Pain of nasal origin

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SUMMARY

Patients with pain supposed to be of nasal origin bring their own diagnosis or that of their physician. The rhinologist has to correct sometimes this diagnosis before he can give efficient advice and help.

Pain related with external nose is very often caused by an inflammation of the hair follicles, when people have the bad habit to pull out these hairs for cosmetic reasons.

Painful swelling of the cheek is usually of dental origin and nearly never a sinus syndrome except in traumatic or operated cases. Inflammatory swelling between nose and cheek may take its origine either in the vestibulum of the nose or in the lachrymal sac.

Pain related with the internal nose must be differentiated in inflammatory disease, mostly of sinusal origin and neuralgic syndroms. The former group is usually the consequence of some anatomic or functional drainage trouble. The latter group may be the result of an irritation situated somewhere in the most complicated nervous network of the nasal area. The cross-point of nearly all of the nervous elements is situated at the pterygopalatine ganglion, where we find anastomoses between sensitive, sympathetic and cholinergic fibers. This is the reason, why different methodes of blockage, of the emergent fibers or of the ganglion itself may bij used with success in different cases of neuralgic syndroms, as migraine, trigeminal neuralgia, Charlin's or Sluder's syndrome etc. Faulty drainage of one of the sinuses as well as fonctional disorder of the sphenopalatine area are often the consequence of relative modest anatomic anomalities. That is why the conservative functional and reconstructive surgery of the intranasal structures is one of our important arms in many cases of nose-related pain.

PAIN is a common complaint of many patients in the rhinologist's office. Patients come because they or their family-doctor think, that their troubles are or may be related to pathologic conditions in the nasal-area. Sometimes this is obvious, sometimes not, and this is the reason of our paper.

There are not many problems, if the symptoms are localized in the external-nose-area. Very often we are in presence of quite tenacious inflammations of the hair-follicles. In older manuals there is sometimes question of " eczema of the nose entrance", an expression, which is certainly not correct. The origin is generally the bad habit habit of some persons, mostly women, to pull out these hairs.

When we stop this and let them trim instead, everything gets promptly in order. Some exanthemas look als erysipelas and should be treated as that, with special reference to eyeglass-pressure.

The inflammatory infiltrations of the region between nose and cheek offer some problems and we have to distinguish between these which start from the nasal vestibulum with tendancy to spread to the angular vein towards the orbit and the diseases of the lachrymal pathways. Integrity of the skin with deeper infiltration speaks in favour of the latter affection, even when we do not see pus at the lachrymal points.

Some more difficulties give the cases of pain centered at the canine fossa, pain which generally is of dental origin. The patients however mostly think of "sinus-trouble". Tenderness of the upper part of the oral vestibulum is a good sign for dental processes, even if the X-rays are still negative. Maxillary sinus disease nearly never shows this localisation of pain, except in cases with preceding traumatisme, Caldwell-Luc operation included! Tenderness or pain at the infra- or supraorbital point gives more indication in direction sinus pathology.

Much more important for our considerations are the cases, where the origin of pain is supposed to be in connection with pathological factors situated in the *internal* nose.

If the pain is localized principally at the nasal root, the patient's diagnosis is generally frontal sinusitis. We all know however, that during the course of an acute rhinitis the mucous membrane of the *whole* sinus-system is involved without more feeling than that of a dumb pressure. The most common cause of pain localized at the inner canthus (frontal branch of frontal and supratrocheal nerve) is the inflammation of the anterior ethmoid cells, and only a strictly local pain at the supraorbital-point directs towards the frontal sinus.

Pain of sinus origin is mostly the result of impaired drainage. Here we must distinguish between mechanical and functional drainage In the former case there is an anatomical obstacle causing stenosis or obstruction of the natural ostium. Partial or total paralysis of the ciliar activity is the reason for the latter trouble. Mechanically impaired drainage is obviously at the origin of direct pain, resulting from under-pressure (sometimes the expression of vacuum-sinus is used) or — more frequently — from over-pressure in one or several sinuses. In an acute case we have to restore immediately the normal pressure by removing the obstacle. Very often this obstacle is only caused by the swollen mucous-membrane at the ostium, where we find generally a considerable amount of swelling-tissue. Unswelling by topical application is always necessary, sometimes completed by intravenous steroid, plus antibiotic, and the relief will be spectacular. Only in relatively few cases of persistent pain we have to be more active, but — as in every case of acute inflammation — we must avoid any tissue-trauma. Punction of the maxillary sinus with placing a plastic-tube of 2 mm lumen is generally sufficient. In some cases of acute frontal sinusitis we can bring immediate relief and liberate the middle meatus by doing an infraction or so-called luxation of a hypertrophic or otherwise obstructing anterior part of the middle concha. It is mostly not advisable to wash out the frontal sinus by the naso-frontal duct, because this can rarely be

done without some tissue damage. We prefere therefore the less traumatising way of trephining through the eyebrow, if mechanical obstruction is obvious. Pain of chronic or relapsing character in connection with nasal factors is a frequent problem in our daily practice. Very often this pain coincides with some structural anomality in the septum or turbinal area. In these cases we should be very generous with our indication for a surgical reconstruction, because removing correctly an annatomical anomality never can do any harm and this is especially true in cases where the rhino-manometry confirms the pathological condition by demonstration of a functional disorder. But what can we do when the connection between our nose symptoms and the complaints of our patient is only supposed and has to be proved before an active treatment is justified? This is a point which needs some more explanation.

We know a great number of painful conditions at the head region, some of them are particularly interesting for our considerations, because their connection with nasal elements could be supposed. The peripherical nervous center of the nose is situated at the *pterygo-palatine ganglion,* which is in direct or indirect relation with practically all parts of the same side of the head. Certainly it is true, that only the parasympathetic fibers have their synapses in the ganglion, but we find anastomoses to the sensitives and the sympathetic (adrenergic) pathways, which all cross the ganglion or pass at the immediate neighborhood. This could be explained also by ontogenetic and phylogenetic facts, as the sphenopalatine ganglion is the result of an emigration of cells from the Gasserian and the geniculate-ganglion (Escat).

Five more or less typical pain-syndromes could be evocated at this place.

1. The typical so-called idiopatic neuralgia of the trigeminus nerve.
2. The typical migraine (hemicrania).
3. The so-called Cluster headache, a special form of the migraine, known also as Erythroprosopalgia or histamine-headache (Horton's syndrome).
4. The neuralgia of the naso-ciliar nerve (Charlin's syndrome).
5. The neuralgia of the sphenopalatine nerve (Sluder's syndrome).

To 1. The real neuralgia of the trigeminus is an important and very serious disease. We see these patients for routine examination only, and frequently we cannot do very much for these poor people. Anyhow there are some cases, where the pain may be produced or activated by mechanical stimulation of so-called trigger-points. If such a point can be fixed in the nasal cavity — mostly in the posterior part of the middle meatus — we have made the experience, that a test with topical anesthesia of this region could give some positive result. In this case any anatomical anomality even of minor importance should be surgically corrected, especially if there is some complementary functional disorder, as it is seen in cases of septal crests or spurs producing typical rhino-manometric curves. French authors long ago spoke about the so-called "épine irritative".

To 2. The real and typical migraine unfortunately also is known as an independent disease, not easy to treat. However, we know, that the middle meningeal nerve belongs to the second and not to the first branch of the trigeminus, this second branch which is responsible for the principal part of the sensitive inner-

vation of the nose. So the theoretical possibility of an influence by these nervous pathways exists, and sometimes we are happily surprised by the effect of the already mentioned topical anesthesia in the sphenopalatine-area, it stops the vicious circle which represents the migraine-attack.

The technical methods are different. In the majority of the cases we are successful with a simple surface anesthesia, using a small and conveniently curved cotton-wool applicator with not more than 2—2,5 mm of cotton, dipped in Bonain's Solution and applied just posteriorly to the attachment of the middle turbinate at the lateral nasal wall. As a matter of fact we do not reach by this way the ganglion, which is situated not directly at the sphenopalatine foramen, but more dorsally in a groove at the anterior end of Vidian's canal. In practice the easily diffusing Bonain-Solution touches enough of the emergent nerve fibers to give a sufficient anesthesia in most of the cases. Exceptionally we have to give our anesthesia by injection of xylocaine or a similar preparation, using a straight or curved long needle, directed through the middle meatus (Sluder or Ramadier). However this method is not very satisfactory, especially when the nose as usual presents some structural irregularity. Terracol therefore indicates a safer methode to touch the ganglion by passing through the posterior palatine foramen and canal. Using this way there is no possibility to miss the ganglion, once we have found the foramen. However in the great majority of all cases the surface anesthesia has given us satisfactory results, without necessity to inject the solution.

To 3. Cluster headache is also called erythroprosopalgia (there is always redness of the painful area), Horton's syndrome or histamine-headache (because of its resemblance to a histamine reaction). We think, that this is a special form of migraine, always associated to an important nasal and lachrymal discharge. As we know that the secretory fibers to the nasal and lachrymal glands emerge from their synapses in the sphenopalatine ganglion, we are not astonished to see a favorite influence of the already described techniques of topical anesthesia in certain cases of this category too.

To 4 and 5. Charlin's and Sluder's syndromes are more different from the migraine and should be ranged in the category of neuralgic diseases, especially in function of their strictly localized pain. These typical localisations and the almost constantly present nasal hyper-secretion make that the majority of these altogether not too frequent cases are sent to the rhinologist for diagnosis, sometimes for treatment. The typical Charlin-Syndrome is associated to ocular symptoms, as redness of the eye-ball and pain at the inner canthus. This may suggest, that the trouble could be situated at the ciliar ganglion. Anyhow, as we remember the importance of the nerve connections between the two ganglions, we may try with positive chance to influence the pathological condition via the sphenopalatine ganglion, with which we can get in direct contact more easily than with the ciliar ganglion, hidden in the orbit. The Sluder-syndrome with its typical pain irradiating towards the cheek has still more chances to be relieved by our treatment directed to the sphenopalatine-area.

In practice, before performing one of the described techniques we have to fix a very careful rhinologic diagnosis and never forget the possibilities of chronic

oligosymptomatic sinus disease or chronic tonsillar and dental inflammatory focusses. Rhinomanometry should belong to the routine examination. Only after these tests and after a careful general check we should try in selected cases to intervene by one of the described methods. Sometimes we shall have the happy surprise to see an immediate relief, in other cases the treatment may even produce a temporary activation of pain, followed by an improvement for hours and — may be — days or weeks.

There is no doubt, that we have to consider the psychic factors, the so-called placebo-effect, which is of special importance in an area as sensitive as the internal nose. But these considerations exist and must be kept in mind for any of our actions.

As we saw, there are different forms of headache, which could be produced or — and this is more frequent — activated by something that happens in the nose. Anatomical anomalities of the nasal cavity, especially when associated to functional disorder stated rhinomanometrically, are important contributing factors. That is the reason why we have to require a perfect anatomical and functional integrity in all cases, where we suspect a nasal element in the complex mosaic, which represents the mechanism of headache. When we are in presence of such an anomality, we have to put all chances on our side by practicing this type of functional and reconstructive surgery, which is taught in the courses of the Rhinologic Society.

RÉSUMÉ

Dans certains états douloureux, où une origine nasale peut être supposée, le patient nous arrive avec son propre diagnostic, qui, dans l'intérêt d'un traitement efficace, doit très souvent être corrigé.

Des douleurs dans la région externe du nez sont parfois dues à une inflammation des follicules capillaires consécutive à la mauvaise habitude d'arracher les poils gênants des narines (au lieu de les couper aux ciseaux).

Des douleurs localisées à la joue sont presque toujours d'origine dentaire et rarement en rapport avec le sinus maxillaire à l'exception toutefois des états post-traumatiques et postopératoires.

En cas d'enflures inflammatoires de la région latérale du nez on doit différentier entre l'origine nasale, généralement au vestibule, et une affection des voies lacrimales.

En cas de douleurs en relation avec des conditions pathologiques dans l'intérieur du nez il faut distinguer entre les états inflammatoires généralement d'origine sinusale et les syndromes neuralgiformes. Les affections du premier groupe sont en régle une conséquence d'un drainage défecteux, soit par obstacle anatomique (drainage mécanique), soit par insuffisance de l'activité ciliaire (drainage fonctionnel).

Le second groupe se rapporte à un état irritatif au niveau des connections nerveuses très complexes centrées autour du ganglion sphénopalatin. Dans cette région on trouve des anastomoses entre les différents systèmes de fibres sensitives

adrénergiques et cholinergiques. Par conséquent, nous voyons parfois des résultats étonnants par une des méthodes classiques de blocage par anesthésie de surface ou par infiltration, et ceci dans certains cas de névralgie du trijumau, de migraine typique ou atypique, ainsi que chez les cyndromes de Charlin ou de Sluder. Les dérangements du drainage naso-sinusal ainsi que les états irritatifs dans la région sphénopalatine sont souvent la conséquence d'anomalies structurelles, parfois modestes au premier abord. C'est pourquoi les techniques de chirurgie fonctionnelle et reconstructive trouvent ici un champ d'application plein d'espoirs.

ZUSAMMENFASSUNG

Patienten mit auf die Nase bezogenen Schmerzzuständen erscheinen oft mit Phantasiediagnosen, deren Korrektur die notwendige Voraussetzung für zweckmässiges therapeutisches Handeln bildet.

Schmerzen im Bereiche der äusseren Nase sind oft die Folge von hartnäckigen Folliculitiden, denen die Gewohnheit des Auszupfens von kosmetisch störenden Vibrissenhaaren zugrunde liegt.

Schmerzhafte Zustände der Wangengegend sind meist dentalen Ursprungs und selten auf die Kieferhöhlen zu beziehen — ausgenommen nach traumatischen Einwirkungen, operative Eingriffe eingeschlossen. Infiltrative Schwellungen im Bereiche der Nase-Wangengegend können sowohl vom Vestibulum nasi als auch von den Tränenwegen ausgehen.

Bei Schmerzen, die im Zusammenhang mit pathologischen Vorgängen im Naseninneren stehen, ist zu unterscheiden zwischen meist von den Nebenhöhlen ausgehenden entzündlichen Zuständen und den neuralgiformen Syndromen. Die erstgenannte Gruppe ist in der Regel eine Folgeerscheinung gestörter anatomischer oder funktionneller Drainage einer oder mehrerer Nebenhöhlen. Bei den zweitgenannten Zuständen liegt meist ein anormaler Reiz im Bereich der äusserst komplizierten nervösen Verflechtungen vor, deren Zentrum im Ganglion sphenopalatinum zu suchen ist. Dort finden sich Anastomosen zwischen den sensiblen, adrenergischen und cholinergischen Fasersystemen. Deshalb können die verschiedenen Methoden der vorübergehenden Blockade an den vom Ganglion ausgehenden Efferenzen oder am Ganglion selbst bei bestimmten Schmerzzuständen, wie Trigeminusneuralgie oder Migräne, bzw. den Syndromen von Charlin oder Sluder gelegentlich erstaunliche Erfolge aufweisen.

Den gestörten Drainageverhältnissen im Nebenhöhlenbereich ebenso wie gewissen funktionnellen Störungen in der Gegend des Ganglion sphenopalatium liegen oft strukturelle Anomalien zugrunde, die nicht selten allerdings nur bei genauester Betrachtung, offenkundig werden. Deshalb sind die konservativ-funktionnellen und rekonstruktiven Operationsmethoden in diesem Zusammenhang von grösster Bedeutung.

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