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BILATERAL PARALYSIS
OF THE POSTERIOR
CRICOARYTENOID
MUSCLES OF THE
LARYNX, WITH
REPORT OF A CASE

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sicians and Surgeons; Oculist and
Aurist to the Cleveland General,
St. Alexis and City
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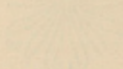



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BILATERAL PARALYSIS OF THE POSTERIOR CRICO-ARYTENOID MUSCLES OF THE LARYNX, WITH REPORT OF A CASE

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Although the literature of bilateral paralysis of the adductors of the larynx is more extensive than that of any other laryngeal neurosis, the number of cases reported is small. Indeed it is a rare disease. The case I wish to report is the only one I have ever seen. A cursory examination of the literature at my command leads me to think that not more than fifty cases have been reported. Cases must have occurred before laryngoscopic days, but were never recognized until comparatively recent times.

I was called in consultation with Dr. J. Perrier on the evening of November 7, 1895, to see Mr. A. J.———, aged 42 years; superintendent of a large manufacturing establishment. Married; no children. Always enjoyed good health with the exception of the ataxia, and no specific history, although he has led a somewhat irregular life and during his youth had probably had sufficient opportunity to contract specific disease. Mr. D. has been under the care of Dr. Perrier for several years for posterior spinal sclerosis. Has complete absence of knee-jerk; is unable to stand with his eyes closed; obliged to walk with a cane, and has severe lightning pains in the legs; a feeling of a tight band around the abdomen, and typical Argyll-Robertson pupil; no atrophy of the optic discs. During the past year Mr. D. has suffered repeated attacks of dyspnea, usually coming on suddenly after some unusual expiratory effort, either in sneezing, coughing, laughing, hiccough or shouting. At first the attacks were rather infrequent and were not so severe, but during the last two or three months they have

been occurring almost daily, and sometimes two or three times a day.

During the attack there seemed to be no obstruction to expiration, but the most violent efforts at inspiration were made, the eyes becoming fixed, the lips and face purple. Normal respiration was only restored upon his fellow-workmen placing him upon the ground, rolling him over a barrel "walking all over him" to quote his own words. These attempts at artificial respiration were usually successful in a few minutes, sometimes requiring half an hour, after which he would return to work as though nothing had happened. His speaking or singing voice was not affected.

A laryngoscopic examination showed the vocal cords, when at rest, to be slightly separated; it would seem scarcely enough to permit free respiration. During phonation they closed normally, but during respiration they did not separate widely so as to form a triangle as they do in health.

A diagnosis of paralysis of the posterior arytenocricoid muscle was made, and it was suggested that he go to the hospital and have a tracheotomy performed as soon as possible.

He was admitted to the Cleveland General Hospital on the next day, and on the morning of November 9, an attempt was made to administer a general anesthetic, but resulted in an immediate interruption of respiration, so that the general anesthetic was discontinued and tracheotomy performed under cocain anesthesia. There was no special difficulty met with in the operation, and the patient made an uninterrupted recovery, and immediately returned to his occupation, which he has followed up to the present time with scarcely the loss of a day.

He wears the tracheotomy tube constantly, with a cork in it, tied to a string. Whenever one of these suffocative attacks comes on he pulls out the cork and normal respiration is immediately restored, he then replaces the cork and soon goes on about his work as usual. His wife tells me that

these attacks occasionally come on in the night, when he pulls out the cork and replaces it without waking. The ataxia has apparently remained stationary—no better, no worse. A few weeks ago he secured a life insurance policy for \$2,000, in an industrial life insurance company.

During the first year after the operation he had some difficulty in securing a satisfactory tracheotomy tube; they would break and get out of repair, and it became necessary to have a new one at short intervals, and they were also hard to keep clean, and from their irritating properties would frequently cause excessive granulations to spring up around the tube; so that we replaced the metal tube by a soft-rubber one, a sample of which I present to the Society. I am indebted to my colleague, Dr. George W. Crile, for the suggestion as to using soft-rubber tubes instead of those of hard rubber, or of metal as hitherto. I have never yet met a case in which they have not given better satisfaction to the patient as well as myself, and I believe that they should come into more general use than the older style tubes which have been in use since time immemorial.

As to the pathology of these cases there has been considerable diversity of opinion, some authors maintaining that the disease was a local one, probably due to an injury of the posterior cricoarytenoid muscles from swallowing fish-bones, artificial teeth or other hard substances. Others have reported cases due to lesions in the course of the recurrent laryngeal nerves, such as aneurism and tumor. The more commonly accepted explanation of this exceedingly interesting and curious malady, is that of a morbid condition of the nerve-centers.

It is probable that a more careful postmortem examination of tabetic patients will demonstrate that the opening of the glottis is presided over by an independent ganglionic center in the upper portion of the medulla, and degenerative changes of this center like those of the posterior columns

of the cords, or the optic nerves, will be recognized as the pathologic lesion in the vast majority of these cases.

I am quite willing to concede in view of the clinical evidence already accumulated that there are other etiologic factors which must not be overlooked in these cases, such as pressure on the recurrent laryngeal nerves, hysteria and traumatism of the posterior cricoarytenoid muscles.

DISCUSSION

Dr. Kinsman, Columbus: This case has three features which should be noticed.

First, the patient is tabetic. Second, the paralysis. Third, the paroxysms of suffocation.

Tabes and paralysis are not unusual, but, so far as my experience goes, laryngeal crises are quite uncommon.

Crisis of the stomach, bladder or genitals, as well as crises of the larynx are characteristic symptoms of tabes. Charcot and his school have reported many such cases. The distress in the case under consideration is not due to the paralysis, but to an irritation which has its origin in the sensory nerves.

Paralysis is a continuous symptom in this case, the suffocative attacks come at intervals.

This is a very good illustration of laryngeal crises in tabes.

If I were to name the case I would say it was paralysis of the vocal cords with tabetic laryngeal crises.

Dr. P. J. Kline, Portsmouth: As my friend, Dr. Kinsman, has remarked, there are some points in the case reported by Dr. Baker, that I do not understand, and I do not know that I should have taken time to try to understand them. The most interesting thing to his patient was to get some wind. When his wind was cut off, the matter of living became quite a vital point with him. What interested me a great deal in his paper was the manner in which this relief was given him, since he had to wear a tube permanently. I met, sometime ago, a patient under somewhat the same condition. I found an adult with a tracheotomy tube in his throat. It happened to be a double one, and I removed part

of it at first and soon got the man resuscitated. He continued to wear it a number of years after I visited him that night. I do not believe he wore any cork in the tube, for he needed about all the air he could get. When he wanted to talk, he would place his finger over the tube, for you know our conversation is carried on with the expired air. These cases, that are obliged to wear metallic tubes, are liable to have some difficulty in the region of the tube, due to its pressure and its constant presence on the inside of the trachea against the soft membrane there. I think the tube suggested by the Doctor is well worthy of consideration. I do not know what finally became of my patient.

Dr. A. R. Baker, Cleveland, in closing: I might say there has been considerable discussion with regard to these cases. Some German authors have insisted, and do still insist, I believe, that it is a spasmodic difficulty and not a paralytic one. But anyone who has examined a case and watched it as I have this one, two years and a half, would certainly entertain a different opinion. I suppose I have examined him with the laryngoscope fifty or more times, and I have never seen the vocal cords separate more than a quarter of an inch. You know the vocal cords naturally open up three-quarters of an inch, but these are parallel and nearly immovable in that position. He never has this difficulty of respiration unless he does something that gives extra effort to the chest, such as laughing, hiccoughing or coughing. He is not relieved until he pulls out the cork, and then is relieved instantly. I think the anatomic construction of the larynx explains this. You can take the larynx, bring the cords together and it will hold water as tight as the aortic valves. Ordinarily they are separated slightly so the patient breathes along without any trouble, but when the amount of air is slightly reduced below, then they are closed up and are fixed in that position. These patients die in these attacks. When one has seen a patient at one of these times, he will be surprised that they live as long as they do. They will wear these tracheotomy tubes a long time. Doctor Cohen, of Philadelphia, I believe, has reported a case where a man has worn a tube 24 years, and a number of cases have worn them ten or twelve years after the tube was inserted.

