

## THE PROBLEM OF SURGERY OF THE PARANASAL SINUSES

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The mucous membrane of paranasal sinuses is a direct continuation of the nasal mucosa; they are embryologically and anatomically closely connected, with the only difference that the mucous membrane of paranasal sinuses is a histologically reduced nasal mucosa because of the functionally lesser activity. That is why various physiological and pathological reactions take place simultaneously on the mucous membrane of the nose and that of the paranasal sinuses. As these reactions of the mucous membrane of paranasal sinuses develop on the looser structure, the inflammatory oedema of the mucous membrane of paranasal sinuses will be more pronounced, the consequence of which is the closing of the ostia of paranasal sinuses, a greater possibility of secondary infections and chronic affections. To-day we know that in the pathology of the mucous membrane of the upper respiratory tracts various moments play an important part, and create a predisposition of the same membrane for secondary infection. Anaemia, endocrine disfunctions, allergy and neurovegetative disbalances can be the factors which will, especially on the mucous membrane of paranasal sinuses, cause chronic and recurrent inflammatory affections because of lesser possibility of drainage and aeration. This, in fact, is the reason for more frequent appearance of pathological phenomena of the paranasal sinuses, but, at the same time, the reason for studying whether we can, by radical surgical treatment, solve such pathological states of the mucous membrane of the paranasal sinuses. On the basis of our earlier clinical experiences we cannot be satisfied with the radical treatment of the paranasal sinuses, especially in cases when several sinuses were operated, because they generally resulted in chronic atrophic states on the nasal mucosa with subsequent breathing difficulties, suppurative secretion and the creation of the crusts, or persisting troubles of the paranasal sinuses.

If we ask ourselves what is the reason of such final results, we must admit that the primary cause of these troubles is sometimes far from our consciousness. The creation of the cavities with the new regenerated mucosa from the area of the nose or the obliteration of several sinuses could not result in the removal of this primary cause or free the nasal mucosa and the sinuses as a whole from this noxa. Better knowledge of allergy as the cause of pathology of sinuses has at the same time made it possible for us to get better acquainted with this primary cause. Shaumbaugh states that 90 % of all the affections of sinuses have an allergic etiology. Perhaps this percentage is a little too high but that most often a general factor is responsible for polysinusal troubles is doubtless, and it should be looked for before we decide

upon a surgical treatment. Proetz's statement that aeration and drainage are the principal conditions for the curing of sinuses led in the surgery of sinuses to a new method of conserving the mucosa by creating the best possible conditions of drainage. Of course, even with such treatment a final result cannot be attained if we have not got acquainted with the background of this pathological state and if we have not removed it. Therefore only combined treatment, surgically maximal preservation of the mucosa with subsequent treatment of the primary factor are of essential importance for the therapy of such polysinusitis. However, when we say surgically maximal preservation of the mucosa, we do not mean that it is necessary to preserve a mucosa with irreparable changes, when it has turned into fibrous tissue or is polypoidly degenerated. Such states require the removal of the mucosa, or it will become a permanent focus and functionally completely inactive, even with the best drainage, and in this way it always remains a source of infection. We must admit that such polysinusal affections were the principal problem of rhinologists, and unilateral empyema or muco or pyocoele were successfully solved with a surgical procedure. If the inflammatory reaction is the result of allergy, anaemia, hypothyreosis or vagosympathic disbalance, surgical therapy, especially a radical one, can deteriorate the inflammatory state and will only rarely lead to sanation. In those obstinate cases of vasomotor rhinosinusitis which are resistant to conservative therapy the best solution is the cutting of the vidian nerve, which method was introduced into rhinology by Golding-Wood, and which we have modified as more suitable for rhinologists. By this operation, after cutting the Vidian nerve, we remove the parasympathic innervation and at the same time the inclination of the mucosa towards such exaggerated oedematous reactions, thus removing the consequences of a permanent closing of ostia of paranasal sinuses.

In our opinion, in cases of atrophic rhinitis, the method must be looked for by which we shall be able to excite to regeneration the last remaining functional elements of the mucosa. Thus we shall try to make the mucosa fit, at least for a decreased function, which will be more easily tolerated by the organism. Devastating procedures of radical operations should be avoided, because they cannot be justified from the aspect of to-day's pathophysiological and aesthetic point of view. The method of implanting of cancellous bone of crista iliaca into the nasal cavity, which has been applied at our clinic for 15 years, is most suitable to modern principles of rhinology. This implanted cancellous bone serves not only to make the nasal cavities narrow, but also as a biological stimulator of all the elements of the mucous membrane, which can still be excited and functionally enabled. Our clinical experiences speak in favour of this, because even after the partial resorption of cancellous bone the mucous membrane still remained injected and fresh, without any traces of atrophy or functional inactivity. On the basis of our experimental and clinical observations, obtained by studying the respiratory mucous membrane, it has been found that the lymphopoetic apparatus of the nasal mucous membrane is a very important element in the defensive function of this mucous membrane. In this way we can understand the power of resistance of the nasal mucous membrane and the paranasal cavities, as well as, in some cases, the deficiencies of balance of the respiratory epithelium itself.

In any case, this is a valuable observation, which must be further worked upon, and, on the basis of it, to-day's physiological and pathophysiological knowledge about the respiratory mucous membrane completed.

Modern physiology and pathophysiology of respiratory mucous membrane have given a considerable contribution in solving many rhinological problems, but, at the same time they have shown us the importance of a regular and purposeful surgical procedure in such conditions.

The respiratory mucous membrane, according to the reaction on various noxae, is unique, but it is most incorrect to change the course of the reaction with radical surgical operations without, at the same time, taking notice of the basic etiological factor.

If the function of respiration is primary and the most important not only for the nose but also for the functioning of many reflectory mechanisms, very necessary for the maintenance of physical and psychical integrity of the individuum, then the surgery of the nose and the paranasal cavities must be limited in such a way that this function is maximally preserved and maintained. For this reason it is my opinion, that our attitude in surgery in this respect must be changed. No modifications or methods of many various authors are necessary, but the procedure must be directed towards what is dictated by the pathological finding. That is why today it is not enough that an otorhinolaryngologist be only a clever surgeon from the technical point of view, but he must have mastered the whole pathophysiology of the given area in order to be able to perform the operation in the most correct and best way in the sense of functional surgery, whether of nose or paranasal sinuses.

### SUMMARY

The progress of physiology and pathophysiology of the respiratory mucous membrane makes it necessary for us to change many surgical operations of the paranasal sinuses in order to preserve the last elements of the mucous membrane which can be cured and made functional. Often the etiological factors of this diseased mucous membrane are general disturbances of the organism, which must be corrected together with the functional operations of sinuses.

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