ABSCESS OF THE LARYNX

IN

YOUNG CHILDREN.

BY

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(REPRINTED FROM THE PHILADELPHIA MEDICAL TIMES.)

PHILADELPHIA:
J. B. LIPPINCOTT & CO.
1873.

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THE term abscess of the larynx is used here, not because the writer believes it to be entirely appropriate to the condition which it is proposed to describe, but simply for the want of a better name. The disease to which it is applied is a rare one, and, so far as the writer is aware, the peculiar train of symptoms accompanying it have never been described, unless, indeed, it has been mistaken for retro-pharyngeal abscess. Two cases have come under my notice, one of which terminated in recovery, the other in death. Both occurred in the wards of the Philadelphia Hospital.

Case I.—John I., aged 4½ months, a negro, well nourished, and wet-nursed by his mother, who is a healthy woman. On my visit to the ward on Tuesday morning, she called attention to the child, stating that he had been irritable and cross for two or three days. He had not nursed well, though she did not observe any difficulty in swallowing. During the preceding day he had suffered from difficulty in breathing, with noisy inspiration, and total inability to swallow.

At the time of the examination he was lying upon his mother's lap, with his head thrown back. The muscles of the back of the neck were rigid. His eyes were prominent. Respiration was exceedingly laborious, and was attended with vigorous movements of the alæ nasi. Inspiration was long, difficult, and stridulous. During inspiration the base of the thorax was sur-

rounded by a transverse constriction. This disappeared during expiration, which was easy and noiseless. The voice was almost whispering, and his cry almost suppressed. The dyspnœa was so great as to prevent any attempt at crying or moving. His whole object was to breathe. He had no cough. The larynx was thrust forward so as to form a decided tumor in the neck. The anterior margin of the thyroid cartilage was sharply defined. There was some swelling upon either side of the larynx, at the posterior margin of the thyroid cartilage. It did not fluctuate. The examination gave rise to pain and uneasiness, but did not increase the dyspnœa. The boy was totally unable to nurse or to swallow either fluids or soft solids.

The chest was resonant on percussion. No râles could be heard in any part of it. The respiratory murmur was scarcely audible.

His tongue was furred, and the mouth filled with mucus. A careful inspection of the pharynx revealed no disease, and an examination with the finger showed that there was not a retro-pharyngeal abscess. The epiglottis and parts around were examined with the finger and did not appear to be œdematous. This greatly increased the dyspnœa, and nearly cost the child his life.

The patient was carefully watched, with directions not to allow him to die without the operation of tracheotomy having been performed. Warm poultices were applied to the throat to favor suppuration, under the impression that there was an abscess behind the larynx.

During the succeeding two days his condition did not improve. The prominence of the larynx increased, while the swelling extended from behind forwards. At this time it was thought that there was slight fluctuation near the median line, over the thyroid cartilage. An incision was made from the superior to the inferior margin of this, directly in the median line, and nearly two fluidrachms of thick yellow pus flowed out. The larynx immediately receded, all swelling disappeared, the intense dyspnœa and dysphagia ceased at once. From that moment recovery commenced, and the boy did not have a single symptom of disease afterwards.

Case II.—J. G., aged 9 weeks, was born in the Phila-

delphia Hospital. Immediately after labor his mother suffered from puerperal fever. The child was healthy when born, but when less than a week old he was attacked with erysipelas of the buttocks, which gradually spread upward until the whole of the body and head were affected. This was followed by an abscess situated over the upper part of the occipital bone, near the posterior fontanelle. The contents of this were withdrawn by the aspirator twelve days before the present disease began, and again ten days before. The abscess immediately refilled, and it was opened with a knife three days ago. The erysipelas exhausted the child greatly, but during the last month he has been improving.

The present illness began suddenly ten days ago, with what the mother calls "wheezing in his throat." This was accompanied by some swelling about the larynx, and some noise in breathing. These symptoms continued until last evening, when the mother called Dr. Stone's attention to the child for the first time.

Present condition.—He is poorly nourished, but his general appearance is better than would be expected in an infant who had been so long and so seriously ill. His face is pale; the vessels of the neck and scalp are distended. He lies with his eyes half closed and his head thrown back, as in commencing opisthotonos. The muscles on the back of the neck are rigid and tense.

The alæ nasi move rapidly in breathing. The external muscles of respiration are called into use, those of the neck acting violently. The sternum is arched forward. During inspiration the convexity of this bone is increased, and a deep gutter appears around the base of the chest, on a line with the ensiform cartilage. During expiration this disappears, so that the thorax is actually larger during the expiratory than during the inspiratory act. The breathing is irregular, from forty to fifty times per minute. Inspiration is extremely difficult, is prolonged, and is attended with a sharp stridulous sound which can be heard all over the ward. Expiration is easy and noiseless. The child coughs but little. The sound is hoarse, broken, and tends to become whispering. The cry is nearly suppressed, but the aphonia is not quite complete.

The thorax is everywhere resonant on percussion, and auscultation reveals no evidences of disease of the lungs. The respiratory murmur is inaudible. The laryngeal sound is heard by transmission over the whole of the surface of the chest.

Physical examination of the pharynx reveals no tumor. The finger passes down behind the larynx. The epiglottis can be distinctly felt, and there seems to be a little puffiness upon either side of its base. The examination produced much uneasiness, and was followed by profound dyspnœa.

The larynx is thrust forward so as to produce a decided prominence on the anterior surface of the neck. There is some swelling just over the posterior margins of the thyroid cartilage. No fluctuation can be detected. The examination causes pain.

The tongue is furred, the mouth filled with dense opaque mucus, stomach irritable, and bowels constipated. He has considerable difficulty in swallowing, and cannot nurse at all.

The pulse is weak, irregular, and from 140 to 160 per minute. The irregularity occurs during inspiration.

He continued to grow worse during the succeeding night, and died the next day of dyspnœa.

Post-mortem.—The pharynx was perfectly healthy. The larynx was removed with the tongue and upper part of the trachea. The anterior aspect presented the following appearances: In the middle line and a short distance to either side, bounded by the inner border of the sterno-thyroid muscles, there was distinct fluctuation. Posteriorly to the outer margins of the same muscles, and upon either side, were other fluctuating swellings. The two projections communicated, and an impulse was transmitted from the surface of one to all the others.

The epiglottis was erect, thin, and pale. The cavity of the larynx was nearly obliterated; it contained no false membrane, and the mucous membrane was pale and healthy. Immediately without the epiglottis, between its base and the superior inner margin of the thyroid cartilage, were two fluctuating swellings, one upon either side. These compressed the epiglottis so that its lateral margins were nearly in contact and likewise nearly obliterated the rima glottidis. Fluctuation was communicated from these swellings to those on

the sides and the centre of the anterior outer surface of the organ.

Upon making an incision in the median line, over the prominence of the thyroid cartilage, more than two drachms of thick yellow pus flowed out. The fluctuating prominences on the exterior and interior of the larynx immediately collapsed, and the cavity of the organ was restored to its natural size. A probe could be passed through the incision backwards, and around the posterior margins of the thyroid cartilage, upon either side, so as to put the mucous membrane of the interior of the larynx upon the stretch at any point.

The perichondrium was separated from the thyroid cartilage upon both its inner and outer surfaces. Both surfaces of the cartilage were eroded and rough, while its tissue was softer than it is when healthy. The cricoid cartilage was perfectly healthy. The other organs of the body were healthy.

These two are the only examples which I have met with of what must be a rare disease of the larynx in children. Only one author upon the diseases of children, whom I have consulted, has anything to say upon the subject. This is Vogel,* who speaks of "abscesses of the larynx" as a complication of typhoid fever in children. He states, however, that he has never met with an example of the disease. His description of the symptoms is very vague, and is not sufficient to warrant us in concluding that he alludes to the condition which has been described. Niemeyer† and Wood‡ speak of a somewhat similar condition under the name of "Laryngeal Perichondritis," but neither author details the symptoms with sufficient care to make the diagnosis easy. Porter§ has a chapter on "Abscesses around the Larynx," and Rühle‖ describes the condition in adults, but has nothing to say about abscess of the larynx in children.

* Diseases of Children, 8vo, N.Y., 1870, p. 186.
† Practice of Medicine, 8vo, N.Y., 1869, p. 49.
‡ Practice of Medicine, 8vo, Phila., 1858, vol. i. p. 187.
§ Surg. Path. of the Larynx and Trachea, 8vo, London, 1837, p. 124.
‖ Kehlkopfkrankheiten, p. 162.

In both of these children the symptoms were well marked, and could not but attract the notice of even a careless observer. The terrible dyspnœa, the distressed face, the dysphagia, the stridor, which could easily be heard over a large room, immediately attracted attention. It is not at all improbable that some of the cases recorded as post-pharyngeal abscess have really been abscess of the larynx. In certain particulars the symptoms of the two diseases are strikingly alike. In both there is dyspnœa with dysphagia, and, according to Fleming,* Allin,† West,‡ Vogel,§ and Smith,‖ there is retraction of the head. Relying upon the rational symptoms alone, retro-pharyngeal abscess would probably have been diagnosticated in both of the children whose histories have been related in this paper; but upon making a physical examination of the pharynx, no swelling could be detected in the locality in which this variety of abscess usually projects. This will at once enable the physician to distinguish between the two diseases, while the projection of the larynx anteriorly with induration at the posterior margin of the thyroid cartilage would direct attention to the larynx.

In both cases the symptoms resembled those of œdema of the larynx in adults. The physical examination likewise enabled us to exclude this; for the epiglottis could be felt, thin and healthy, below the root of the tongue. Besides, œdema glottidis is observed "almost exclusively among grown persons."¶ It is doubtful whether it can occur in children as young as these. Moreover, œdema is attended with violent paroxysms of suffocation, such

* *Dublin Quar. Jour. Med. Sci.*, Feb. 1850.
† *New York Jour. of Med.*, Nov. 1851.
‡ Diseases of Children, 8vo, Phila., 1868, p. 472.
§ Diseases of Children, 8vo, N.Y., 1870, p. 121.
‖ Diseases of Children, 8vo, Phila., 1869, p. 322.
¶ Niemeyer, Practice of Medicine, 8vo, N. Y., 1869, vol. i. p. 47; and Flint's Practice of Medicine, 8vo, Phila., 1866, p. 231.

as occur in croup and other laryngeal diseases. In both these children the intensity of the symptoms was steadily progressive from the commencement of the inflammation until the recovery of the one and the death of the other.

Pseudo-membranous laryngitis is another disease which the one we are discussing resembles. They have in common an insidious beginning, are both attended with great dyspnœa, stridulous breathing, and contraction of the base of the chest during inspiration. But in pseudo-membranous laryngitis the head is not thrown back, the dysphagia is absent, the larynx is not thrust forward, and there is no induration at the posterior margins of the thyroid cartilages. In both of the histories which have been related in this paper it is specially noted that expiration was not difficult, and was noiseless. Jacobi, of New York, in an able paper on croup* has called attention to the fact that in that disease both inspiration and expiration are impeded. Since our attention was directed to this as a diagnostic sign of pseudo-membranous laryngitis, we have not met with a single exception to the rule; and, unfortunately, the wards of the Philadelphia Hospital have furnished a number of opportunities to verify the diagnosis by a post-mortem examination.

Meigs and Pepper† attach much importance to the depression or sulcus about the base of the chest in true croup. This is of no value whatever in distinguishing the disease which is being described from pseudo-membranous laryngitis. We have never seen the symptom more marked in fatal cases of that disease than it was in both of the children whose histories have been related.

In relation to the nature of the affection we have but little to say. Whether it commences as inflam-

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* *American Journal of Obstetrics*, May, 1868, p. 22.
† Diseases of Children, 8vo, Philadelphia, 1870, p. 93.

mation of the perichondrium or the sub-mucous cellular tissue is uncertain. It is hardly the latter, for the same reason that œdema of the glottis is rare in infants.

Treatment.—The prognosis of this disease of the larynx is evidently very serious, and to save the patient the treatment must be prompt and efficient. As soon as it is suspected, the child must be carefully watched. In the first case a free incision from the upper to the lower margin of the thyroid cartilage was followed by instantaneous relief and complete recovery. In the second the same result would probably have followed if we had boldly plunged the bistoury in. If the abscess can be opened in the median line, it should be done; and if not, the incision must be made upon a line with the posterior border of the thyroid cartilage, though it is true that in this locality some care has to be exercised, as the incision has to be made close to large vessels.

If this does not give relief, only one course is open,—that is, to perform tracheotomy, with the hope that the life of the patient may be prolonged until the pus is discharged. Any one who has seen a case of this kind can have no doubt in regard to the propriety of such a proceeding.

It is not difficult to conceive that this operation might be demanded in the latter stages of the disease and after pus had been discharged on account of the serious disease of the thyroid cartilage.