

KNIGHT. (C. H.)

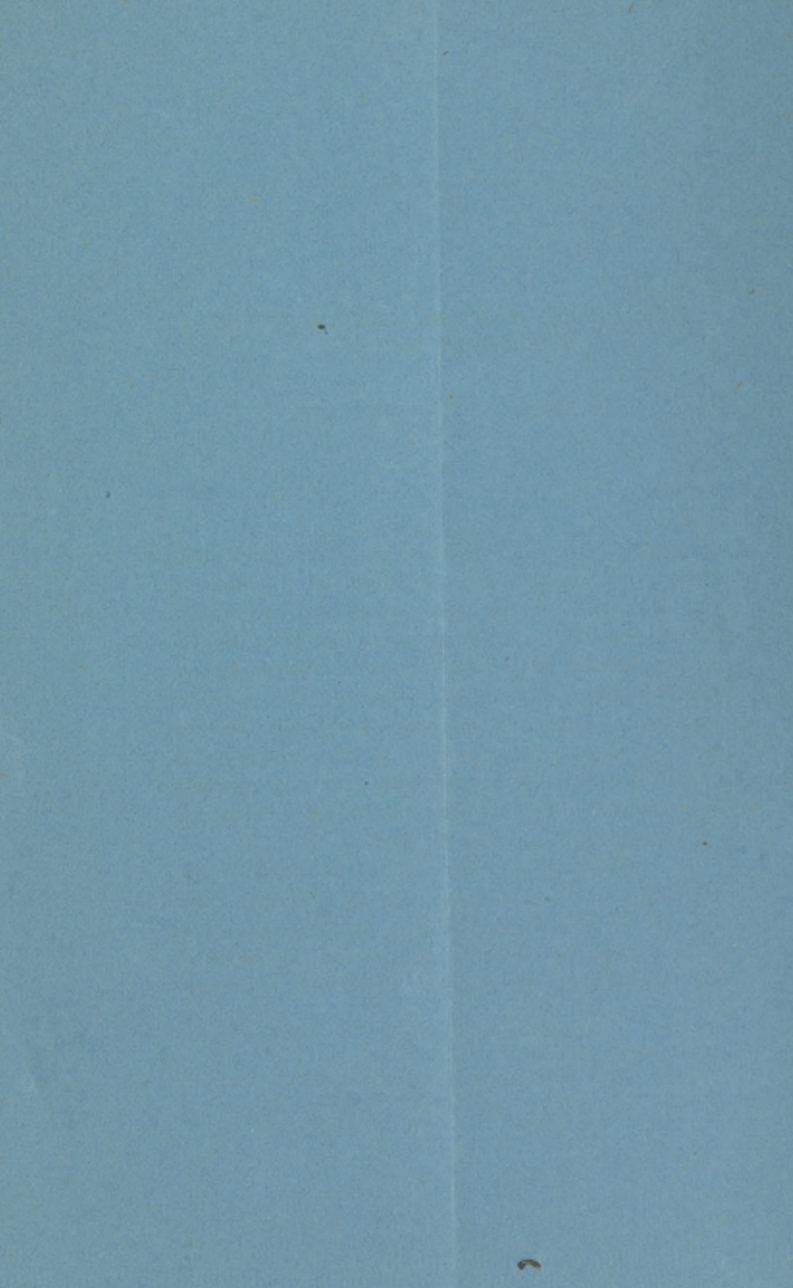
CONGENITAL BONY OCCLUSION  
OF THE POSTERIOR NARES.

BY  
CHARLES H. KNIGHT, M.D.,  
OF NEW YORK.

---

FROM  
THE MEDICAL NEWS,  
November 10, 1888.





**CONGENITAL BONY OCCLUSION OF THE  
POSTERIOR NARES.<sup>1</sup>**

✓  
BY CHARLES H KNIGHT, M.D.,  
OF NEW YORK.

UNTIL recently but little attention has been paid to bony abnormality or outgrowth as a cause of nasal stenosis. Aside from what may be called acute stenosis, from traumatism or fractures involving the skeleton of the nose, bony occlusion is rare. This statement is especially true of the anterior nasal canal, the case described by Jarvis,<sup>2</sup> at last year's meeting of this Association, who referred also to one observed by Delstanche, and one recently reported by Dr. F. H. Potter,<sup>3</sup> of Buffalo, being the only cases which have been noted.

The opinion of Mackenzie,<sup>4</sup> of Baltimore, that "occlusion of the posterior nares is the most common of congenital naso-pharyngeal anomalies," is probably correct, but the proportion of cases in which the obstruction consists of bone is extremely

<sup>1</sup> Read at the Tenth Annual Congress of the American Laryngological Association, September, 1888.

<sup>2</sup> Trans. Amer. Laryngological Association, 1887, p. 222.

<sup>3</sup> Buffalo Med. and Surg. Journal, Sept. 1888, p. 74.

<sup>4</sup> Arch. of Laryngology, New York, July, 1883, p. 161.



small. The number of cases of congenital post-nasal occlusion, from this cause, found by Dr. Alvin A. Hubbell, and cited in his paper read two years ago before the New York State Medical Association, was then limited to thirteen, including one of his own. Six of these were bilateral (Emmert,<sup>1</sup> 1851; Luschka,<sup>2</sup> 1859; Bitot,<sup>3</sup> 1876; Wilkerson,<sup>4</sup> 1882; Schrötter,<sup>5</sup> 1884; Hubbell,<sup>6</sup> 1886). In the remaining cases the obstruction was confined to the right side in three (Wolff,<sup>7</sup> quoted by Fränkel, 1876; Zaufal,<sup>8</sup> 1876; Pomeroy,<sup>9</sup> 1881); to the left in three (Brandeis,<sup>10</sup> 1881; Sommer,<sup>11</sup> 1883; Zaufal,<sup>12</sup> 1883); and in one case the side affected was not mentioned (Gosselin,<sup>13</sup> 1876).

Congenital bony occlusion of the posterior nares may occur as a result of: (1) exostoses, or simple hypertrophy of the osseous structure of the turbinated body, middle or inferior; (2) a ridge, or exostosis, springing from the vomer; (3) an adventitious plate of bone developed from the floor, or the outer wall, of the nasal cavity. The bony im-

---

<sup>1</sup> Lehrbuch der Chirurgie, Stuttgart, 1853, B. ii. p. 535.

<sup>2</sup> Arch. für path. Anat., xviii., 1859.

<sup>3</sup> Gaz. Méd. de Paris, 1876, No. 36, p. 430.

<sup>4</sup> North Carolina Medical Journal, June, 1882, p. 305.

<sup>5</sup> Monatsschr. für Ohrenheilk., April, 1885, p. 97.

<sup>6</sup> Buffalo Med. and Surg. Journal, December, 1886.

<sup>7</sup> Ziemssen's Cyclopædia, vol. iv. p. 113.

<sup>8</sup> Präger med. Wochenschr., 1876, No. 45, p. 837.

<sup>9</sup> Diseases of the Ear, 1883, p. 201.

<sup>10</sup> Medical Record, New York, Nov. 12, 1881, p. 552.

<sup>11</sup> Wiener med. Presse, April, 1883, p. 476.

<sup>12</sup> Wiener med. Presse, April, 1885.

<sup>13</sup> Gaz. Méd. de Paris, 1876, No. 36, p. 430.



pediment may vary in extent from a thin lamella or band, jutting into or bridging over the nasal passage, to a complete impervious wall. The former may occasion little or no manifest trouble, until, in after-life, it becomes the exciting cause of various local and reflex derangements. The latter is far more serious; and, when it exists on both sides, is almost of necessity fatal to the nursing infant.

The first variety (turbinated) is probably the most common, although true exostoses of the turbinated bone are rare, and may be congenital, or a result of disease. It is illustrated by several cases reported, more recently by a case operated on by Weir,<sup>1</sup> at the New York Hospital, who informs me that he has met with another similar case. Each of these was, in a measure, relieved by operation.

The dictum of certain authorities that congenital deflections of the bony septum are unknown may be true if restricted to its thicker posterior portion. While, therefore, it may not be proper to enumerate deflection of the septum among the causes of congenital post-nasal occlusion, thickening or exostosis of the vomer may exist to a degree sufficient to produce the second variety (septal) of nasal stenosis, especially if associated with abnormality of the turbinated bodies. In his work on *Post-nasal Catarrh*, p. 180, Woakes mentions exostosis and deviation of the septum as causing post-nasal obstruction, and refers to several cases, but does not speak of having met with congenital occlusion from these causes.

---

<sup>1</sup> New York Medical Journal, March 12, 1887.

This condition, usually pathological, may be congenital. An instance of the former may be found in Case III., and of the latter in Case V., in Zuckerkandl's<sup>1</sup> classical work: In the former, the septum presented a bony prominence, which had formed an adhesion with a similar outgrowth from the middle turbinated body, evidently due to a morbid process. In the latter case, a very complicated one, there were several synechiæ, partly membranous and partly osseous, due no doubt to faulty development, and not to a pathological process.

The third variety (palatal) of bony occlusion of the nares is of particular interest in connection with the case forming the basis of this paper. In the classification of the last-mentioned authority, no reference is made to it, and I have been able to find only two cases (Luschka, and Bitot) in which its existence was proved by post-mortem examination. Yet careful anterior and posterior rhinoscopy, as well as palpation, and the shape, situation, and character of the bony obstacle seem to establish the presence of this anomaly in several cases reported, as well as in my own case.

The precise origin of the bony wall is more or less a matter of speculation. It is quite probably a continuation of the free border of the horizontal plate of the palate bone, as described by Luschka, or an extension of its vertical plate, as maintained by Kundrat. In an interesting paper on "chronic nasal catarrh," based on the study of a large number

---

<sup>1</sup> Normale und path. Anatomie der Nasenhöhle, etc., 1882, p. 95.

of skulls, Harrison Allen<sup>1</sup> refers to one cranium in which the palatal bones sent up a delicate process "nearly half way on either side of the vomer at the posterior nares." He speaks of it as "strengthening the septum," but does not say to what extent it obstructed the choanæ. Possibly this may have been a modified or incipient form of Luschka's plate. In examining more than two thousand skulls, Sir Morell Mackenzie met with four instances of bony synechiæ, which he describes, but it does not appear whether the deformity in any case was congenital or acquired, or that this special form of bony abnormality was present.

The etiology of this condition is obscure. Spencer Watson<sup>2</sup> says that "it is probable that the late development of the bones in this region occasionally favors the formation of tumors and outgrowths in the nasal and orbital cavities, and that some of the malformations of the face are due to arrest of development of these parts during foetal life." It is not difficult to understand the occurrence of asymmetry of the nasal chambers resulting from want of harmony in the development of the lateral half arches and the median structures, which enter into the formation of the face, as suggested by Allen. It is easy to conceive that this error of formation might proceed to even complete occlusion of the nares. But the deformity under consideration is not *necessarily* accompanied by obvious malformation or lack of development in other respects. It would seem to be

---

<sup>1</sup> The American Journal of the Medical Sciences, 1880, p. 72.

<sup>2</sup> Diseases of the Nose, 1875, p. 23.

rather an excess of development, an overgrowth of bone, resulting from hypernutrition.

A fourth cause of bony occlusion, though not strictly within the scope of this paper, deserves passing notice, namely, osteoma, either intranasal, or, much more commonly, projecting into the nasal passage from adjacent structures or cavities. This rare lesion has been described by Watson, Bornhaupt,<sup>1</sup> Tillmans,<sup>2</sup> and others, and recently a case of orbital osteoma, invading and blocking up the posterior nares, has been reported by Fenger.<sup>3</sup>

Several cases should be added to those already mentioned. Schötz<sup>4</sup> reports a case of a girl, sixteen years old, whose posterior nares were obstructed by diaphragms, probably bony, in consequence of which she had never been able to smell, or breathe freely through the nose. He expected to restore both the olfactory and the respiratory function by an operation. He mentions having found records of eight similar cases of double occlusion. Woltering<sup>5</sup> describes a case of right-sided bony occlusion, in a girl eighteen years old, which he treated with especially devised bone-cutting forceps, but with only partial success.

At the sixtieth meeting of German naturalists and physicians, Hopmann<sup>6</sup> described two original cases

---

<sup>1</sup> Arch. für klin. Chirurg., 1881, B. 26, p. 589.

<sup>2</sup> Arch. für klin. Chirurg., 1885, B. 32, p. 677.

<sup>3</sup> Journ. Amer. Med. Association, August 11, 1888.

<sup>4</sup> Deutsche med. Zeitung, March 3, 1887, No. 18.

<sup>5</sup> Monatsschr. für Ohrenheilkunde, 1886, No. 20, p. 318.

<sup>6</sup> Archiv für klin. Chirurg., B. xxxvii. 2, p. 235; also, Rev. mens. de laryngologie, etc., January, 1888, p. 28.



of complete bony occlusion of the right posterior naris. The first occurred in a patient eleven years old. An anæsthetic having been given, a passage was cleared by means of a chisel. In so doing the septum was broken, and fracture of the hard palate, with laceration of its mucous membrane, was produced. In consequence, the patient had considerable constitutional disturbance. Rubber tubes, increasing in size, were worn for about two months, and then discontinued. In three weeks the stenosis recurred, and a system of dilatation with Schroetter's laryngeal dilators was begun. Later, ivory plugs were used for nearly three months, being removed twice daily for cleansing. Nine months afterward there had been no narrowing of the passage.

In the second case the author describes the obstruction as being caused by a bony lamina from the free border of the septum, and by an osteoma springing from the floor of the nose. The patient was nineteen years old, and, as in the preceding case, the right choana only was affected. A similar operation was resorted to, and, as before, the vomer and hard palate were fractured. In this instance the cure seems to have been less tardy. A case observed by Schaeffer<sup>1</sup> is referred to, and notes of several cases of incomplete occlusion, partly membranous and partly osseous, are added.

In the discussion on Hopmann's paper, a case of total osseous occlusion *without symptoms* was referred to by Abertüschén. Keemir reported a case in which he operated with a chisel. He then inserted a gum

<sup>1</sup> Chirurg. Erfahrungen in der Rhinologie. Wiesbaden, 1885.

catheter, and afterward a silver tube. Gottstein stated that he had operated in a similar case with a dental drill, which failed to give him satisfaction.

In reporting Bitot's case to the French Academy of Medicine, Depaul<sup>1</sup> referred to an analogous case in his own experience. No doubt further search would discover additional examples of this interesting malformation.

Two cases of congenital, bony occlusion of the posterior nares have come under my observation, in either case the right side only being affected. One was seen but a few times, and no operation was undertaken; the other submitted to operation, and gave the following history:

G. S., female, æt. eighteen, single, consulted me in May, 1887, for enlarged tonsils, which were removed with the galvano-cautery. In the course of examination, she drew my attention to the fact that she could not breathe through her right nostril. This condition had existed as long as she could remember, but had given her no special discomfort. There was a moderate grade of chronic catarrhal rhino-pharyngitis. There was no impairment of smell, although it cannot be supposed that the right nostril shared in this function. There was no trouble in breathing through the left side of the nose, under ordinary circumstances. When the patient caught cold a discharge of watery fluid occurred from the right nostril, which at other times was entirely free from secretion. For two or three years impairment of hearing in the right ear had been observed, but it

---

<sup>1</sup> *Gaz. méd. de Paris*, 1876, No. 36, p. 430. Mackenzie, Schrötter, and others refer to a case reported by "Betts." The name should be Bitot.

is by no means certain that hearing on that side has ever been perfect. Vision was good. The patient's mind was so occupied with her tonsils that her nose would have given her little or no uneasiness, but for the fact that she was aware of being different from other people. She was somewhat subject to headaches, which were usually explained by gastric disorder. She had no cough, and had never had any serious illness. Her general condition was not good. Her complexion was sallow, her cervical glands were enlarged, her flesh lacked firmness, and altogether she had the appearance of being poorly nourished. Her family history was good, except that a younger brother has hypertrophied tonsils.

The external contour of the nose was manifestly unsymmetrical, the right side being more prominent and "thicker," as the patient expressed it. Anterior rhinoscopy showed a very much contracted right nasal fossa, the septum being slightly deviated to the right, and presenting a ridge along the floor of the nose. The turbinated bodies seemed atrophied and their covering of mucous membrane appeared thin and dry. They were notably paler than those of the other side. A probe could be passed along the inferior meatus for two and a half inches. It traversed the middle meatus with great difficulty, on account of the deflected septum, to a similar depth, when it met with firm resistance. The left nasal cavity was unusually roomy, and the turbinated bodies, especially the lower, were large.

Posterior rhinoscopy was not easy, but after considerable training of the patient, the right choana was seen to be completely occluded by a partition, which seemed to be on a plane with the free margin of the vomer. The septum did not appear to be deflected. There was a small amount of adenoid

tissue in the vault of the pharynx. The palatal arch was of average height, and nothing abnormal was seen in the oral cavity. On palpation, however, the left palate bone could be distinctly felt to extend further back by fully one-fourth of an inch than the right. By firm pressure it was possible to determine that the posterior margin of the latter was much thicker than that of its fellow. The impression given to the finger was as if the right palate bone had been bent at an obtuse angle. Pressure forward from the naso-pharynx proved the barrier to be unyielding. On pressing firmly with a large blunt probe, passed from the front along the inferior meatus, the patient complained of pain in the roof of the mouth, and during subsequent manipulations sensations were always referred to this region.

With the idea that it might be a membranous wall an attempt was made to puncture with the galvano-cautery, but it soon became evident that I had to deal with osseous tissue. No difficulty was found in perforating the obstruction with the nasal trephine attached to the electric motor. The opening thus made, about one-quarter of an inch in diameter, was subsequently enlarged by means of a revolving burr. There was not much bleeding and pain was not excessive, cocaine, in a twenty per cent. solution, having been applied anteriorly and to the naso-pharynx.

The piece of bone removed in the crown of the trephine was found to be very dense. On one side only the mucous membrane was preserved, it having been burned away anteriorly. The segment of bone measured antero-posteriorly about one-quarter of an inch at its lower, and one-eighth of an inch at its upper margin.

The after-treatment was directed to keeping the



parts clean by means of a spray of Dobell's solution, and to preventing closure of the wound by daily passage of nasal bougies.

It is now more than a year since the operation, and the patient is able to breathe through her right nostril, though not always with perfect freedom. Her hearing has not improved, but her sense of smell is somewhat more acute than formerly. The question arises, Whether any other advantage has been gained? Aside from the benefit to her general health from tonic treatment, and to her pharynx following the removal of the tonsils, it must be admitted that nothing has been gained by boring a hole through her nostril. On the contrary, she is rather uncomfortable much of the time from the fact that secretions accumulate and dry in her right nostril, whereas formerly she was not annoyed in that way.

It must be confessed, therefore, that, except in the points mentioned, this patient was more comfortable with her nose as Nature made it than she has been since she fell a victim to science. Possibly, too, it may be said that the operation is not yet complete, since the right posterior naris is still much narrower than the left. The patient, however, is satisfied with being enabled to breathe through both nostrils, and cannot be persuaded to undergo any more drilling.

The great difficulty in these cases, namely, to keep open the newly made nasal tract, may arise from the fact that sufficient tissue has not been removed, as well as from neglect in the after-treatment. By far the best method of operating, as regards rapidity, accuracy, and thoroughness, is that with the electric trephine or drill.

Should another case of this kind offer itself to me

## 12 OCCLUSION OF POSTERIOR NARES.

for treatment, my plan would be, unless quite sure of the fortitude of my patient, to give an anæsthetic, and thus be allowed time enough to restore the malformed naris more nearly to its normal dimensions. Various devices have been used to obviate failure of the operation, such as the retention of flexible and of metallic tubes, and the passage of nasal bougies and dilators. In spite of all, in several cases recorded the operation has had to be many times repeated, in consequence of recurrence of obstruction.

In studying this case, two points impressed me with peculiar force. The first was the remarkable tolerance on the part of the patient of a condition involving serious interference with three important functions. In this respect the case seems to be exceptional, since the literature of the subject shows that nearly all similar cases on record had symptoms of more or less consequence, being naturally most severe in case of bilateral atresia. The amount of disturbance which would be likely to ensue from a similar *acquired* condition is in striking contrast.

The second point, a practical one, relates to the testimony gained by examination of the parts with the finger. I would not detract from the importance of rhinoscopy, but certainly, in this case at least, information was obtained by the finger which could not have been given by the mirror.

NO. 20 WEST THIRTY-FIRST ST.,  
NEW YORK.



# THE MEDICAL NEWS.

A National Weekly Medical Periodical, containing 28-32 Double-Columned Quarto Pages of Reading Matter in Each Issue. \$5.00 per annum, post-paid.

UNITING in itself the best characteristics of the magazine and the newspaper, THE MEDICAL NEWS renders a service of exceptional value to the profession. It presents original articles, hospital notes and clinical lectures by the ablest writers and teachers of the day, discusses living topics editorially in a clear and scholarly manner, and employs all the recent and approved methods of medical journalism—the telegraph, reporters and a corps of special correspondents covering all the medical centres of the globe. It thus imparts, without loss of time, all advances of knowledge attained in the medical sciences. In short, it is the effort of all concerned in the publication of THE NEWS that it shall be indispensable to every physician in active practice.

## The American Journal of the Medical Sciences.

Edited by I. MINIS HAYS, A.M., M.D.

Published monthly, beginning with 1868. Each number contains 112 octavo pages, amply illustrated. Price reduced to \$4.00 per annum, post-paid.

In his contribution to *A Century of American Medicine*, published in 1876, Dr. John S. Billings, U. S. A., Librarian of the National Medical Library, Washington, thus graphically outlines the character and services of THE AMERICAN JOURNAL—"The ninety-seven volumes of this Journal need no eulogy. They contain many original papers of the highest value; nearly all the real criticisms and reviews which we possess; and such carefully prepared summaries of the progress of medical science, and abstracts and notices of foreign works, that from this file alone, were all other productions of the press for the last fifty years destroyed, it would be possible to reproduce the great majority of the real contributions of the world to medical science during that period."

### COMMUTATION RATE.—Postage paid.

THE MEDICAL NEWS, published every Saturday,	} in advance, \$7.50.
THE AMERICAN JOURNAL OF THE MEDICAL	
SCIENCES, monthly,	

**LEA BROTHERS & CO., 706 & 708 Sansom St., Phila.**