhalations of oxygen gave but momentary relief to the dyspnœa. For three or four days there was little sleep, and that fitful and irregular, respiration being maintained chiefly by the presence of the foreign substance in the trachea, and the patient sank

from exhaustion on the evening of the fourth day. A promised autopsy was prevented by the interference of relatives after they had arranged to permit it.

The marked feature in this case was the rousing of the pneumogastrics by titillation of the tracheal mucous membrane and the continuous presence of a foreign body—a condition which I had never observed, and of another record of which I have no knowledge.