

On a hitherto undescribed malformation of the naso-pharynx / by John N. Mackenzie.

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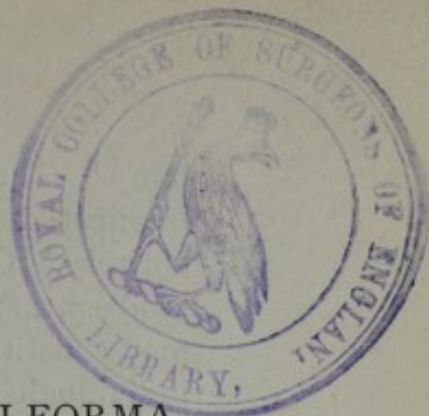
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AUTHOR.ON A HITHERTO UNDESCRIBED MALFORMA-
TION OF THE NASO-PHARYNX.*By JOHN N. MACKENZIE, M.D.,
OF BALTIMORE.

THAT malformations of the naso-pharynx are of rare occurrence is the inference which follows from their cursory mention in works on teratology, and the infrequency with which isolated cases are encountered in periodical medical literature. If we consider, however, the complex process involved in the embryological evolution of this region; if we reflect that many of its deformities, indirectly removed from sight, may be compatible with the perfect comfort of their possessor, and therefore come only accidentally under medical observation; and if we bear in mind the notable infrequency with which the naso-pharyngeal cavity is examined after death, it is quite possible that departures from its normal structure may be more common than is generally supposed.

In that wonderful book,¹ of which it has been said, that it is as full of variety as nature herself, Pliny the Elder tells us that children born in the seventh month frequently have the ear and nose imperforate. Whether the observation of the great natural historian be correct or not, it is quite certain that occlusion of the posterior nares is the most common of congenital naso-pharyngeal anomalies. The occlusion may affect one or both nostrils;² may be membranous or

* Read Feb. 16, 1883, at the Clinical Society of Maryland.

¹ "Nat. Hist.," lib. xi, cap. 59.

² Vicq d' Azyr (*Mém. de la soc. de méd.*, 1776, p. 315; Otto, "Handb. d. path. Anat.," Breslau, 1814, S. 201). Roederer (quoted by Meckel, "Handb. d. path. Anat.," Leipzig, 1812, i, S. 406). Plancus (*Mém. de Berlin*, 1761, p. 73). Otto (*op. cit.*). Cohen ("Dis. of Throat," etc., 1879, p. 305). Luschka ("Der Reprinted from the ARCHIVES OF LARYNGOLOGY, Vol. iv, No. 3, July, 1883.

bony.¹ The orifices of the posterior nares may be alone implicated, or the nasal fossæ may be obliterated in their entirety.² Obliteration of the choanæ occurs when the nose is absent, as in cyclopic monsters,³ or rudimentary;⁴ or it may constitute the sole aberration from the normal in the individual. This malformation, when congenital, seems to be incompatible with the independent life of the fœtus.⁵ Fusion of the choanæ into one is occasionally observed associated with absence of the vomer.⁶ The position of the posterior edge of the vomer is, according to most anatomists, always median and perpendicular, deflection in this situation being probably exceedingly rare.⁷

Very rarely it is divided vertically into two halves, as in the cases recorded by Lefferts⁸ and Schrötter,⁹ and Harrison Allen¹⁰ refers to a specimen in the Wistar and Horner Museum in Philadelphia, where the vomer was strengthened on either side by a delicate bony process from the palate bones. Finally, the capacity of the naso-pharynx varies greatly in different individuals, especially in its antero-posterior diameter, which is often notably diminished, and Lennox Browne¹¹ asserts that occlusion of the nostrils may result from angular curvature forward of the upper cervical vertebra. I have seen several cases of marked lateral deviation of the posterior wall.

Schlundkopf des Menschen," Tübingen, 1868, S. 27). Fraenkel (*Ziemssen's Cyclop.*, Am. ed., vol. iv, p. 113). Betts (quoted by Cohen). Emmart (quoted by Luschka). Voltolini ("Die Anwendung d. Galvanocaust.," Wien, 1870, pp. 243-262), *et al.*

¹ Oberteuffer (in Stark's neuem *Archiv.*, ii, St. iv, S. 640; Otto, *l. c.*). Littré (*Mém. de l'acad. des sc.*, 1701, p. 120).

² Rohowsky, "De choanarum obliteratione." (Meckel, Otto.)

³ Vrolik, Scemmering (Paget, *Todd's Cyclop.*, Art. Nose), Borrechi, Plouquet (Otto, *l. c.*).

⁴ Maigrot (*Roux Jour. de méd.* t. 15, p. 142, Meckel). Roloff ("De Monstris," Venet., 1749, Meckel).

⁵ Ronaldson, *Edinburgh Medical Journal*, May, 1881, p. 1035.

⁶ Roloff (*l. c.*). Roederer (*l. c.*). Fernet (*Bull. de la soc. anat.*, 1864, p. 130). Blandin, "Anat. topograph.," p. 74.

⁷ Welcker, however, found asymmetry of the choanæ thirteen times in thirty-seven cases. (*Ziem. Monatsschrift f. Ohrenheilkunde*, Feb., 1883, p. 23.)

⁸ *Phila. Med. News*, Jan. 7, 1882, p. 12.

⁹ *Laryngologische Mittheilungen*, Wien, 1875 (Lefferts, *l. c.*).

¹⁰ *American Jour. Med. Sc.*, Jan., 1880, p. 72.

¹¹ *British Med. Jour.*, 1878, vol. ii, p. 282.

The following case cannot be referred to any of the above-described anomalies, and may be considered as the representative of a hitherto unrecognized malformation of the naso-pharynx:

Miss E., æt. fourteen, a robust, well-formed child, was brought to me in Feb., 1882, from one of the adjoining counties, on account of a nasal discharge of some years' duration, which had become a source of great annoyance, not only to herself, but to those by whom she was immediately surrounded. The story of her case was the familiar narrative of naso-pharyngeal catarrh: progressive nasal obstruction followed by buccal respiration with its common heritage of pharyngo-laryngeal hyperæmia, irritative cough, catarrhal otitis media, and spasmodic asthma. This train of events I found to be dependent on a mass of so-called adenoid or papillary vegetations which occupied the naso-pharynx and precluded respiration through the nose. Owing to the fright of the child and her consequent intractability, the examination of the post-nasal region was made in the first instance with the finger. The first object which it encountered in its passage behind and above the soft palate was a thin, sharp ridge, extending from before backward, which proved on further investigation to be the inferior border of a bony partition which separated the naso-pharynx into two lateral halves. The septum consisted of a thin lamella communicating to the touch the sensation of bone, continuous anteriorly with the posterior edge of the vomer, and inserted posteriorly into the posterior superior pharyngeal wall. Superiorly, it became fused with the pharyngeal vault. The septum narium was slightly deflected to the left from before backward; the bony lamella had a similar inclination, and seemed to be, in fact, a prolongation backward of the vomer. Its inferior edge was more or less sharp, clearly defined, and curved from before backward and upward, presenting a very marked resemblance to the normal posterior curve of the nasal septum in the skeleton. Its insertion into the pharyngeal wall was on a higher plane than that of its origin, which corresponded with the inferior edge of the septum. Attempts were made to dislocate it, but without success.

Although both naso-pharyngeal spaces were filled with growths, none sprang from their dividing septum, which, in its entire length, was free from irregularities of any kind.

The growths were removed in several sittings with the forceps and curette, the after-treatment consisting in the use of a simple

detergent spray followed by one of alcohol and water. With the ablation of the growths came an immediate amelioration of the patient's condition and a rapid disappearance of its complications. A rhinoscopic examination made several days after the operation confirmed the diagnosis to which the previous digital exploration had led. The partition was then seen to be covered by apparently normal, though congested, mucous membrane continuous with that lining the nasal passages and pharynx. The mucous membrane covering the turbinated structures was also congested, but otherwise its condition was normal. Apart from the bony wall, nothing abnormal was detected in either naso-pharyngeal compartment.

As the result of an examination of a number of crania suggested by the above anomaly,¹ I would like to call special attention to the varying degrees of obliquity which the plane of the posterior nares bears to the horizontal—in some instances the angle is so small that they look almost directly downward. This inclination of the choanæ involves a corresponding obliquity in the posterior edge of the vomer, and coincides with an abnormal inclination of the pterygoid processes and body of the sphenoid bone. Herein, too, lies the anatomical explanation of the variations in the angle which it is often necessary to give to the rhinoscopic mirror before the image of the nares appears in the glass.

In the production of the above malformation three factors were doubtless concerned: (1) a more or less pronounced obliquity downward and backward of the body of the sphenoid bone and basilar process of the occipital; (2) abnormal curvature backward of the vomer, associated with marked obliquity of the posterior orifices of the nasal fossæ; and, possibly, (3) an unusual height of the bony palate.

The deflection of the septum as a whole is a feature of additional interest in the case, as well as the possible relation of the deformity to pathological processes, and its influence on the manipulation of instruments in the naso-pharyngeal space.

¹ The skulls examined were mainly from the anatomical museum of the University of Maryland, and were placed at my disposal through the courtesy of my friend, Prof. Michael.