

Nasal airway obstruction and Homoeopathy

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Introduction

Nasal obstruction is the commonest problem, frequently ignored during study and is an important symptom of many underlying disorders.

Brief Anatomy of Nasal Airways

Nasal valve area is considered to be the narrowest portion of the human airway. It has two components i.e. External and internal nasal valves.

1. External Nasal Valve

External nasal valve is also known as nasal vestibule. It is bounded by the caudal edge of the lateral crus of the lower lateral cartilage, fibrofatty tissue over the ala and the membranous septum.

2. Internal Nasal Valve

Boundaries of internal nasal valve include:

- Dorsal portion of nasal septum medially
- Inner caudal edge of upper lateral cartilage laterally
- Anterior head of inferior turbinate posteriorly

The internal nasal valve area is the narrowest portion of human airway and has a cross sectional area of approximately 40 – 60 mm². This area accounts for nearly 2/3 of the whole airway resistance. Hence collapse / stenosis of this area leads to one of the commoner causes of nasal block.

3. Nasal vestibule

The nasal vestibule is the first component of the nasal resistance mechanism.

Physiology of Nasal Airways

If the nasal airflow rate exceeds 30 litres / minute, the vestibule of nose collapses causing a reduction in the rate of nasal airflow. This collapse of ala increases the nasal resistance.

On inspiration, the increased velocity of air flowing through the nasal valve area causes a drastic decrease in the intraluminal pressure causing a vacuum effect on the upper lateral cartilages. This inward pull causes collapse of upper lateral cartilage (Bernoulli's principle). Total collapse of the internal nasal valve area during this scenario is prevented only by the resilience of the upper and lower lateral cartilages.

Collapse of external nasal valve area (alar area) is by contraction of dilator naris muscles during inspiration. During expiration the positive pressure prevailing inside the nasal cavity keeps the nasal valve area open.

Causes of Nasal Obstruction

1. Previous trauma / rhinoplasty or other surgical procedures (Causa occasionalis/ Tolle causum) - cause weakening of nasal valves.
2. Nasal septal deviation (Sycosis/ Syphilis)- increases occurrence of nasal obstruction.
3. Mucociliary clearance mechanism- in patients with deviated nasal septum is slowed (Causa diceret). Stagnant secretions inside the nasal cavity may aggravate nasal obstruction.
4. Penumatization of middle turbinate (Concha bullosa) which is an anatomical variant (Causa occasionalis)- can cause significant amount of obstruction in the middle meatal area. Massive concha may cause middle meatal nasal obstructive syndrome leading on to symptoms like headache, nasal block and anosmia. Usually, majority of these patients also have deviated nasal septum (DNS) which may aggravate nasal block.
5. Neuromuscular causes like facial palsy (Psora) and aging- may cause increased prevalence of nasal obstruction. Facial palsy may cause paralysis of dilator naris (Psora/ Syphilis) leading on to nasal obstruction. Aging can weaken the fibroareolar tissues (Syphilis) present in the lateral nasal wall leading to collapse of nasal valve area causing nasal obstruction.
6. Sinonasal inflammatory diseases (Psora/ Sycosis/ Pseudopsora)- are also etiological. Allergic rhinitis (Psora/ Pseudopsora) causes congestion and enlargement of nasal turbinates (Sycosis) and mucosa causing nasal block. Classically, nasal obstruction is worse on lying down.
7. Drug induced iatrogenic nasal block (Rhinitis medicamentosa) (Causa diceret) - rebound nasal congestion is very common. There is loss of ciliated columnar cells (Tolle causum) and increase in capillary permeability (Psora/ Sycosis) causing interstitial oedema (Sycosis). During early phases of rhinitis medicamentosa this oedema is reversible (Causa diceret). If it continues for a

period of more than 3 months it gradually becomes irreversible leading to difficult situations to manage.

8. Hypothyroidism (Psora/ Syphilis) may lead to nasal congestion and block due to unknown reason.
9. Pregnancy rhinitis (Rhinopathia gravidorum) (Causa diceret)- seen commonly during the first trimester of pregnancy can cause nasal block due to unknown mechanism. Generalized fluid retention during pregnancy (Psora) and exposure of nasal mucosa to persistently elevated levels of oestrogen (Sycosis) leads to persistent interstitial oedema (Sycosis). It has also been suggested that elevated levels of oestrogen and progesterone during pregnancy (Psora/ Sycosis) may cause rhinitis by causing a shift in the level of neurotransmitters like substance P and nitric oxide (Psora).
10. Trauma (Causa occasionalis/ Tolle causum)- may cause nasal block due to the following factors: tissue oedema causing physical blockage to airflow, secondary sinusitis, and impaired sensation to air flow due to damage sustained by nasal receptors.
11. Neoplasms (Cancerous)- involving the nasal cavity can cause nasal block. Nasal block in these patients may be associated with other non specific symptoms like epistaxis (Pseudopsora) and anosmia (Psora/ Syphilis) prompting the patient to seek medical attention.

Signs and symptoms of Nasal Obstruction

Subjective feeling of nasal block could be due to the following factors:

1. Sensitivity of pressure receptors in the nose (Psora/ Pseudopsora)
2. Sensitivity of thermal receptors in the nose (Psora/ Pseudopsora)
3. Sensitivity of pain receptors in the nose (Psora/ Pseudopsora)
4. Presence of excessive secretions in the nose (Psora/ Sycosis)

Patients with fixed anatomical nasal obstruction may experience intermittent symptoms secondary to nasal cycle and other autonomic phenomenon.

Role of Totality and clinical examination for nasal block

It is very important to elicit a complete history from the patient to point towards the correct cause for nasal block.

1. All patients should be quizzed for prolonged use of drugs, nasal drops which could cause iatrogenic nasal obstruction.
2. History of previous surgeries in the nose which includes cosmetic surgery should be asked.
3. Presence of midface deformities (congenital / due to injuries) should also carefully sought for.
- 4- History of mouth breathing and halitosis will invariably confirm the problem of nasal block.
4. Nasal cavities should be examined for evidence of sinusitis.
5. Any discharge from the nasal cavity indicates infection.
6. Adenoid hypertrophy should be ruled out in young children.
7. Assessment of facial nerve function should be done for its integrity. Facial nerve paralysis will hamper the splinting muscles of the ala of the nose causing collapse of the airway on inspiration.
8. Examination of the nasal cavity pertaining to airflow dynamics should be done for probable sites of nasal resistance.
9. Diagnostic nasal endoscopy is the most efficient way of completely examining the interiors of the nasal cavity.
10. Nasal endoscopy is a useful tool in assessing subtle nasal mucosal inflammatory changes like mucosal nodularity, friable mucosa and synechiae.
11. Use of radiology in assessing patients with nasal block is often helpful. CT scan is helpful in evaluating bony structural abnormalities like deviated nasal septum, choanal atresia, concha bullosa, inferior turbinate hypertrophy, F.B., rhinolith etc. MRI because of its excellent soft tissue imaging capacity is very useful in identifying lesions like meningocele, encephalocele etc.

Objective evaluation of nasal block:

The following tests would help us to objectively evaluate nasal block.

1. **Hygrometry-** This is one of the first methods to objectively assess nasal airway patency. This procedure is performed by asking the patient to breathe on a mirror. A comparison is made between the diameters of the fog produced by each nasal airway.
2. **Hum test-** the nasal airway is assessed by the change in timbre of the sound caused due to nasal block. The test is performed after decongesting one nose, blocking the decongested nose and asking the patient to hum a tune. The change in timbre caused due to block in the non decongested nose is noted.
3. **Peak nasal inspiratory flow-** this is determined by two factors i.e. Nasal obstruction and the maximum negative pressure generated by the lower airway. Hence changes in inspiratory effort or lower airway resistance will alter the peak nasal inspiratory air flow independent of nasal

obstruction. To overcome this problem Taylor suggested assessing Blockage index. Blockage index= Peak oral flow– Peak nasal flow/ Peak oral flow.

4. **Acoustic rhinometry-** Sound waves generated by acoustic rhinomanometer are transmitted through the nasal cavity; these sound waves get reflected back from the nasal passages and is recorded by the microphone placed at the entrance of the nasal cavity. These sound waves are converted to digital signals and a computer recording is made which is known as the “Rhinogram”. This can be used for studying- anatomical variations of nasal cavity, post surgical changes inside the nasal cavity, effect of drugs on nasal resistance, assessing the changes in the mucovasculature.
5. **Rhinomanometry-** This investigation involves the functional assessment of airflow inside the nasal cavity by measurement of transnasal pressure and airflow. Resistance from each nasal cavity can be compared.
6. **CT volumetry-** This imaging modality is highly accurate in measuring the volume of anterior nasal cavity but its accuracy reduces while measuring the volume of posterior nasal cavities.
7. **Nasometry-** During speech sound is transmitted through both the oral and nasal cavities. Nasal obstruction causes a reduction in the amount of sound transmitted through the nose. By measuring the nasal components of speech the patency of the nasal airway can be assessed. This is known as nasalance.
8. **Cottle's test-** In this test the cheek of the patient is pulled outwards and upwards. If it affords relief from nasal block then obstruction should be considered to be due to anamalous / abnormal nasal valve area. False negative Cottle's test is possible when the presence of synechia in the nasal valve area prevents opening up of this zone when this test is being performed. As a first step the internal nasal valve area should be examined endonasally as this area contributes the maximum to the airway resistance. This area should be examined just by lifting the tip of the nose. Introduction of nasal speculum would distort this area and hence should be avoided.
9. **Odisoft rhino-** This technique converts the frequency of sound generated by airflow into cross sectional area measurements.

Treatment of nasal block

Top remedies for nasal block-

Lach > Nux v > Sil > Hell > Lyc > Ars alb > Kali bi > Mangan > Lemn min > Spig > Hydr > Sep > Amm c > Samb > Calc > Aur > Puls > Nat c > Phos > Kali I > Thuja > Arum t > Staph > Ozone > Cham > Carb v > Kali m > Aur m > Nit ac > Petr > Teuc > Zinc > Dulc > Sel > Anac > Graph > Cann s > Caust > Con > Kali c > Mrec cy > Mag m > Mur ac > Nat m > Bry > cupr > Elaps > merc s > Sang > Stann > Sticta > Arg met > Laur > Med etc...

Short Repertory of Nasal block-

- CORYZA - Coryza, catarrh - fluent - obstruction of nose, relieving- **LACH**.
- CORYZA - Coryza, catarrh - obstruction, with - relieving – nose- **SIL**.
- Coryza - dry - nose, obstruction with- **mang**.
- CORYZA - Stopped, obstructed - forepart of nose- **arg-met. SPIG**.
- CORYZA - Stopped, obstructed - posterior part of nose- **anac. hydr. iris kali-i. petr. Staph**.
- Diphtheria, infection, membranes - nose, in - obstruction, with- **am-c. hydr. Kali-m. Lyc. Merc-cy**.
- FACE - PAIN - Cheeks - alternating with - Nose; obstruction of- **ozone**
- HEAD - OBSTRUCTION of nose agg.- **croc. kali-bi. Lach. nat-c**.
- HEAD - PAIN - accompanied by - Nose - obstruction of- **bamb-a. calc. chir-fl. lach. ozone phos. sang. Stict. thuj**.
- Hearing - NOISES, in ears - buzzing - obstruction, with, of nose- **Lach**.
- Lungs - ASTHMA, general - nasal obstruction, with- **lem-m**.
- MIND - Aggravation - nose – obstructed- **zinc**.
- MOUTH - Throat (and gullet) - alternating with obstructed nose- **lach**.
- NOSE - CATARRH - accompanied by - Nose - obstruction of- **anemps. brass-n-o**.
- NOSE - CORYZA - discharge - without, dry - obstruction of nose, with- **mang**.
- NOSE - CORYZA - discharge, with - obstruction; with- **Ars**.
- NOSE - CORYZA - general - discharge - without, dry - obstruction of nose, with- **mang**.
- Nose - CORYZA, general - discharge, without, dry - nose, obstruction, with- **mang**.
- Nose - CORYZA, general - nose, obstruction, with- **ars**.
- NOSE - DISCHARGE - crusts, scabs, inside - morning, obstructing respiration- **ozone**
- NOSE - DISCHARGE - nares, posterior, choanae - obstruction of nose, with- **kurch. vinc**.
- NOSE - Discharges - lumpy, plugs, obstructive- **Kali-bi. mag-p. mur-ac. phos. SEL. sep. SIL**.
- NOSE - DRYNESS - inside - obstruction, with- **rumx**.
- NOSE - DRYNESS - Inside - obstruction; without- **Sep**.
- Nose - Enlarging and obstructing vision, nose were- **cann-s**.
- Nose - flows - obstruction, with- **ars. arum-t. bry. calc. kali-bi. Lach. merc. nux-v. onos. puls. sil**.

- Nose - Leaflet were at root of nose obstructing smell- kali-i.
- Nose - OBSTRUCTED, sensation of - post-nasal- hydr. lac-ac.
- Nose - OBSTRUCTED, sensation of- agar. arum-t. Aur-m. AUR. bar-c. cann-s. Cham. cob. cupr. eucal. ferr-i. Ham. Hydr. hydrog. kali-bi. laur. mag-m. meny. merc-c. nat-ar. nat-c. nat-s. NUX-V. stann. stram. thuj. zinc. zing.
- Nose - Obstructing vision, nose were enlarging and- cann-s.
- NOSE - OBSTRUCTION - alternating with - pain in - nose, root of- pitu-a.
- NOSE - OBSTRUCTION - foul smell from the nose and foul taste in the morning on waking- lem-m.
- NOSE - OBSTRUCTION - general - alternating with - pain in - nose, root of- pitu-a.
- NOSE - OBSTRUCTION - general - foul smell from the nose and foul taste in the morning on waking- lem-m.
- NOSE - OBSTRUCTION - general - night - breath through nose, cannot- am-c.
- NOSE - OBSTRUCTION - general - rubbing tip of nose amel.- tarent-c.
- NOSE - OBSTRUCTION - leaflet, as from a - Root of nose- kali-i.
- NOSE - OBSTRUCTION - night - breath through nose, cannot- am-c.
- NOSE – OBSTRUCTION- acon. aesc. aeth. Agar. agra. ail. All-c. Alum. alumin-p. alumin-sil. am-br. Am-c. am-caust. Am-m. Ambr. ambro. ammc. anac. androc. ant-c. ant-t. antip. apis apoc. aq-mar. aral. arg-met. Arg-n. arn. ARS-I. ars-met. ars-s-f. ARS. ARUM-T. asaf. asar. asc-t. aur-ar. aur-i. aur-m-n. Aur-m. aur-s. AUR. bad. Bamb-a. bapt. bar-c. bar-i. Bar-m. bar-s. bell. beryl. Borx. Bov. brom. bry. bufo cact. cadm-s. calad. calc-i. calc-p. Calc-s. calc-sil. CALC. camph. cann-s. CAPS. Carb-ac. Carb-an. CARB-V. CARBN-S. castm. CAUST. cench. Cham. cheir. chel. Chin. chinin-ar. chlor. choc. cic. cimic. cina cob. coc-c. cocc. coff. colch. Coloc. CON. cop. cor-r. croc. crot-t. Cupr. cycl. Dig. dios. dros. Dulc. echi. Elaps eucal. eup-per. euphr. fago. ferr-i. ferr-m. fl-ac. form. gels. glon. glyc. GRAPH. grat. guare. Ham. helia. Hell. Hep. hist. Hydr. Hydrog. ign. ind. Iod. Ip. iris just. Kali-ar. KALI-BI. Kali-c. Kali-chl. Kali-i. kali-m. kali-n. Kali-p. kali-perm. kali-s. kali-sil. kalm. kreos. lac-ac. lac-c. Lach. lat-m. laur. led. lem-m. lil-t. limest-b. lith-c. LYC. mag-c. Mag-m. mag-s. manc. Mang. marb-w. med. mentho. meny. Merc-c. merc-chli. merc-i-f. Merc. Mez. mill. mosch. Mur-ac. naja Nat-ar. NAT-C. NAT-M. nat-p. Nat-s. nat-sil. nicc-met. NIT-AC. Nux-m. NUX-V. oci-sa. ol-an. op. osm. Ozone par. pen. Petr. ph-ac. phel. PHOS. phys. Phyt. pic-ac. Pitu-a. plat. plb. prot. psil. Psor. Pull-g. PULS. pyrog. rad-br. ran-b. raph. rat. Rhod. Rhus-t. rhus-v. Rumx. Sabad. SAMB. Sang. sangin-n. sapo. saroth. sars. sec. sel. Seneg. Sep. SIL. Sin-n. sol-ni. spig. Spong. Stann. staph. Stict. stram. Sul-ac. Sulph. Sumb. syc. syph. tab. tarent-c. tell. TEUCR. thuj. til. trom. upa. uran-n. verb. vinc. xan. zinc-i. zinc-phic. Zinc. zing. ziz.
- Nose - OBSTRUCTION, nose - nose, obstruction, wet weather agg.- calc. Dulc. elaps lem-m. Mang.
- Nose - OBSTRUCTION, nose - post nasal- anac. Calc-s. hydr. iris kali-bi. kali-i. med. nat-ar. petr. puls. sin-n. staph. Thuj. zing.
- NOSE - POLYPUS - obstruction of nose, with- aur. calc. hecla merc-i-f. teucr.
- NOSE – SNUFFLES- am-c. Asc-t. aur-m. Aur. elaps LYC. NUX-V. puls. SAMB.
- RESPIRATION - ASTHMATIC - accompanied by - Nose; obstruction of- bit-ar.
- RESPIRATION - ASTHMATIC - nasal obstruction, with- lem-m.
- RESPIRATION - IMPEDED, obstructed - constriction, contraction - nose, of- HELL.
- RESPIRATION - IMPEDED, obstructed - contraction - Nose; of- Hell.
- RESPIRATION - IMPEDED, obstructed - dryness of – nose- canth.
- RESPIRATION - IMPEDED, obstructed - dryness; from - Nose; in- canth.
- RESPIRATION - IMPEDED, obstructed - nose is impeded; breathing through- euph. lach. puls.
- RESPIRATION - IMPEDED, obstructed - scabs in nose; from- ozone
- RESPIRATION - SNORING - obstruction of the nose, from- lem-m.
- SENSATIONS AND COMPLAINTS IN GENERAL - Infants, affections of - nose, obstructed- Carb-v. Cham. Dulc. NUX-V. SAMB.
- THROAT - COMPLAINTS of throat - alternating with - Nose; obstruction of- lach.
- Throat - DIPHTHERIA, infection - nose, in - obstruction, with- am-c. hydr. Kali-m. Lyc. Merc-cy.
- THROAT - MEMBRANE - accompanied by - Nose; obstruction of- am-c. hydr. Kali-m. Lyc. Merc-cy.

Surgical management of nasal obstruction

1. Septal correction – if nasal block is attributed to septal deviation / spurs
2. Anatomical abnormalities like concha bullosa should also be corrected surgically

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