

## NASAL AND POST-NASAL SYNECHIÆ.\*

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THE presence of synechiæ within one or other of the nasal cavities is a pathological condition so frequently met with by every rhinologist that one is almost inclined to doubt the wisdom of taking up the time of the Fellows of this Society in the discussion of such a subject. It seems to me, however, that the very facts of its frequency on the one hand, and the apparent simplicity of its management on the other, which is more apparent than real, are sufficient reasons for warranting careful attention to the subject.

During recent years many monographs, long or short, have been written upon it, among which I might mention those of Kyle, Moliné, Scheppegegrell, Vanzant, Watson, and White. You, no doubt, are all familiar with these and the views they express, and I will not weary you by referring to them again. But if by a brief statement of my own views upon the subject, founded upon personal observation, I can create a general discussion and induce the gentlemen present to favour us with the results of their own personal experience, it is just possible that a condition of things which is so often produced by the operating rhinologist himself may, from our side of the question at least, be consigned to the limbo of the past, rarely again to arise as a result of the rhinologist's surgical traumatism.

Far be it from me to express the opinion that the majority of cases are the result of our own injudicious treatment, yet undoubtedly many of them are. This may arise from unwise operations, lack of care in after-treatment, or, from one cause or another, our inability to keep sufficient control over the future progress of the case. The last-mentioned is a point I would like to emphasize before entering more fully into the subject.

Is it not a fact that the comparative post-operative immunity from pain in nasal cases is a condition favouring the development of these synechiæ? That is to say, the patient after intranasal operation experiences so much less pain than he anticipated that he is very apt to consider, the operation once over, that the wound can take care of itself. Hence he forsakes attendance upon the rhinologist long before the parts are perfectly healed.

A synechia may be described as a bony, cartilaginous, or fibrous band, unnaturally connecting together the opposite walls of a cavity.

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It occurs most frequently between the middle turbinal and the septum; next between the inferior turbinal and the septum. It may also occur between the lower turbinal and inferior meatus, the middle turbinal and the external wall, or between the two lower turbinal bodies. In the naso-pharynx the synechia is usually found connecting the lip of one or other of the Eustachian tubes to some part of the pharyngeal vault.

Pathologically it is almost invariably either osseous or fibrous in character. The synechia can only be cartilaginous when situated in the extreme anterior region, where the septum lies directly opposite the superior or inferior lateral cartilages; and the condition in this region is so exceedingly rare as to be practically non-existent. When osseous it usually consists of solid union between the septum and the outer wall, either of the middle turbinated with the perpendicular plate of the ethmoid or the inferior turbinated with the vomer.

Almost all other synechiae, wherever situated, are of a fibrous character, the result of inflammatory adhesion between two abraded surfaces. When these abraded surfaces are kept constantly in contact for a considerable length of time, the capillary circulation extends from side to side, and the attraction of cohesion finally develops into permanent union, the synechia being the result.

The etiology of the formation of these false bands is a many-sided question. I think it is rarely, if ever, a true congenital condition. The predisposition may be congenital, possibly, but the inflammatory action, essential to development of the synechia, is scarcely likely to occur during intra-uterine life.

The cause in all cases I believe to be, either directly or indirectly, traumatic. By directly traumatic I mean direct physical injury of one form or another, either by the surgeon's knife, saw, or cautery, or whatever other instrument he may use in operating upon his case, or from direct accidental injury to the parts themselves. By indirect traumatism I mean simple abrasion of the surfaces from forcible blowing when the swollen tissues are either almost or altogether in contact, or abrasion of the surfaces by continuity of contact, as in cases of chronic congestive hypertrophy of the middle and inferior turbinated bodies. In the latter condition the vitality and resistance of the mucosa is in some cases so materially impaired that the soggy tissues lose their contractile tonicity, and the membrane at the part of greatest pressure becomes so thin that intercapillary circulation is readily developed.

Perhaps of surgical instruments the electro or galvano-cautery is the one of all others the use of which within the nasal passages is

most likely to be followed by the development of this condition. I do not want it to be understood that I side at all with the wholesale condemnation of the electro-cautery which is at present becoming the fashion with many rhinologists. I fear that with us, as with other men, the pendulum is allowed to swing from one extreme to the other, and we have not yet learned to run the happy mean. I believe that when used with judicious care and precision, and in properly selected cases, there is no instrument more useful in our whole armamentarium; but that does not invalidate the fact of its effect in producing nasal synechiæ.

There are two reasons for this, the first being the escharotic effect produced by the high temperature of the cautery on the wall opposite to the one operated upon; the other, the fact that cautery operations are more frequently followed by temporary œdema than are those of any other instrument. Hence, when the chink is narrow, the cautery should not be used unless we can secure complete separation of the two surfaces until healing has been completed.

When operations are performed with other instruments, such as the knife, saw, scissors, chisel, etc., the mucous membrane of the opposite wall should not be injured at all, while subsequent œdema of the part operated upon is less frequent, and hence the formation of synechiæ not so likely to follow.

The prolonged existence of turbinal hypertrophy is not an uncommon cause of fibroid or ligamentous synechia. I have observed this as a result in several cases of atrophy of the turbinateds, cases in which, with almost complete shrinkage of the middle turbinated body, ligamentous bridges had formed connecting the lower border with the external wall. The only reasonable conclusion seemed to be that a former hypertrophy had filled the cavity; abrasion had connected contiguous surfaces at the most dependent, and hence most congested, parts, and union had become perfect before the subsequent atrophy had commenced.

Cases sometimes come under observation in which no history can be traced, and in which direct traumatism is out of the question. For instance, I have just now a vocalist who came for throat trouble, but had no idea there was anything wrong in her nose. She never had nasal treatment of any kind. In the left nasal passage, 2 centimetres from the naris, in a wide nasal chamber a thick band had formed, connecting the anterior inferior end of the lower turbinated to the septum. Query, how did it occur? Healthy mucous membrane all round. Room enough to breathe freely through the passage independent of the synechia. My

impression was that during early life the dependent end of the turbinated had pressed against a slightly bulging septum until union had occurred. And when on closer inquiry I found that she was a hemophilia, the cause became clear.

In the post-pharynx the pathology and etiology are very similar to what they are in the nasal chambers. There the synechiæ are always of a fibrous or ligamentous character, and the parts connected are one or other or both of the Eustachian tubes to the upper or back part of the pharyngeal vault.

Carelessness or ineffectual removal of the adenoids may readily be a cause of Eustachian synechia. When a single large central piece is removed, the ragged edges are likely to drop down on to the lips of the Eustachian tubes, and if from careless handling of instruments the bulbs have been bruised, synechiæ can readily form. We cannot be too careful in our treatment of these cases, and should do our best always to prevent accidents of this kind from occurring.

I believe, however, that in the naso-pharynx the most frequent cause is indirect instead of direct traumatism—the very opposite of its occurrence within the nasal chambers. Perhaps in this variety there is only a single approximate cause, and that is excessive redundancy of pharyngeal tonsillar tissue. When adenoids are excessively developed, it is a well-known fact that severe colds or high febrile action are sometimes accompanied by slight hæmorrhage from the naso-pharynx. What is more natural than for the hæmorrhage to arise from the spongy tissue pressing hard upon the extremities of the Eustachian tubes? The abrasion once occurring, the continual pressure might eventually result in union.

Be this theory correct or not, I have on several occasions found direct ligaments binding the Eustachian tube to the base of a shrunk pharyngeal tonsil, in which no operation of any kind had previously been performed.

I might mention here one peculiar case that I saw several years ago. It occurred in a young man aged twenty-one. He had never received either nasal or pharyngeal treatment. Whenever he attempted to sing, he said the voice sounded as if it penetrated the left ear through the throat, producing a very disagreeable sensation. On examination I found a shrunk pharyngeal tonsil tightly attached to the posterior superior lip of the left tube by a broad ligamentous band, seemingly counteracting the natural tendency to closure of the tube. The consequence was that, the tube being constantly open, the sound of his own voice reached the ear through it, as well as through the external auditory canal. I removed the

synechia by curette and digital operation, and the result was perfect relief from the abnormal vocal sounds.

There is one other variety of naso-pharyngeal synechia I would like to mention, and that is a perfectly symmetrical bilateral synechia extending over the vault of the pharynx from lip to lip of the Eustachian tubes. I have seen several instances of this, and in two cases in which the synechia was accompanied by adenoid enlargement I removed, as I thought successfully, the entire synechia. Within a year, however, in each case I had the opportunity to examine the patient again, to find, although there was no return of adenoid tissue, there was complete redevelopment of the cicatricial band.

The prognosis in synechia of the nose depends almost entirely upon the attention and time that the surgeon can devote to his case. When the cavity across which the band is formed is wide, the prognosis is most favourable. When the chink is a narrow one, the cure is more difficult, and, without the greatest of care, often unsatisfactory.

In treatment there is a diversity of methods from Scheppegrell's artistic sweep, with celluloid sound and silk and wire, down to Watson's simple friction. But I will not detain you with an enumeration of these, but simply speak of the methods I have found the most useful.

In the bony synechia between the vomer and the inferior turbinated, I have found the saw to be the most useful instrument, choosing one with a strong, wide cutting edge and narrow back, severing the part first at the turbinal side, and then sawing the chink a little wider at the other. The saw can also be used in middle turbinated osseous synechia, though its limitations are more marked. To keep the parts open I have used cotton-wool tampons soaked in albolene—I like them better than gauze—or thin rubber sheeting made wide enough to completely cover the raw surface. By its own elasticity it will usually retain its position. It may readily be kept in place for three or four days or a week without removal. To keep the parts free from discharges, albolene sprays have been used two or three times a day, and the patient has been directed to lie down on the opposite side to the one operated upon, to favour gravitation.

In removing fibroid synechiæ I have found the knife, scissors, or hooked nasal knife the most useful, very rarely indeed using the cautery. When there is a simple ligamentous band, it can be clipped out at each end by appropriate scissors. When the space is small, and the synechia likewise, the simple sharp hook passed

through it from behind forwards will sever the parts and cause a chink.

Any hæmorrhage that occurs at the time I always consider an advantage to the patient. These cases almost invariably require the insertion of tampons of one form or other. As I said before, I do not like gauze, but prefer absorbent cotton soaked in one of the hydro-carbon oils, and left *in situ* for several days without being disturbed, except to keep the passage above and below cleansed and open. In some of these cases I have used to advantage the rubber sheeting already referred to, and found it an excellent adjunct.

With regard to the length of time that absorbent cotton can be retained without becoming offensive or producing any injurious effect, I may say that in the case I referred to in the commencement of this paper I removed the tampon two days ago. It had been in position ten days, the passages above and below having been kept free by the daily use of albolene sprays. The parts were moulded to a proper form, the chink clearly open, and the surfaces almost healed, without producing at any time the slightest distress to the patient, or offensiveness of breath.

One point here I want to emphasize, and that is, I do not use aqueous sprays at all in these cases, but hydro-carbon oils thrown through the atomizer by means of compressed air.

In removing post-nasal synechiæ between the Eustachian tube and the vault, I have used the cautery blade, passed up behind the palate, with success. Usually, however, I have employed a narrow Gottstein's curette and the finger-nail. Of course, tampons are not required in this region.

## ECONOMY IN THE EMPLOYMENT OF COCAINE.

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THE prevailing high price, with the occasional personal intolerance of cocaine and its salts, suggested experiments with the view of reducing the quantity employed and increasing its efficiency when used in ear, nose, and throat work.

In the first place, it was found that a 2 per cent. solution of the *alkaloid* in equal parts of almond and petroleum oil proved an efficient local anæsthetic for the examination of, and slight operations upon, the nose and throat, *e.g.*, passing Eustachian catheter,