THE OPERATIVE TREATMENT OF MALIGNANT
TUMORS OF THE NOSE.*

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The treatment of malignant growths which develop in the cavities of the body is at this time exclusively surgical. Although we have been able to influence and cause to disappear, localized tumors situated on the surface of the body by means of the Röntgen and radium rays or by fulguration, we are still unable to use these in the treatment of the malignant growths which lie in the deeper parts. In spite of the energetic efforts to discover the etiology and pathogenesis of carcinoma, which have taken place in the last few years, the attempts along this line have led to no results which allow us to hope that the near future will see a non-operative specific treatment. The different carcinoma sera and other medicinal treatments are unfortunately so far to be designated only as slight advances in the therapy of malignant tumors. Even the arsenic treatment, which has been frequently recommended for sarcomatous tumors, leaves us usually in the lurch, although it has given good results in isolated cases, especially of lymphosarcoma. Although in the malignant nasal tumors which are usually of such bad prognosis it would be very desirable to have a specific therapy, for the present we have no such method at our command, and the possibility of cure rests upon a radical operation.

In the very earliest times the attempt was made to develop an operation for this purpose, and the number of methods in use has become a very great one. At this place I will mention only those methods which completely lay bare the origin and extent of the tumor and allow its thorough extirpation. For this reason I must refrain from discussing the methods of Hippocrates, Garengot, Wutzer, Rouge, Furneaux-Jordan,

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and Castex, which are confined to a splitting and reflection of the cartilaginous nasal framework and do not guarantee a complete view of the field of operation.

As preliminary operations for those tumors which grow out of the deeper parts of the nose or accessory sinuses, come next in consideration those extensive operations which are also used in malignant tumors of the upper jaw, the temporary or permanent resection of the upper maxilla. Both operations are extraordinarily bloody and one is accustomed, in order to overcome the danger of aspiration-pneumonia due to the excessive hemorrhage, to make use of the preventative tracheotomy with temponade of the air passages and even the ligation of the common or external carotid, and, as of late, the intubation of Kuhn. The total resection of the upper jaw, as first performed by Gensoul in 1827, has been, in regard to the incision, modified in many ways, especially by Velpeau, v. Langenbeck, Weber and Kocher, while the division of the zygoma, the union of the upper jaw with the nose and frontal bone, and the sawing through of the hard palate, on the whole, remains the same. The mortality in total resection of the upper jaw amounts to, according to Krönlein, 21.5 per cent, and, according to König, to 30 per cent.

The v. Langenbeck osteoplastic partial resection of the upper jaw, in which the incision passes through the soft parts of the cheek, exposes the base of the skull through a temporary laying back of the upper jaw with removal of the palatal plate and the alveolar process. There are numerous modifications, of which I wish here to mention only those which take their way through the mouth; one can differentiate by the latter an intermaxillary and a palatal route.

The palatal route was first used by Nelaton, who, after splitting the soft palate and cutting through the mucoperiosteum of the hard palate in the middle line with subsequent resection of the posterior two-thirds of the hard palate, attempted to penetrate into the deep parts of the nose and nasopharynx. In like manner Gussenbauer operates, elevating the mucoperiosteal covering of the hard palate after penetration in the midline to both sides as far as the alveolar process, and then removes the palatine process and the horizontal plate of the palate bone; that is, the floor of the nose and maxillary sinus. After removal of the tumor the two flaps which have been pushed aside are brought together with sutures.

The entrance made by the Nelaton-Gussenbauer method is, according to von Bergmann's opinion, not sufficient for those tumors of the nose and naso-pharynx which come down from the base of the skull. Those oral methods which consist of a temporary resection of the alveolar process in connection with the hard palate, allow of a more free laying bare of the field of operation.

As founder of this course, we must look to Chalot, who, in the year 1886, first performed this operation. Habs, who in 1898 employed the Chalot method for the extirpation of an angio-myxofibroma, which was growing from the base of the skull, describes the method, shortly, as follows: After severance of the cul-de-sac of the upper lip with the alveolar process between the two first molar teeth, the soft parts are elevated with an elevatorium as far as the spina nasalis anterior-inferior and to the floor of both nasal cavities. Then the mucous membrane of the floor of the nasal cavities is pierced with a pointed scalpel.

After introducing two Nelaton catheters into the mouth, through the nose, an end of a Gigli saw is attached to the end of each and the two are then drawn from the nose and the septum is sawed through, from behind forward, near the floor of the nose. Then the operation proceeds on the reclining head. After supporting the lower jaw by means of a Gutsch support, the hard palate is split inferiorly on both sides from the socket of the removed cuspid-tooth along the alveolar border to the attachment of the soft palate (profuse hemorrhage). Quickly the processus alveolaris between the alveoli of the cuspid teeth is separated from the nasal cavity, right and left, whereupon the entire hard palate, which is only held by the soft palate, can easily be depressed upon the tongue. After removal of the tumor mass the hard palate is replaced and fastened by silver sutures.

The method of temporary resection of the palate published by Partsch in 1898 differs from the procedure of Chalot principally in that with the palatal plate, not only the anterior part of the alveolar process, but the entire processus alveolaris is turned downward. It is performed in the following way: Transverse incision through the mucous membrane to the fold of transmission of the upper lip; retracting upwards of the soft parts; piercing the mucous membrane of the nose at the apertura piriformis; at the same time, chiseling with broad

chisels through the septum, the middle and facial walls of the maxillary antrum in a horizontal direction, over the floor of the nose and the antrum; turning back the entire hard palate with the alveolar process upon the tongue; after extirpation of the tumor, replace the palate in its normal position, and fix by suturing the mucous membrane. In 27 cases collected by Löwe and in part operated by himself after Partsch's method, the bones were united at the previous point of separation, although in part requiring a long time.

While Chalot and Partsch aim at the laying bare of the field of operation by means of the turning back of the palate, Kocher accomplishes the same end by separation of the horizontal parts of both upper maxillae by the intermaxillary path. He divides the upper lip by means of a perpendicular incision from the nasal aperture, running downwards, and then cuts through the fold of transmission of the upper lip to the bone. Corresponding to the last incision, which runs horizontal, the connection of the alveolar process and the hard palate with the facial and median walls of the antrum is cut through by means of broad chisels. If one then cuts through the hard palate and the alveolar process, in the midline, between the two superior central incisors, with a chisel or Gigli saw, both of the horizontal halves of the upper jaw may be forcibly pulled apart, and one obtains a good view of the nasal cavity and the naso-pharynx. After cleaning out the tumor mass, the union of the processi alveolares in the midline follows by means of metal suture, the hard and soft palates are then sutured, and the cleft in the lip is closed also by means of sutures. The cosmetic effect by the Kocher, as by the Chalot-Partsche, method is good; by both operations the hemorrhage, as a rule, is very great.

The nasal methods of laying bare the malignant tumors, in which, as already indicated, the operation involves not only the cartilaginous nose, but especially the bony nasal walls, can be divided, according to Kümmel, into those where the entire nose is cut and reflected, and those which require a temporary or permanent resection of the upper nasal region alone.

According to Linhart the nose is split along its posterior part. in the midline, the nasal bone and the processus nasalis of the upper jaw is detached by a chisel or a saw at the point of attachment to the frontal process, and thereupon the entire half of the nose is pulled aside without previous detach-

ment of the skin covering, while one causes a fracture in the region of the lachrymal bone.

By the method of von Chassaignac, carefully described by v. Bruns, the skin-periosteal incision is made from the inner canthus of the eye, in a circular direction over the ridge of the nose and its attachment, back to the ala nasi of the first side. The bony parts of the nose and the septum are cut through with a saw or chisel and then the entire nose is turned back to the opposite side.

According to the method recommended by Ollier, the nose remains attached to its lower line of insertion. The section runs on both sides from the root of the nose along the attachment of the outer nose to the line of attachment of the alae nasi. Section of the nasal bone, the processi nasales of the superior maxilla and of the septum in the plane of this incision by means of the saw, whereupon the nose usually may be turned downward without severing the cartilaginous portion. The cosmetic result in this operation is said to be not always very favorable.

Methods have been described by v. Langenbeck, G. Killian, A. Barth, Gussenbauer, Küster, Winckler and more recently by Moure and Brockaert which aim to lay bare the upper and posterior portions of the nose by means of a temporary or permanent resection of the nasal bone and the processus nasalis of the upper jaw. v. Langenbeck* made an incision from the middle of the glabella to the end of the nasal bones and from there along the apertura piriformis to the alae nasi. The skin flap thus outlined is dissected back, care being taken not to injure the periosteum; then the nasal bones are separated from each other near the septum, and the base of the processus nasalis is cut through with a saw deep into the orbit, from within outward. The os nasale and the processus nasalis of the superior maxilla, which remain joined to the mucous membrane and periosteum can be broken outward and later replaced.

G. Killian (and similarly A. Barth) makes a cutaneous incision in the median line from the glabella to the middle of the nasal ridge; after the periosteum has been retracted in the frontal region, the frontal sinus is opened, a probe inserted into its duct, and this is followed by detachment of the

*See Kümmel, *Handbuch der praktischen Chirurgie*, by v. Bergmann, v. Bruns and v. Mikulicz, Vol. i, p. 833.

nasal bone from the frontal bone without disturbing the skin in this region. The os nasale and the skin are turned outward and, finally, the portion of the nasal process which still remains is chiseled away from the frontal bone as far as the probe. Winckler goes still further to the side and turns the mucous membrane-periosteo-bone flap downward.

Inasmuch as the access to the ethmoid cells by this operation is a very small one, G. Killian, especially in connection with the radical operation on the frontal sinus, anticipates the laying bare of the whole ethmoid labyrinth with the permanent resection not only of the nasal bone, but also most of the processus nasalis of the superior maxilla.

According to the method of Gussenbauer, who lays bare the upper nasal segment on both sides, the incision runs from the middle of one eyebrow, along the orbital border, to the proc. nasal. max. sup., then straight across the nose, corresponding to the borders of the nasal bones, and finally on the other side, upwards in the same way. Both proc. nasal. max. sup. are cut through with a sharp chisel horizontally as far as the margo orbitalis, then frontally in continuity with the lachrymal bones, the lamina papyracea, the proc. nasal. frontalis, and finally the lamina perpendicularis ethmoidalis to their junction with the vomer. The whole flap of soft and bony tissues may now be turned upward. If, as Winckler proposes, a perpendicular incision is made on both sides at the ends of the incisions in the eyebrows, the anterior walls of both frontal sinuses may be temporarily resected in one piece, together with the above flap, and these sinuses opened at the same time.

According to the method of Küster, which is a modification of Chassaignac-v. Brun's operation, the cartilaginous nose is separated from the bony by a cross incision, the former is left in situ, the latter detached according to the Chassaignac-v. Brun method and turned to the side.

In the method published by Moure in 1902, a skin incision is made from the medial end of the eyebrow downward to the nasal opening, ending in the upper lip at the height of the insertion of the ala nasi. The soft parts are detached from the nasal bone and the nasal process of the upper jaw as far as the lachrymal bone, care being taken to prevent an injury to the cutaneous part of the ductus nasolacrimalis which would result in a fistula. A part of the nasal process of the upper jaw, a part of the lachrymal bone, the nasal bone, the spina

nasalis and the spina frontalis are resected. In this way a large access to the ethmoid is obtained, and it is possible to remove this in toto. After resection of the ethmoid, diseases in the region of the sphenoid can be attacked. After primary closure of the wound, only a slight depression at the inner canthus remains. (Abst. in *Internat. Centralbl. f. Laryngol.*, Vol. XIX, p. 327.)

In 1905, Brockaert extended Moure's method to the sphenoid cavity by detaching the periosteum from the facial wall of the upper jaw and reflected it with the soft part upward. After resection of the facial and medial walls of the sphenoid and the inner quarter of the orbital border, a tumor, a sphenoid endothelioma, could be easily removed. Union of the lips of the wound eight days later. (*La Presse Otolaryngol., Belge*, No. 3, 1905.)

Naturally, I have not been able to describe all the numerous combinations and modifications, but only the principal methods which are used in extirpating malignant nasal tumors. All the above methods, with the exception of the Chalot-Partsch, have in common that they cause a lesion of the continuity of skin of the face and result in a scar or a greater or less cosmetic defect. Most of them are very *bloody*, some, especially the Chalot-Partsch and the Kocher, are accompanied by an enormous hemorrhage, which, according to Kümmel, make a prophylactic tracheotomy and the introduction of a tampon-canula very advisable.

About two years ago, as most of my German colleagues are aware, I published a method which obviates the cutting of the skin of the face and materially lessens the hemorrhage, while still allowing the field of operation to be made completely visible. The method was an *oral* one, in which, after the bone had been laid bare subperiosteally, the whole facial and medial wall of the antrum as well as a part of the nasal bone and of the proc. nasalis of the superior maxilla were permanently resected. For the benefit of my non-German colleagues, I will here describe the operation in detail. It is based on the operation for old, chronic empyema of the antrum, which was described in the *Archiv. f. Laryngol.*, 1905, Vol. XVII, part 2, and is performed as follows:

Unless the administration of ether is contraindicated for other reasons, we use the morphine-ether narcosis (dose of morphine for adult usually 0.014). In addition, to reduce the

hemorrhage, a cocain-adrenalin tampon, in the form of strips of gauze, shoved as far back and up as possible into the nasal cavity, is recommended. Several strips of gauze leading out of the mouth are placed between the last teeth of the side to be operated, and the upper lip is drawn upwards and outwards by two blunt hooks. An incision is made through mucous membrane and periosteum down to the bone, which begins above the wisdom tooth, in the fold of transmission of the upper lip, runs forward, horizontal to the alveolar process, cuts through the frenulum labii superioris and extends 2-3 cm. further in the same direction over onto the other side. The soft parts are pushed upwards with the raspatorium and held by two four-pronged hooks until not only the superficies facialis maxillae superioris and the region of the apertura piriformis, but also the lower part of the nasal bone and the proc. nasal. max. sup. near the margin of the lower and inner orbital border are laid bare. Only when this has been thoroughly accomplished can a sufficient access to the ethmoid be obtained. This strong upward retraction of the soft parts occasionally tears the mucosa of the meatus at the apertura piriformis. The nervus infraorbitalis is drawn upward with the rest of the soft parts.

If by previous rhinoscopy it has been found that the tumor has not destroyed the medial antrum wall and grown into the antrum, before the antrum is opened, the mucosa, starting at the lateral margin of the apertura piriformis, is stripped from the lateral wall of the lower and middle meatus by means of a flat elevator which is about 6 mm. broad and has an end curved at an obtuse angle. This stripping, which must be done very carefully, so that no hemorrhage into the nasal cavity is caused by lesion of the mucous membrane, extends in adults from the apertura piriformis 4-5 cm. backwards to the posterior antral wall. If the lower turbinate still exists, it is cut off at the crista turbinalis with a pair of strong nasal scissors and a piece of gauze is inserted between the detached mucosa and the bone, in order to check the moderate hemorrhage.

During the opening of the antrum from the canine fossa, which now follows, it is important not to remove the subjacent mucosa with the bone, but, while taking care not to injure the former, to remove a piece of bone at least the size of a 10 pfennig piece by means of superficial chiseling and

slender bone forceps. A premature hemorrhage into the antrum or nose is thus prevented. If the presenting and usually thickened mucosa is then excised, the resulting hemorrhage can easily be controlled by quick introduction of tampons. After the facial wall has been completely resected, the mucosa of the entire antrum with all of its recesses is carefully removed. This is necessary, since in most cases the antrum is involved in the process either by an extension of the tumor from the nose or by a chronic, purulent inflammation of the mucosa.

Next, the nasal wall of the antrum, with all of its processes, as far as the apertura piriformis, is completely removed with Luer's forceps and chiseling as far as the posterior wall of the cavity, so that the antrum is separated from the meatus only by the mucosa of the lateral nasal wall. At the same time, the lower part of the nasal bone and of proces. nasalis max. super. is resected in the neighborhood of the lachrymal bone.

So far, and this seems to me of the greatest importance, the entrance of large amounts of blood into the nasal cavity and from there through the choana into the remainder of the air passages has been prevented. If it is desired to prevent the downward flow of blood during the subsequent removal of the tumor, this can be accomplished by the introduction of a firm tampon into the naso-pharynx. Usually, however, at this point the patient is no longer in deep narcosis, so that we can with certainty count upon the presence of reflex swallowing of the blood and no longer need fear its aspiration. From now on, it is desirable to operate as quickly as possible. If the mucosa at the apertura piriformis has not been ruptured during the upward reflection of the soft parts, a puncture is made in the lateral nasal wall, at its anterior end, near the floor, a blunt-pointed knife or pair of scissors is introduced through the opening, and the whole wall is quickly excised and removed in toto. If the tumor springs from the middle meatus or the lower turbinal, it is removed for the most part with the mucosa. After the removal of the medial antral wall, the entire interior of the nose is broadly exposed, and it is an easy matter to cleanse the ethmoid thoroughly with conchotom and curette, and to lay bare the anterior wall of the sphenoid cavity completely and resect it. For this part of the operation, the use of artificial illumination by means of

the head-light or reflector is very desirable. A view is obtained of the naso-pharynx through the choana, and tumors of the pharyngeal vault can easily be attacked and thoroughly removed, especially if the posterior part of the septum is resected or pushed to one side.

The survey of the entire field of operation allows nothing further to be desired, as even entrance to the frontal sinus is easy after the anterior ethmoid cells have been removed. In the cases of extension of the malignant process to the sinus frontalis, it is urgently recommended that the anterior wall of this cavity be resected—incision through the eyebrow and retraction upwards of the soft part—in order to remove all diseased tissue.

After careful removal of all suspected soft and bony parts—whereby care in the region of the lamina cribrosa and lamina papyracea is demanded in order not to injure the dura or the periosteum of the orbit—the wound is tamponed with iodoform gauze and the oral mucosa sewed. Applications of Burrow's solution or boric acid solution are made to the operated side, and lavage of the mouth with boric acid solution. After 3-4 days, the tampons are removed through the meatus, and on the 4th or 5th day, the stitches are removed. After removal of the tampons, dermatol and, later, boric acid are insufflated. From the 10th day on, lavage with boric acid solution by the patient, by means of a wide, curved glass tube, until the secretion ceases. Covering of the wound is accomplished by granulations springing up from the bare bone, which are gradually epidermized from the nose. It should be noticed here, that permanent disturbances of the lachrymal apparatus, caused by resection of the greater portion of the ductus naso-lachrymalis, which occurs during removal of the lateral nasal wall, has never been observed.

Furthermore, loss of teeth in consequence of severing their nerves and vessels, never happens. However, it is better not to remove the facial antral wall up to the very bottom of the alveolus.

Altogether, I have used this method seven times for extirpation of tumors and twice have used it with very good results for the radical operation of very severe simultaneous empyema of the antrum, ethmoid and sphenoid.

As to the results of the seven operations for tumors, I may be allowed to report briefly here: The first five cases have al-

ready been published in the *Muensch. med. Woch.* (1906—No. 20), and in the *Archiv. für Laryng.* (Vol. XIX, part 3). Of these, Case 2 of my first publication is excluded from our discussion because it was a case of a nasopharyngeal fibroma arising from the fissura pterygopalatina for whose extirpation our operation is not suitable.

In Case 1 (Antone R., age 23), small-cell sarcoma, arising in the ethmoid labyrinth, there appeared, as already stated, a small recurrence after two months, which, since it hung down from the region of the nasopharynx, was removed with a galvano-cautery snare. The patient, who refused further treatment, and put himself in the hands of quacks, died about a year later, of the disease.

The second patient (John D., age 41), large epithelial carcinoma, which sprang from the middle meatus, and had destroyed not only the upper portion of the medial antral wall and a portion of the antral roof, but also the greater portion of the lamina papyracea of the ethmoid. I was able to present this patient a year and a half after the operation in my course for physicians, entirely free from recurrence and without any symptoms. Three months later, however, he returned with a recurrence located on the floor of the nose, which was removed after reopening of the oral opening. The course so far (3 months after second operation) has been favorable.

In the third case (Mrs. Marie D., age 65) there was an extensive endothelioma which had destroyed the facial and medial walls of the antrum and completely filled the nose and antrum, bulging the cheek forward. Furthermore, the bone of the alveolar process was already destroyed in its posterior half as well as that of the adjacent floor of the antrum. The tumor originated in the middle ethmoid cells. The case resulted in normal healing of the operation wound, and so far, one and three-quarter years later, there has been no recurrence.

Case 4 (Mrs. Emma Z., age 73), large, medullary carcinoma, which originated in the most posterior ethmoid cells and extended into all the accessory cavities and through the lamina cribrosa into the cranial cavity. Three days after the operation, she died of meningitis following injury to the dura during the removal of the tumor from the floor of the anterior cranial fossa.

Case 5 (Joseph F., age 32), spindle-cell sarcoma, which sprang from the lamina interna of the processus pterygoideus, penetrated into the ethmoid and sphenoid cells and filled the left nasal cavity from its floor to the lamina cribrosa of the ethmoid. Two months later there was a recurrence, which was operated five months after the first operation. In spite of thorough exenteration of the cavities, with removal of almost the entire lower and medial wall of the orbit, tumor masses soon reappeared. Treatment with arsenic and Roentgen rays had no effect. As a radical removal of the tumor was no longer considered possible, treatment was limited to palliative measures, such as the cautery snare and point.

Case 6 (Lina St., age 8), fibrosarcoma arising from the lamina cribrosa of the ethmoid, pushing the septum strongly to the other side and entirely filling the left nasal cavity. Here, too, the tumor recurred in two months. At the second operation, the medial and lower walls of the orbit, with the exception of a spur on the lower border of the orbit, were resected and the greater part of the posterior antral wall and the posterior part of the floor of the antrum were removed. Nevertheless, after scarcely two months, tumor masses again came down from the nasal roof. Strangely enough, the histologic examination of the tumor masses extirpated at the second operation and that of the *second recurrence* showed a change in the character of the tumor. Whereas the earlier examinations had resulted in the diagnosis of fibrosarcoma, the later ones gave the picture of a fibroma, in places rich in cells.

If the results of the above operation are examined as to their permanency, it will be seen that they are not especially brilliant. Only one of the six cases remains thus far (1¾ years) free from recurrence. Furthermore, in cases 2 and 6, the course after the second operation allows the possibility of a permanent cure. Also, it must be noted that in all of our patients the cases were far advanced and by their extent, their histologic characters, and their origins, made the prognosis very unfavorable. I may be permitted in this connection to cite Kümmel, who wrote on malignant tumors of the nose in the *Handbuch f. Laryngologie* and in the *Handbuch du praktischen Chirurgie*. He says: "The prognosis of sarcoma is absolutely dependent upon whether or not the tumor can be radically removed. If that is impossible, the prognosis

is entirely bad. If it is possible, the prognosis and results vary widely; according to the location, age, and histologic character of the tumor. The worst prognosis is in the case of *round-cell* sarcoma, especially the small-cell variety (Case 1), which are the most suspicious and recur with greatest frequency. The few cases in the literature which have been followed for a long time ended almost invariably in death, although it was frequently possible to give the patient relief for a long time by repeated operations. The spindle-cell sarcomata and the fibromata are as a rule less malignant, yet the writer had inoperable recurrences of these also" (Cases 5 and 6).

"In tumors arising from the roof of the nasal cavity, the prognosis is very grave on account of the danger of entrance into the cranial cavity" (Case 6).

"The tumors which, from any source whatever, have penetrated into the ethmoid can scarcely ever be removed by a radical enough operation." This was the case in all of our patients.

"The prognosis of nasal carcinoma (2 and 4) is much worse than of sarcoma. Most cases in literature have, it is true, been operated, yet not one seems to have had a definitely favorable outcome, although in certain ones death has been postponed for a long time (3¾ years, Schmiegelow)."

From these words of Kümmel it is evident that the prognosis of malignant nasal tumors, even with the very best of preliminary operations, is a very poor one. I do not need to state that I do not expect any great improvement of the prognosis by my method of operation. I do believe, however, that in this way there can be expected a diminution of the mortality from the operation itself, independent of the other advantages, which will be noted at the end of the article. First, however, I would like to discuss the articles in regard to the treatment of nasal tumors which have appeared since my publication of two years ago.

Two cases of endothelioma were operated according to our method, in 1907, in the Strassburg Ear Clinic, and have been described by Althoff in the *Archiv. f. Laryng.*, Vol. XIX, part 2. The director of the clinic, Prof. Manasse, told me that my method had given him very good service, that the view of the

antrum, ethmoid labyrinth and sphenoid sinus had been a very good one, and that in this way these cavities could be very well cleaned out.

Prof. Neumayer, Munich, operated an ethmoidal sarcoma, a carcinoma and a severe tuberculosis of the nasal meatus by our method and was *very well satisfied by the view which this method gave of the origin and extent of the disease processes.*

In June, 1907, Delie reported in the Jahresversammlung der belgischen oto-rhino-laryngologischen Gesellschaft a case of carcinoma of the lower turbinal which he operated in almost exactly the way I have described, with the best results.

In the *Monatschrift f. Ohrenheilk.*, 1907, Vol. IX, Schoetz reported a case of carcinoma of the antrum, from Kümme's clinic in Heidelberg, where our method of operation was followed. The patient could be discharged for ambulant treatment 10 days after the operation. Schoetz states that "the good cosmetic results and the quick cure would make this method the typical operation in the future."

In the second part of his work, "Zur Chirurgie der Nase," published last year, Löwe published a method of laying bare the ethmo-sphenoid region from the mouth, to which he came independently of me. This method almost completely corresponds with mine, differing only by the fact that Löwe, in order to uncover the cells lying in front of the ductus nasofrontalis, temporarily reflects the lower part of the nasal bone upwards, whereas I resect it. That the permanent removal of the lower third of the os nasi causes no deformity may be seen from this photograph.

In an article which has recently appeared in the *Archiv. für Laryngologie*, Uffenorde, while describing the methods of operating on the accessory cavities, stated that my method had great advantages in tumors of the antrum and tuberculosis of the medial wall, whereas in affections of the ethmoid, access to the anterior ethmoid cells was very difficult, and even impossible. This, however, is the case only when the soft parts have not been retracted upwards sufficiently, and the lower part of the nasal bone and the proc. nasal. max. super. have not been removed. I admit that I did not emphasize this part of my operation in my first publication, and am convinced that

Uffenorde would modify his opinion as to the view of the field if he resected these bony parts, in suitable cases.

To you, however, who are present, I hope to convince directly by demonstrating the view of the field of operation on a specimen which shows my method. (Demonstration.)

In conclusion, I desire to summarize the advantages of my method over the extensive preliminary operations used heretofore.

I. My method allows as well as any nasal, facial or oral method a wide and accessible laying bare of the origin and extent of tumors in the nose and accessory sinuses. Accordingly, it fulfills the condition of permitting the thorough extermination of the tumor.

II. There is no cutting of the external skin, such as is found in all nasal and facial methods. Since the removal of the bony portion causes no deformity, the cosmetic result is an ideal one.

III. The downward flow of large quantities of blood is almost certainly prevented by our method. This makes it preferable to the very bloody operations of Chalot, Partsch and Kocher, which, on the other hand, have very good cosmetic results. As a result of the lessened danger of aspiration pneumonia, our method obviates the prophylactic ligation of the carotid and the preliminary tracheotomy. The mortality from the operation itself is very small.

IV. The after-treatment is exceedingly simple, the healing usually normal. As a rule, the patient can be discharged from hospital treatment in 10-14 days after the operation.

For these reasons, I think I am justified in warmly recommending my method for nasal tumors, and requesting you to test it.