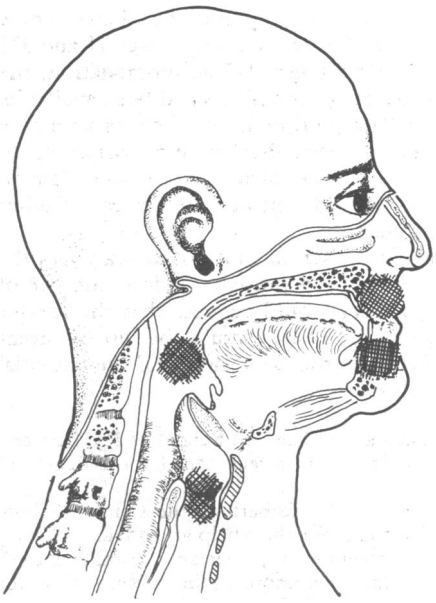
ABC of ENT

HAROLD LUDMAN

NASAL OBSTRUCTION



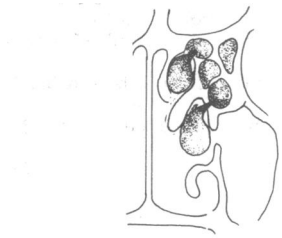
Acute short-lasting nasal obstruction is familiar as a symptom of the common cold and other upper respiratory tract viruses, trauma, and allergic reactions. Some patients, however, suffer chronic nasal obstruction, which is the topic of this article.

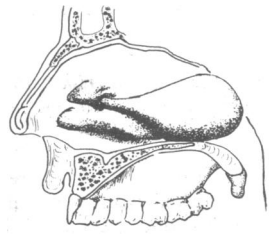
Chronic nasal obstruction in childhood is most often caused by enlarged adenoids or by vasomotor rhinitis. Rare causes include congenital choanal atresia and tumours of the postnasal space (such as the nasopharyngeal angiofibroma).

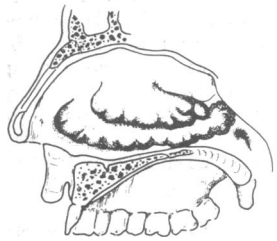
Chronic nasal obstruction in the adult is usually caused either by a deflection of the nasal septum or by vasomotor rhinitis and the mucosal swellings which vasomotor rhinitis may produce. A less common cause is chronic sinusitis (which will be dealt with in the next article). Rare possibilities include benign and malignant tumours of the nose, paranasal sinuses, and nasopharynx and bacterially induced granulomatous diseases (tuberculosis, syphilis, leprosy). Iatrogenic nasal obstruction produced by topical vasoconstrictors—rhinitis medicamentosa—is so common that it deserves special mention.

The harmful effects of long-standing nasal obstruction include chronic pharyngitis, chronic laryngitis, irritation of the gums, distortion of speech, and snoring at night. Temporary nasal obstruction is normal, as is alternation of obstruction between the nasal passages, but people vary greatly in their tolerance of a blocked nose.

Common causes







Vasomotor rhinitis, the commonest cause of persisting nasal obstruction in both children and adults, is a disorder of the normal control of the shrinking and swelling of the nasal mucosa whereby it exercises its air-conditioning function. The cause may be allergic in a person sensitive to external allergens. It will be seasonal when allergens such as grass pollen persist for short periods at the same time each year, or perennial when allergens like the house dust mite are constantly present. When allergic, vasomotor rhinitis is often associated in childhood with infantile eczema, allergic asthma, and a family history of atopy, and the nasal obstruction is dominated by sneezing and rhinorrhoea.

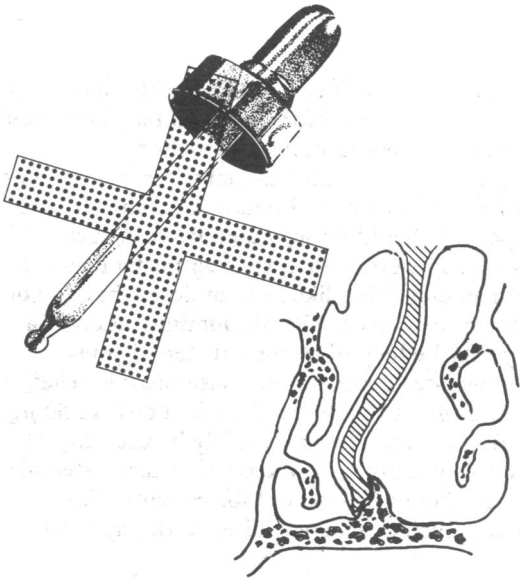
Often vasomotor rhinitis is not due to any recognisable allergen but is provoked either by external irritating changes of humidity and temperature and non-specific chemical irritants in the atmosphere, or by internal endocrine and emotional factors. Long-lasting oedema of the nasal mucosa produces redundant lumps and folds. These may take the form of ethmoid polyps, antrochoanal polyps, and swellings or fringes of the turbinates.

Ethmoid nasal polyps are swellings of the lining of ethmoid cells protruding into the nose. Constriction at the ostium of the cell increases the oedema within the polyp so that it expands within the nasal cavity.

Antrochoanal polyps are much rarer polyps arising from a maxillary antrum, which pass through its ostium backwards to the posterior choana. Since they can develop only from an antrum too small to accommodate its swollen mucosa, they are commoner in children and adolescents than in adults.

Swellings also appear at the posterior end of the inferior turbinates and "moriform fringes" develop from the lower borders of either the middle or inferior turbinates.

Br Med J (Clin Res Ed): first published as 10.1136/bmj.282.6267.886 on 14 March 1981. Downloaded from http://www.bmj.com/ on 20 April 2024 by guest. Protected by copyright.

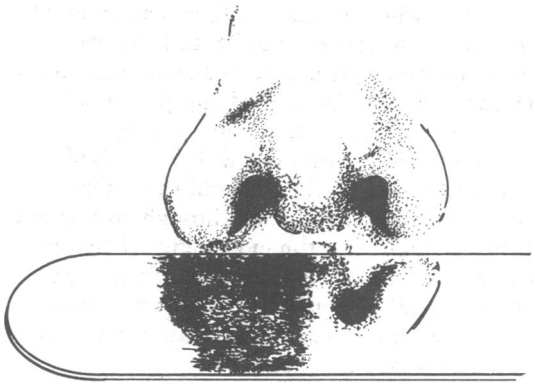


Iatrogenic obstruction—Rhinitis medicamentosa results from the treatment of persisting obstruction with nasal decongestant drops or sprays. All these decongestants harm the mucosa if they are used for more than a week at a time. They cause severe vasoconstriction with possible damage by anoxia, followed by a period of rebound engorgement and mucosal oedema which can be relieved only by further administration of the spray. Repeated application produces a swollen red mucosa which eventually becomes rubbery and unresponsive to the decongestant. These sprays are therefore potentially addicting and should be prescribed only when the cause of the nasal obstruction is likely to abate within a week or so. Some systemic drugs, including reserpine and tricyclic antidepressants, many cause nasal stuffiness.

Adenoid enlargement is the other common cause of nasal obstruction in childhood. This has been discussed in an earlier article.

A deviated nasal septum is rarely seen in childhood, but 20% or more of adults develop a deflection sufficient to obstruct one nasal passage. This occurs either as developmental asymmetry, particularly in long thin noses, or as a result of injury.

Assessment of the child with a blocked nose



A careful history will tell the doctor the degree of disturbance caused by the obstruction—whether the child breathes through his mouth all the time during the day, whether eating is noisy and speech affected, or whether the concern is mainly snoring at night. The history will also indicate the relationship of nasal symptoms to possible allergic causes and whether the symptoms are associated with the sneezing that invariably occurs when the cause is allergic.

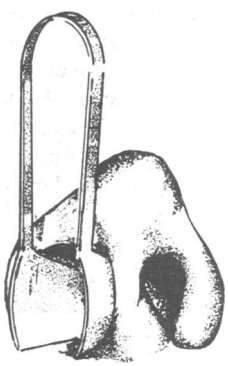
The doctor must decide whether the child's nose is truly obstructed, since some children keep their mouths open while breathing nasally. The issue can be resolved by holding a shiny speculum under the nose, and observing condensation during expiration. This is a useful test for recognising whether one or both nasal passages are obstructed. If only one is completely blocked the rare possibility of unilateral posterior choanal atresia must be considered. Next, examination of the anterior nares may show the oedematous mucosa expected in vasomotor rhinitis. This is often pale mauve. In childhood the inferior turbinates sometimes become persistently oedematous, with large dependent fringes; but other polyoid swellings are unusual.

If the anterior nares are clear, indicating obstruction further back, a lateral radiograph of the postnasal space may be useful, since it can show the degree of adenoid enlargement.

Suspicion of allergy may be followed by skin testing in an attempt to identify the provoking allergens.

The dangers of decongestant drops and sprays have already been described. In the child the doctor must decide whether treatment is needed or whether reassurance of the parents will suffice. He should remember that adenoid tissue will atrophy around the time of puberty and that apparent disturbance of sleep by nasal obstruction is often of more concern to the parent than to the child. Adenoidectomy has already been discussed in an earlier article.

Assessment of nasal obstruction in the adult

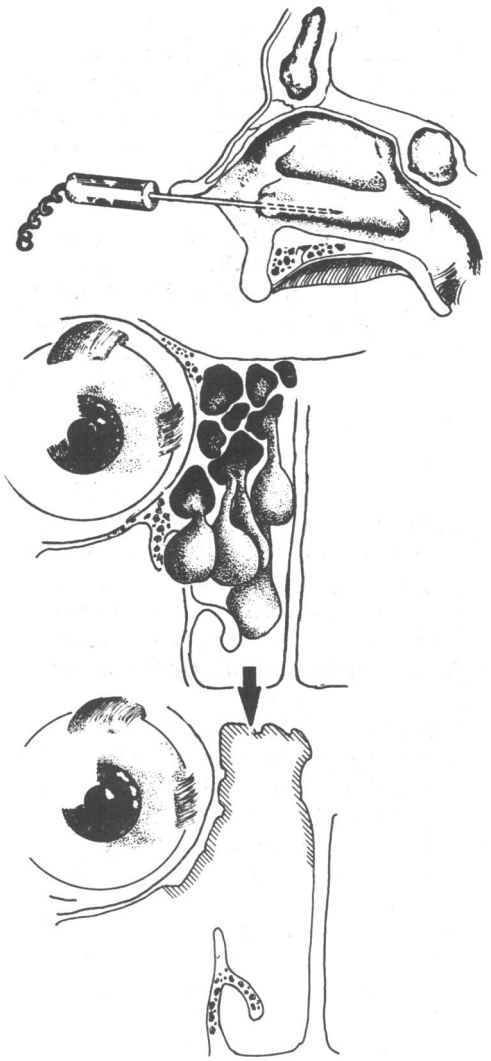


Assessing obstruction in the adult also needs an account of the degree of disturbance; the duration and pattern of the symptom; and whether obstruction affects both nostrils, one continuously, or alternates from one to the other. Constant obstruction of only one side of the nose strongly suggests a deflected nasal septum or, much more rarely, an antrochoanal polyp.

Examination of the adult nose, and of the postnasal space with a mirror, usually suggests the diagnosis. The response of the mucosa to a vasoconstrictor spray can provide valuable information, and abnormal tissue may be removed under local anaesthetic for histological examination.

Br Med J (Clin Res Ed): first published as 10.1136/bmj.282.6267.886 on 14 March 1981. Downloaded from http://www.bmj.com/ on 20 April 2024 by guest. Protected by copyright.

Treatment of vasomotor rhinitis



If a clearly allergic pattern emerges and is supported by skin sensitivity tests desensitisation with repeated injections of the allergen may be helpful, but more so for sneezing and rhinorrhoea than for obstruction. Desensitisation can help 70% of sufferers from seasonal allergic symptoms but only 50% of those sensitive to the perennial house dust mite. In rare cases of allergy to a pet the patient should be separated from the pet.

Symptomatic treatment is usually worth while, with antihistamines, or antihistamines combined with an ephedrine-like drug in doses that do not provoke undue sleepiness. When the cause is allergic administration of a disodium cromoglycate spray may be helpful. A topical steroid spray such as beclomethasone dipropionate (Beconase) may also provide relief, again mainly for the allergic patient; it should be given in a dose of 50 μg to each nostril three or four times a day. This may safely be used for long periods—certainly months—at a time. In rare cases systemic steroids may be recommended but these should be reserved for patients with temporarily disabling symptoms, such as schoolchildren with hay fever faced with examinations.

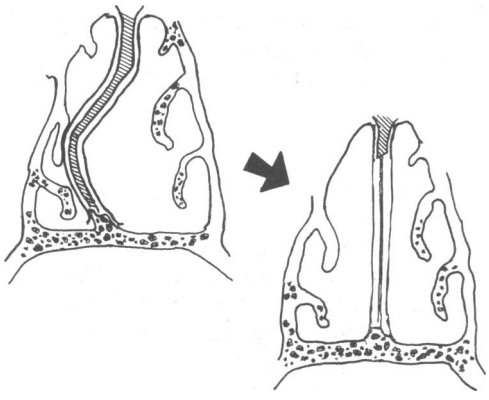
If there is no allergy but if persistent mucosal oedema or mucosal redundancies are present one of the following operative measures may be advisable.

Submucous diathermy of the nasal mucosa is particularly helpful for children with persistently swollen inferior turbinates. Two or three strokes of the diathermy or red hot cautery needle from the back to the front of the inferior turbinates, either through or under the mucosa, will be followed by cicatricial shrinking.

Removal of nasal polyps—Single ethmoid polyps, treated for the first time, can often be removed successfully with a snare under local anaesthetic as an outpatient procedure. The aim should be to extract the polyp with the mucosa of the ethmoid cell from which it arises, rather than simply to cut it off at its neck. When polyps are numerous, sessile, or have been treated before, they should be removed under a general anaesthetic, so that the ethmoid cells from which they arise can be opened and put into continuity with each other. These "ethmoidectomies" are usually performed intranasally, but more complete clearance, with less risk of damage to the surrounding structures such as the eye, and the anterior cranial fossa, can be achieved by an external approach through an incision around the inner canthus of the eye (external ethmoidectomy). The rare antrochoanal polyp is best treated by a Caldwell-Luc operation to expose and remove all the mucosa of the maxillary antrum from which it arises.

Moriform fringes and posterior swellings of the inferior turbinates can also be removed surgically under general anaesthetic.

Treatment of deviated nasal septum



Submucous resection—A deviated nasal septum is treated by a submucous resection. This should be considered only when a deflected septum has been identified as the cause of the nasal obstruction. Submucous resection is sometimes unnecessarily performed when the main cause of obstruction is vasomotor rhinitis, and the benefits that normally follow the correct use of this operation cannot then be expected.

During the operation, which is performed under general anaesthetic, the nasal septum is "filleted" by removing the cartilage and bone that is holding the septum in the wrong position from between the layers of mucosa. The intact layers of mucosa left in contact with each other can then hang in the mid-line. Possible complications include collapse of the nasal bridge with deformity if bridge support is lost, and perforation of the nasal septum if both layers of the mucosa are accidently transgressed.

Mr Harold Ludman, MA, FRCS, is consultant otolaryngologist, King's College Hospital, and neuro-otological surgeon, the National Hospital for Nervous Diseases, London.

Br Med J (Clin Res Ed): first published as 10.1136/bmj.282.6267.886 on 14 March 1981. Downloaded from http://www.bmj.com/ on 20 April 2024 by guest. Protected by copyright.