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NASAL OBSTRUCTION

In its relation to the Administration of Anæsthetics.

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THERE are but few morbid conditions which have received, of late years, more careful attention than that of nasal obstruction, and it has frequently been shown, that the condition is by no means one which concerns the specialist alone, but, on the contrary, that the patency, or the more or less complete closure of the naso-pharyngeal airway, may greatly influence the general health. The production of artificial anæsthesia by inhalation, is so frequently resorted to, that I hardly need to offer any excuse, for attempting to point out how important are the bearings of such obstruction, upon the process of administration.

Unless the indications to the contrary are very obvious, the administrator naturally concludes, that the anæsthetic vapour reaches the lungs by the usual channels, *i.e.*, the nose and mouth, and mainly the former. If, however, nasal obstruction exists, this double-barrelled, or oro-nasal airway, is converted into a single or oral one in direct proportion to the degree of obstruction. In this connection I would point out—

1. That such anæsthetics as ether, and, in a lesser degree, nitrous oxide, by increasing the turgescence of the mucous membranes, tend to accentuate any slight obstruction that may already exist, or may convert what was originally a partial, and maybe unnoticed, obstruction, into a complete one.

2. That with all anæsthetics, extreme degrees of relaxation, likewise accentuate pre-existing nasal obstruction, by permitting of the falling of the velum palati towards the posterior wall of the pharynx. The proper explanation to give, of the apparent superiority of chloroform for children, appears to me to be, that partial nasal obstruction is then of very frequent

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occurrence, and that such obstruction, on account of the depressing action of the chloroform, is somewhat less likely to be rendered absolute than with ether; but I think that, when the condition in question is fully recognised by those administering anæsthetics, and precautions taken to obviate any possible difficulty which may arise from this cause, one, at any rate, of the most serious objections to the use of ether in the young, will be removed.

The conversion of an oro-nasal into an oral airway, should not, of course, under ordinary circumstances, give rise to the slightest anxiety or trouble; difficulties may, however, then arise under the following circumstances, viz. :—

1. During the stage of induction, on account of the swelling of the tongue which then tends to fill up the only remaining, or oral, airway. This condition is often aggravated, by the abundant secretion of mucus and saliva, and by the spasmodic closure of the jaws and mouth, as a result of the action of the anæsthetic employed; not only is the inhalation prevented under these circumstances, but a certain degree of asphyxia is also developed;

2. During the maintenance of the narcosis. Short of absolute occlusion of the glottis by the base, mere contact of the tongue, (even if not swollen), with the roof of the mouth, by obstructing the *oral* airway, is sufficient to add materially to our difficulties. Spasmodic closure of the mouth and jaws likewise ensues in these cases, but rather as a result of the partial asphyxia, than as a cause of that condition.

If the true nature of these difficulties is recognised at the outset, it is comparatively easy to prevent their occurrence, or to overcome them when developed. In the first place then, if nasal obstruction is known, or is suspected to exist, it is always wisest to place a prop between the teeth before commencing the inhalation. Not only is it then easier, subsequently, to insert a gag or mouth-opener, if necessary, but the mouth will be held sufficiently open, to enable us to seize the tongue, should it be desirable to do so.

In the second place, the frequency of more or less complete nasal obstruction, and its tendency to be accentuated under an anæsthetic, should be borne in mind, especially in administering to children. If no prop has been inserted, and if asphyxial troubles arise which do not yield readily to simple measures, *e.g.*, pushing forward the lower jaw, we should endeavour to secure a proper oral airway by the use of the mouth opener or gags. I am inclined to place the importance of opening the mouth, second only to compression of the chest or artificial respiration. With the mouth open, we are rendered independent of the nasal passages; we can clear away mucus, etc., and pull forward the base of the tongue; we can command the glottis, and, if need be, proceed to intubate the larynx.

I have been led to devote a good deal of attention to the subject, because of the occasional occurrence, in my own practice, of cases of which the following is almost a typical example, viz. :—

The patient was a lad aged ten; chloroform was administered by means of a Skinner's frame, and he passed fully and quietly under the influence

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of the anæsthetic in four minutes, half a drachm being used. The narcosis was maintained subsequently for about ten minutes, towards the end of which time the breathing became slow and shallow, but with nothing approaching stertor; lividity of the lips then appeared, deepened and extended to the nose and cheeks, but the pulse remained good, and became almost bounding in character, and the pupils did not dilate; obviously the danger was due to asphyxia and not to syncope. Dr. HOWARD'S paper upon apnœa, had just then appeared, and this case seemed one in which good might be expected to result from the procedure therein advocated; the child's head was accordingly brought over the edge of the bed, the shoulders raised, and the neck extended to the very utmost limit, but without appreciable result. I then endeavoured to open the mouth, but the spasm was by that time extreme, and I could only succeed in introducing my forceps just sufficiently to seize hold of the tip of the tongue and draw it forward. Momentary relief was thus afforded, but, unfortunately the jaws were not sufficiently wide apart, the tongue became jammed between the teeth, and the last condition of that boy was decidedly worse than the first. It was not until the jaws were widely opened and the full extent of the oral airway was established, that the patient could be considered out of danger. As I say, this case is but typical of others that have occurred to me and I doubt not to other anæsthetists. The usual explanations given of the phenomena (*e.g.*, arytæno-epiglottidean relaxation), did not appear to me to be quite satisfactory, and it was not until some little time after, that the possibility of nasal obstruction being at the bottom of the mischief impressed itself upon my mind. If my views upon the subject are correct, it might be useful in similar cases, *i.e.*, when oral supervenes upon nasal obstruction, to pass into the pharynx, *viâ* the nostrils, a good sized gum elastic catheter, in order to furnish means for the passage of air beyond the oral obstruction; at any rate, the manœuvre is worth trying. Such a catheter might well be added to the armamentarium of the anæsthetist, for it is quite possible to intubate the larynx with such an instrument, should that proceeding be necessary.

If the naso-pharynx itself is the region involved in the operation, additional elements of difficulty in administering are introduced, such as:—

1. The manipulations of the surgeon. When the post-nasal airway is blocked, and the finger, or an instrument, is thrust into the only channel by which the anæsthetic can be administered, it is hardly surprising that the patient tends to asphyxiate, or that, at best, the narcosis is fitful and uncertain;

2. The profuse hæmorrhage attendant upon most operations in this region. Apart from the possibilities of syncope (*e.g.*, in so-called "bleeders"), and complete asphyxia, an accumulation of blood, mucus, etc., in the pharynx and upper parts of the larynx may act in other ways, not the less dangerous because insidious. Thus the glottis being partly occluded, the actual amount of air passing into the lungs is sensibly diminished, and as the vapour of the anæsthetic employed is, as a rule, heavier than air, the dimunition takes place, (especially in the supine position), mainly at the expense of the latter; the vapour, in fact, from sheer force of gravity, gradually tends to displace the air, and to accumulate in the

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upper part of the larynx. This accumulation explains, I believe, in great measure, how it is that the cases we are considering are particularly prone to the sudden development, of what I have termed elsewhere, "Toxicological apnœa."[1]

Further, with a diminution of inhalatory power, is of necessity associated, diminished expiratory function and pulmonary elimination, and consequent accumulation of anæsthetic vapour in the lungs and blood. Hence it is not uncommon, for attacks of apnœa and syncope to occur some little time *after* the administration has been discontinued.

Finally, although I have happily had no experience myself in the matter, it is usually taught, and seems quite possible, that blood may be inhaled in such quantities, as to give rise subsequently to atelectasis, pneumonia, and other troubles.

ON THE TREATMENT OF SO-CALLED PHTHISIS OF THE LARYNX,

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(*Continued from page* 238.)

We now proceed to the consideration of other medicaments used in the treatment of this laryngeal disorder.

2. *Iodoform.*—Among antiseptic drugs iodoform holds undoubtedly one of the first places, in spite of contradiction latterly on the part of the Danish physicians, Heyn and Rovsing, the more so that, thanks to the the works of Binz, Buchner, Gosselin,[2] and others, it is to be seen that Heyn and Rovsing unjustly denied the antiseptic qualities of this drug. In surgery it has already gained extensive application (Mikulicz), along with sublimate and carbolic acid, and it has been pressed into the therapeutics of laryngeal tuberculosis, where it gained many ardent adherents, amongst whom we must particularly mention Schnitzler,[82] of Vienna; and Massei, of Naples,[83] further, Jarvis,[84] Masini,[85] Gleitsman,[86] Solis-Cohen,[87] Coomes, Geagh, John Mackenzie,[87] Schech,[3] Lincoln[4] (as long ago as 1874), Beetz, and Küssner.[4] According to the last two authors iodoform is a certain anti-tubercular drug, an opinion which most authors, *e.g.*, Fraenkel,[4] Blindermann, and others, do not share. On the other hand this drug has excited strong opposition on the part of Lennox Browne,[87] Schrötter,[88] B. Fraenkel, Schaeffer, Balmer,[3] and others. The beneficial action of iodoform is based upon a quick cleansing of ulcerations, formation of regular granulations, and even the possibility of entire cicatrization of ulcers. Schnitzler recommends iodoform especially in cases of very extensive ulcerative processes in the larynx. According to Heryng, the cases most suitable for treatment with iodoform are

[1] "Lancet," February 16, 1889.

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