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**THE FAVOURABLE INFLUENCE OF RHINOLOGICAL OR
PHARYNGO-RHINOLOGICAL OPERATIONS ON EXOPHTHALMOS
AND HYPERTROPHY OF THE THYROID
GLAND. A CONTRIBUTION TO THE TREATMENT OF
GRAVES' DISEASE.**

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It is long since attention was first drawn to the fact that exophthalmos and hypertrophy of the thyroid gland, simple as well as that accompanying Graves' disease, diminish of themselves, or even completely disappear after certain operations (galvano-cautery, incisions) in the nose, naso-pharynx and pharynx. Flack, of Freiburg, was the first¹ who drew attention to this fact—the same Flack whose theory of the reflex neuroses of nasal origin produced some stir about thirty years ago.

This author observed and published in 1886 (1) a case of a patient, aged seventeen, with exophthalmos, goitre, and other symptoms of Graves' disease, such as tachycardia, accelerated pulse (100), etc. All these symptoms, especially the exophthalmos, had disappeared after the galvano-caustic cauterisation of the hypertrophied turbinated bodies. It was striking that the ocular symptoms as early as the second day showed an enormous

¹ According to B. Fraenkel and Hoffmann, Hopmann was the first.

difference, the exophthalmos becoming less each time the turbinated body on the corresponding side was cauterised.

In the second case, reported in 1887 by Bobone (2), distinct improvement of the symptoms of Graves' disease followed cauterisation of the hypertrophied turbinated bodies.

The third case was published in 1888 by Hopmann, of Cologne (3): A woman, aged forty, showed exophthalmos, especially on the right side, with tachycardia; pulse 136; rhino-pharyngitis sicca and polypi of the nose, after the removal of which the exophthalmos disappeared, and the pulse fell to 92. Eighteen months later a slight relapse of the ocular symptoms ensued. In this case there was a striking diminution of the exophthalmos on both sides after the unilateral nasal operation.

The fourth case was observed by B. Fraenkel, of Berlin, in the same year (1888) (4). In this case also, as in Hopmann's, the Graves's disease was not typical, exophthalmos being absent (the so-called *forme fruste*); goitre, however, and tachycardia, pulse 120, were present. After cauterisation of the turbinated bodies the cardiac symptoms disappeared, and the hypertrophy of the thyroid gland diminished to a fifth of its former volume.

It was striking in this case that diminution of the goitre followed each time on the side corresponding to the side of the nose operated on. In this case the application of the constant current to the hypertrophied thyroid gland had no success.

In the same year (1888), George Stoker, of London, observed and described (5) two cases of simple goitre which after the cauterisation of the turbinated bodies diminished of itself, and disappeared entirely. The interest felt at this time in the question of the favourable influence of the nasal operations upon the symptoms of Graves' disease is shown by the fact that Professor Cozzolino, of Naples, chose this subject for a clinical conference (6).

Simultaneously, Jonas, in a special monograph devoted to the reflex neuroses of nasal origin, minutely reviewed the question (7); he, like Flack, looked upon Basedow's disease as a nasal reflex neurosis from the sympathetic nerves of the nose ("nasogene Reflexneurose des Sympaticus"). In 1891, Musehold, of Berlin, demonstrated in the Berlin Laryngological Society, and afterwards published (8), the following case: A female, aged forty-five, had suffered for a long time from Graves' disease with swelling of the thyroid gland and exophthalmos, especially on the right side. After the removal by means of the galvano-caustic snare of hypertrophy of the posterior end of the right turbinated body all

the symptoms diminished or completely disappeared. The goitre became much smaller, the circumference of the neck falling from 40 cm. to 36.5 cm. In this case the changes in the nose existed on the side corresponding to the ocular and glandular disturbances.

In the discussion upon this paper, Heymann, of Berlin, reported a case of Graves' disease with the characteristic "triad," *i. e.* exophthalmos, goitre, and tachycardia in a little girl, whose symptoms diminished after an operation for adenoids.

Platau, on the contrary, had not observed any effect after the nasal operations upon the course of this disorder. Landgraf, of Berlin, also looked sceptically at this question. Winckler, of Bremen (9), was of opinion that in exophthalmic goitre we cannot expect any improvement save after removal of gross changes obstructing the nose. M. Schmidt, in 1894 (10), reported two cases of Graves' disease with the characteristic "triad," in both of which after removal of the nasal changes by cauterisation of the turbinated bodies, sawing the nasal crests, all the symptoms disappeared. In but a few days a striking difference was observed, especially as regards the exophthalmos. The improvement continued—for instance, in the first case at the end of ten years the patient did not present any pathological changes. It is striking that in the second case, that of a physician, the patient himself observed every time before he became worse that he suffered from increased nasal disturbance, and after local treatment of the nose a striking improvement in the state of his health always took place.

In the same year (1894), Scanes Spicer, of London, published (11) a case of a nervous young woman with hypertrophy of the thyroid gland, pulse 140, tremor of the hands—that is, with all the symptoms of Graves' disease save exophthalmos (*forme fruste*), in whom, after an operation for nasal polypi, a considerable improvement took place. This author mentioned also three other cases of simple hypertrophy of the thyroid gland, which were cured after excision of nasal polypi.

Spencer Watson (12) also observed an analogous case in a patient, aged thirty-five years.

Last year (1910) Rudolf Hoffmann, assistant to Professor Numayer, of Monaco, after about seventeen years of silence, again returned to this question. He published (13) five cases of Graves' disease, in which the favourable influence of nasal operations upon the symptoms, especially exophthalmos, was observed. In the *first case*, that of a female, aged twenty-one,

with the typical symptoms of exophthalmic goitre, after cauterisation of the right turbinated body the exophthalmos diminished, the circumference of the neck became less, and pulse fell from 120 to 90. After cauterisation of the left inferior turbinal the same effect was observed on the left side. It is characteristic that in this case nasal symptoms were wanting. The author had performed the operation (cauterisation of the turbinated bodies) only in order to produce the effect on the nervous sensory ends in the mucous membrane of the nose, and therefore on the vaso-motor centres. In the *second case*, also a female with Graves' disease (accelerated pulse, goitre, and exophthalmos intermittens), the author also cauterised the left turbinated body, after which the pulse fell from 105 to 98 and the circumference of the neck diminished.

Case 3: A male, aged twenty-two; exophthalmos followed lifting something heavy; goitre for several years; pulse 140. Slight hypertrophy of the turbinated bodies as well as tuberculum septi. Cauterisation of turbinal and septum on the right side with considerable effect (exophthalmos on right side smaller, the circumference of the neck less; pulse 120). After the same operation on the left side the same effect followed as regards the exophthalmos, the circumference of the neck became less and the pulse fell to 105.

Case 4: Young female who from childhood had suffered from difficult respiration and exophthalmos, which disappeared on reaching puberty but returned again after parturition. After cauterisation of the turbinated bodies, as well as crista septi first on the right side, then on the left, the right and afterward left eye became less convex by 3 mm. In this case there was no hypertrophy of the thyroid gland.

Case 5: A young female, aged twenty-one, with exophthalmos of a high degree on the right side; after two cauterisations of the right turbinated body a considerable retraction (4 mm.) of the bulbus ensued. This author, besides, mentions that in more than twelve cases of simple goitre (hypertrophies of the thyroid gland) he has obtained a considerable diminution ($1-2\frac{1}{2}$ cm.) in its volume after nasal operations.

Finally, this year (1911) Stasinski, of Posen, reports (14) a case of a female with unilateral protrusion of the bulbus with slight exophthalmos, slight tachycardia, and disagreeable sensation in the thyroid region. There was frequent inflammation of the palatine tonsils, and they were excised, after which all symptoms disappeared, the eyes, formerly in the form of protrusion,

sinking so as to give the picture of paralysis of the sympathetic nerve.

The author not long ago had occasion in two cases of Graves' disease to confirm the observation that ocular protrusion increases after catching cold, *i.e.* acute catarrh of the nose. Till now all were cases of the favourable influence of nasal operations on the symptoms of Graves' disease. Quite the contrary was reported by Semon (15). After removal of nasal polypi, asthma disappeared, but the exophthalmos ensued on the right side.

Charsley (16) reports a similar case of exophthalmos after cauterisation of the turbinated bodies of the nose.

I have personally observed six cases of undoubtedly favourable influence of the nasal or naso-pharyngeal operations on the symptoms of Graves' disease. They are as follows:

Case 1.—A widow, aged thirty-six. A moderate goitre for fourteen years, with headaches, lachrymation, weakness, sweats, coughs, dyspnœa, tremor of the hands, palpitation, finally exophthalmos of the greater degree, with von Graefe's and Stellwag's symptoms; the general state miserable. A very nervous patient; pulse 120. In the nose there was considerable hypertrophy of the turbinated bodies, especially on the right side, with difficulty of breathing through the nose. Both turbinated bodies were cauterised, first the right and afterwards the left, with immediate improvement of the symptoms, especially as regards the exophthalmos. After some weeks all symptoms of Graves' disease (exophthalmos, goitre, tachycardia, etc.) completely disappeared, the general as well as nervous state got much better, and the pulse fell to 88.

Case 2.—Female, aged twenty-six. The older sister suffered from asthma. The general state bad—sweats, chlorosis; for two years considerable exophthalmos, with von Graefe's and Stellwag's symptoms, especially on the right side. Considerable hypertrophy of the thyroid gland, especially on the right side. Palpitation and troubles in the region of the heart; pulse 120, with great nervousness. In the nose and naso-pharynx there was chronic diffuse catarrh. The right inferior turbinal was hypertrophied. As the patient objected to operation, I applied a systematic treatment with vibratory massage of the mucous membrane of the nose and naso-pharynx. After thirty *séances* considerable improvement could be observed in ocular symptoms (exophthalmos much less) as well as in the glandular symptoms (diminution of the goitre—the circumference of the neck from 40 cm. fell to 38.5), with improved general symptoms (pulse 84).

Case 3.—Female, aged forty-five. Very nervous (hysterical), in the period of climacteric, with typical “triad” of Graves’ disease (exophthalmos, goitre, tachycardia). In the nasal as well as naso-pharyngeal cavities there were symptoms of chronic atrophic catarrh, anosmia and ageusia. Here also, as in Case 2, vibratory massage of the mucous membrane of the nose and naso-pharynx, methodically applied for a month, produced considerable amelioration in all the symptoms; smell and taste returned. In the last three cases we had to do with only one principal symptom, namely, exophthalmos, but it was of the highest degree.

Case 4.—Boy, aged five. Enormous exophthalmos, especially in the right eye, with von Graefe’s symptoms—salivation, snoring during the night, open mouth, idiotic expression, aprosexia nasalis. In the naso-pharynx hypertrophy of Luschka’s tonsil (the so-called adenoid vegetation), as well as hypertrophy of the palatine tonsils, especially on the right side. Tonsillotomy on the right; removal of the adenoid vegetations by means of Gottstein’s knife. Immediately after the operation an enormous difference was observed in the appearance of the right eye (exophthalmos very much diminished). After a year quite healthy; eyes normal, the appearance quite different, the general state excellent. He developed physically and intellectually; the idiotic appearance disappeared; he learned the alphabet easily.

Case 5.—Boy, aged eight. Enormous exophthalmos for three years, which generally increased with every catarrh in the nose. Pavor nocturnus, palpitation, obstruction of the nose, snoring; aprosexia nasalis; he learns with difficulty. In the naso-pharynx there were many adenoid vegetations. After removal with Gottstein’s knife immediate and great improvement, especially as regards the exophthalmos, ensued. Six months later normal appearance; no trace of exophthalmos. He was quite healthy and learned well, had good memory.

Case 6.—Boy, aged thirteen. Exophthalmos with von Graefe’s symptoms—enuresis, palpitation, aprosexia nasalis. Considerable nasal obstruction due to adenoid vegetations. Operation: Excision by means of Gottstein’s knife, also, as in the above two cases, without general narcosis. On the third day after operation enormous difference in the appearance of the eyes, to which the mother herself drew attention. Since the operation also there was neither asthma nor enuresis. Further, the general state, as well as local, became better and better; the eyes normal; asthma and enuresis nocturna completely disappeared. The boy learns much better and is less apathetic.

We see from the above report that there exist in the literature more than twenty cases of simple hypertrophies of the thyroid gland, or exophthalmos, and other symptoms of Graves' disease, to which undoubted security is given by the well-known names of M. Schmidt, B. Fraenkel, Hoffmann, etc. Improvement, and even in many cases complete recovery, followed the performance of different operations in the nose or naso-pharynx.

What are the changes in the upper respiratory tract which are seen in Graves' disease? There were hypertrophic changes in the inferior turbinated bodies (B. Fraenkel, M. Schmidt, and one of my cases), less seldom in middle turbinal (Flack); nasal polypi have also been observed (Hopmann), and finally changes in the nasal septum (tuberculum, [Hoffmann], and crest [M. Schmidt]). In two cases (Hopmann and one of my cases) there existed on the contrary atrophic changes in the mucous membrane of the nose and naso-pharynx. Finally affections of the accessory sinuses of the nose have been noted (Hopmann).

Sometimes also we have to do with simple diffuse chronic catarrh of the mucous membrane of the upper respiratory tract (Hoffmann, one of my cases). Of other changes adenoid vegetations in the naso-pharynx have been recorded (Heymann, three of my cases), as well as hypertrophy of palatine tonsils (Statinski, one of my cases).

What were the methods applied in these cases? In the most cases where there existed hypertrophic changes on the turbinals cauterisation was adopted, superficial in order to avoid secondary cicatrices, which might cause reflex symptoms (Hoffmann); sometimes galvano-caustic snare was tried (in polypoid turbinals [Musehold], or real polypi [Hopmann]). Less frequently cutting operations were used—sawing of the crista septi (M. Schmidt), removal of adenoid vegetations (Heymann—my own three cases), as well as tonsillotomy (Statinski—one of my cases). Finally, in two of my cases, with diffuse chronic simple, as well as atrophic catarrh of the mucous membrane of the nose and naso-pharynx, I applied successfully vibratory massage (Braun) to the mucous membrane (Laker).

The favourable influence of the nasal therapeutic methods and operations in the course of Graves' disease is shown in three principal ways:

(1) The most striking is the influence of these operations on the ocular symptoms, especially on the exophthalmos with von Graefe's and Stellwag's symptoms. In these cases we receive

striking improvement (diminution of the exophthalmos to 4 mm. Hoffmann), or even, as in three of my cases, a complete return to the normal. In Hoffmann's case this amelioration did not appear immediately after the operation, but on the second day. With this, however, my observations do not agree. In my two cases I had occasion to notice an immediate and striking difference in the appearance of the eye after the excision of adenoid vegetations or tonsillotomy (in only one case this difference took place on third day). Naturally in the following days this amelioration became still more evident.

(2) The favourable influence of nasal respiratory naso-pharyngeal operations on the hypertrophy of thyroid gland (goitre). Contrasting with the ocular symptom this showed itself much later (after a week, Hoffmann), and generally it was not so striking, at least it was so in my observations, except once. Hoffmann, on the contrary, has observed a considerable difference (diminution in the circumference of the neck fell $2\frac{1}{2}$ cm.). There has also been noted complete recovery from the goitre after nasal operations (M. Schmidt, G. Stoker).

(3) Finally, the favourable effect of these operations on the other symptoms of Graves' disease (tachycardia, tremor, etc.).

Here also relatively quickly amelioration can be remarked—the pulse falls from 140–120 to 88, or even 84 (Hoffmann, as well as my cases). It is also very important to know how constant this favourable effect is. In most cases it is constant, although not always, as for instance in one of Hoffmann's cases, where after a certain time relapse of the symptoms of Graves' disease ensued.

In two cases of M. Schmidt, on the contrary, the recovery was complete and of long duration (in one case there was no relapse after ten years). In most of my cases also the result persisted (half to one year without relapse).

In this manner, from the above cases of trustworthy authors which I have collected from the literature, as well as from my own personal experience, I think I am authorised to maintain that in every case of Graves' disease (with the characteristic "triad" of the symptoms, *i. e.* exophthalmos, goitre, and tachycardia), or in the so-called *forme fruste*, *i. e.* without the ocular symptoms, finally, in simple vascular swellings (hypertrophies) of the thyroid gland (goitre), we must minutely examine the upper respiratory tract, especially the nose and naso-pharynx, and in the event of any pathological changes being discovered, immediately submit them to the local treatment, namely operation.

Hoffmann goes perhaps a little too far when he maintains that even in the absence of any changes in the nose we should simply experimentally perform superficial cauterisation of the turbinals, and he explains the favourable effect of this operation upon the symptoms of Graves' disease by production of shock. I have already mentioned that Winckler is quite of the opposite opinion.

We pass now to the explanation of the effect of nasal or nasopharyngeal therapeutic methods (operation) on the ocular as well as on the glandular and general symptoms of Graves' disease. Flack, from his theory of reflex neuroses of nasal origin, regards his case as a vaso-dilator reflex neurosis, analogous to certain forms of asthma and headache.

Böhme, an adherent of Flack's theory, supposes that hypertrophies of the nasal mucous membrane can induce irritation of the sympathetic nerve, so as to produce goitre and exophthalmos.

George Stoker explained the favourable influence of nasal cauterisations upon simple goitre in his two cases by reflex irritation effected by cauterisation of the vaso-motor apparatus, which causes secondary spasm of the blood-vessels of the thyroid gland and so diminution of its volume.

Jonas, a fanatical adherent of Flack's theory, regards also exophthalmos and Graves' disease as "a nasogenic reflex neurosis of the sympathetic system."

Hoffmann, the author of the best paper on this subject, explains the disappearance of the symptoms of Graves' disease after simple cauterisation of the mucous membrane of the nose, even in the absence of obstructing and irritating factors, by a combination or summation of the irritations acting on a labile vaso-motor centre, which, contracting, acts on the smooth musculature, including the extra-vascular smooth muscles, especially of the corresponding half of the head.

Finally, with us (Poland), Stasinski believes that the pathological predisposition of the sympathetic nerve is the primary cause of Graves' disease, and that inflammation of the tonsils often precedes it. This author draws attention also to the fact that the nasal abnormalities sometimes cause the exophthalmos. Examination during recent years has proved that the superior ophthalmic vein communicates not only with the anterior facial vein, but also with the ethmoidal veins, and therefore with the superior parts of the nasal cavities; further, that the inferior ophthalmic vein joins with the deep nasal veins and the veins of the maxillary sinus.

This author not long ago had occasion to observe in two cases of Graves' disease an increase in the exophthalmos after acute catarrh of the nose.

Other authors (M. Schmidt, B. Fraenkel, etc.) in their cases have stated only the fact of the undoubtedly favourable influence of nasal operations upon the symptoms of Graves' disease, but without entering into an explanation of this fact.

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THE TEACHING OF OTO-RHINO-LARYNGOLOGY IN FRANCE.

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MEDICAL education in France is vested in the Faculties of the seven Universities of Paris, Montpellier, Nancy, Lyons, Bordeaux, Lille (where there is also an extra-mural Faculty), and Toulouse; in four schools with complete curricula (Marseilles, Nantes, Alger and Rennes); and in twelve preparatory schools.

In none of these centres is there a University Chair of oto-rhino-