

MACKENZIE (John N.)

CASES OF REFLEX COUGH DUE TO NASAL  
POLYPI; WITH REMARKS.

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Surgeon to the Baltimore Eye, Ear and Throat Charity Hospital.



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*Reprint from Transactions of the Medical and Chirurgical Faculty of Maryland, 1884.*  
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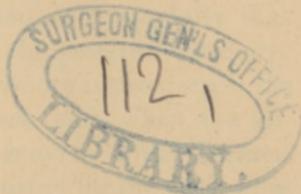


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## CASES OF REFLEX COUGH DUE TO NASAL POLYPI; WITH REMARKS.

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In a paper on *Naso-Aural Catarrh*, read at the last annual meeting of the Faculty,\* I called attention, amongst other things, to the frequency of reflex cough as a symptom of a number of pathological conditions affecting the turbinated bodies of the nose and their overlying mucous membrane, and especially that portion of the erectile tract which covers the posterior extremity of the inferior turbinated bone. I furthermore insisted upon the importance of local treatment in such cases, and, when the circumstances required it, the destruction or removal of the diseased portion of the membrane and cavernous tissue for the dissipation of this as well as other reflex phenomena; and in a subsequent publication† gave a number of examples, in illustration of the effect of such treatment.

I desire to-day to present to you the essential features in the histories of several cases where reflex cough was occasioned by the presence of polypi in the nostrils, and dissipated by ablation of the growths.

CASE I. Mrs. B., æt. 40, had suffered for upwards of four years from obstruction of the right nostril with discharge, recurring epistaxis, a constant tendency to violent attacks of acute coryza, and occasional symptoms referable to inflammation of the

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\*See Transactions Med. Chir. Fac. of Md., 1883.

†On Nasal Cough, etc. Am. Journ. Med. Sci., July, 1883.

middle ear. For a year prior to consulting me, had been troubled with a disagreeable dry, hacking cough, which was almost always present, but was especially severe at night, or at any time, in fact, when she assumed the recumbent position. The cough varied somewhat in character; at times it consisted simply of a series of short, explosive, expiratory sounds, whilst at others it assumed a more violent and paroxysmal nature. It was invariably worse in wet weather or in the presence of sudden atmospheric changes. Her spirits had become depressed in consequence of the constant cough, and this, together with the pain in the chest walls induced thereby, had led her to imagine that her lungs were in some way involved.

I saw her first on the second day of April, 1883, a strong, healthy woman, whose throat and lungs were free from the faintest trace of disease. Springing from about the junction of the middle and posterior thirds of the right middle turbinated bone, was a large, pedunculated, freely movable gelatinoid polyp, which hung into the inferior meatus of that side. The nasal mucous membrane was swollen, hyperæmic, and both nostrils, but more particularly the right, contained a moderate amount of muco-purulent secretion.

I removed the polyp with the wire snare. Two days after its extirpation, the cough had completely disappeared, and did not recur until the latter part of the following July, when she returned to say that her old trouble had reappeared, and that she was "as bad as ever;" and, that, in addition to the other ills, she had partially lost the sense of smell. On looking into the right naris, a large polypus was found growing from the situation of the one that had been removed some months before. Thinking that its regeneration was due to imperfect removal in the first instance, I not only extirpated the growth, but took away at the same time the ledge of bone from which it sprang. The day after the operation the cough had disappeared, and has not since returned.

CASE II. Mrs. T., an elderly lady of somewhat nervous temperament, but of splendid physique, consulted me in January, 1884, on account of a distressing cough of over six years' dura-

tion. Seven years before she had contracted a catarrhal condition of the nasal passages, for which she had adopted no treatment other than systematic cleansing of the nostrils with a douche of tepid water and common salt. For a year prior to consulting me, the cough had been increasing steadily in severity, so that it was almost constantly present during the day, and kept her awake at night. This incessant dry, hacking cough alternated with paroxysms of such severity that they would leave her in a state of considerable weakness and nervous prostration. The attacks were worse during rapid changes in temperature, and were generally associated with more or less stoppage of the nostrils. Her appetite and spirits had alike forsaken her, and she found great difficulty in digesting what little food she took into her stomach. For over a year she had been, as a rule, compelled to breathe through her mouth, and suffered from intolerable dryness of the back of the throat, some difficulty in swallowing, and frequent hoarseness, with a sensation of pricking and obstruction in the larynx. Putting all these things together, she had arrived at the conclusion that her trouble was connected in some way with an incurable disease of the larynx, possibly throat consumption.

Physical examination failed to detect any disease of the lungs or heart. The larynx presented a normal appearance, but during the examination became congested. The pharynx exhibited the appearances of chronic catarrhal pharyngitis. The anterior extremities of the inferior turbinated bodies were swollen and hyperæmic. Behind them could be seen the glistening bodies of two polypi, whose origin was in the upper part of the nostrils, and which hung down to within a few lines of the nasal floor. Upon touching the hyperæmic area with a probe, a paroxysm of coughing could be produced.

The growths were removed in several sittings with the wire snare. Within several days after their complete removal, the cough had entirely disappeared, together with the symptoms referable to laryngeal disorder. No after treatment was used beyond daily cleansing of the nose with hot water containing alcohol and common salt. The swollen condition of the turbinated

bodies subsided rapidly after the ablation of the growths, and with the disappearance of the cough, her appetite and spirits returned.

This patient is still under my care for the chronic inflammation of the pharynx, which causes a considerable amount of the hemming and hawking inseparable from that disease; but since the removal of the polypi has had no return of the dry, hacking cough which she had before then begun to look upon as a life-companion.

CASE III. In addition to those cases, mention may be briefly made of a young girl whose symptoms so resembled those of a laryngeal growth (cough, sensation of foreign body, with pain in the larynx, slight dyspnoea, with occasional croupy voice, etc.) that she was referred to me for operation. Upon examination, the larynx was found to be normal in every respect, and nothing could be discovered in the respiratory tract to account for the symptoms beyond a small fibrous outgrowth from the middle third of the left inferior turbinated bone. After excluding all other possible sources of reflected irritation, I advised removal of the growth; but the patient disappeared, and I was never able to follow up the case.

The dependence of asthmatic attacks upon the presence of polypi in the nasal chambers is sufficiently common; but the important rôle of the latter in the production of cough has been apparently overlooked. At the time of the publication of my thesis but one such case had been recorded. Within the past year four similar ones have come under my notice. So far as my experience goes, it would appear that the cough is only present when the growths spring from, or are brought in contact in some way or other with, a portion of the erectile area, and generally its posterior portion. Or, in other words, it is only when the polypus acts as a mechanical irritant by causing engorgement of the mucous membrane and erectile cells, and thereby exciting reflex action, that the explosive cough is produced. The probability, therefore, of cough-excitation will depend, other things being equal, upon the position of the growth. Thus, for example, a polypus situated high up in the nostril may fail to give

rise to the reflex act which its presence lower down in the nasal fossa would excite. Or a moveable growth in the more anterior portion of the nasal chamber may awaken no reflex when the head is in the vertical position, whilst when the vertical diameter of the nostril becomes horizontal, as, for instance, in the recumbent position, the growth may by force of gravity be brought in contact with the posterior portion of the nostril, or what is the same thing, with the most excitable spot in the sensitive area. In the same way, the asthmatic attacks which have been observed in connection with nasal polypi may be explained. At all events, such an explanation is more plausible than the assumption, which may be urged, of direct nervous irritation starting from the polypus itself; since the ordinary mucous polyp is destitute of nerves\* and can, therefore, only awaken reflex phenomena in an indirect or mechanical manner. Moreover, I have tried to obtain the reflex by direct stimulation of the growth, but so far, without success. Finally, I wish to observe, that the change in position of the polypus does not depend altogether upon the law of gravitation, but in some instances may be due to an increase in volume, either from local irritation of various kinds or from the well-known hygroscopic character of the gelatinoid outgrowth. The augmentation in bulk thus brought about would obviously bring it into contact with parts which in its original position would not be encroached upon, and therefore not subjected to the pressure and irritation which it might occasion.

In regard to the mechanism of the reflex, two explanations suggest themselves—either the assumption of correlation of the nasal erectile area and the interarytenoid space (laryngeal cough center), by virtue of which irritation and vascular engorgement of the former may lead to hyperæmia of the latter through the medium of the vaso-dilator nerves through the superior cervical ganglion and the consequent production of a laryngeal cough, or what is more probable, the direct transmission of the irritation

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\*The only instance of the discovery of nervous filaments in a nasal polypus that I am aware of is the case described by Theodor Billroth in his brochure, *Ueber den Bau der Schleimpolyphen*. Berlin, 1855.

through the spheno-palatine nerves to the medulla and its immediate reflection outward to the muscles concerned in the expiratory act.

It is unnecessary to insist upon the obvious lesson taught by the cases whose histories have been recited above. In addition to other points of interest which they present, I would like to call your attention to the *subjective symptoms referable to the larynx* and their disappearance upon removal of the source of the irritation in the nose.



