

Intrinsic Rhinitis

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Abstract

Intrinsic rhinitis is defined as a non infective and non allergic condition characterised by nasal block, rhinorrhoea and hyposmia. This is purely a medical condition. Awareness of this condition will help us to avoid unnecessary surgical procedures on patients suffering from this disorder. Surgery should be reserved only for cases that are intractable to medical management. This article discusses the complete gamut of this disorder.

Intrinsic Rhinitis

Introduction:

Rhinitis is inflammation of nasal mucosa characterized by nasal discharge, itching and congestion. It affects 20% of the population¹.

Intrinsic rhinitis is defined as a non infective and non allergic condition characterized by nasal block, rhinorrhoea and hyposmia. This is purely a medical condition.

Intrinsic rhinitis encompasses two separate disease entities². These entities show:

1. inferior turbinate hypertrophy
2. nasal polyp formation.

symptoms

Symptoms of intrinsic rhinitis

Symptom	Eosinophilic	Non eosinophilic
Obstruction	Moderate / severe	Mild
Rhinorrhoea	Mild / Moderate	Severe
Sneezing / Pruritis	Minimal	Minimal
Hyposmia	Usual	Rare
Mucosal swelling	Marked	Mild
Inferior turbinate enlargement	Marked	Mild
Polypi	common	Never
Sinus mucosal	Common	Rare

thickening		
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Clinical presentation:

Rhinitis is generally characterised by 6 main symptoms: They are

1. Congestion
2. Sneezing
3. nasal itching
4. rhinorrhoea
5. hyposmia
6. post nasal discharge

Among these main symptoms nasal itching and sneezing are features of allergic rhinitis and hence are not seen in intrinsic rhinitis. All the other symptoms are manifested in intrinsic rhinitis.

Seebohm identified two groups of patients amongst those suffering from perennial rhinitis. One group had eosinophils in their nasal secretions while the other did not have any eosinophils in their nasal secretions. Accordingly he classified intrinsic / perennial rhinitis into eosinophilic and non eosinophilic types.

Eosinophilic group: This group is characterised by marked nasal congestion, profuse rhinorrhoea, hyposmia, inferior turbinate hypertrophy and mucoid nasal secretion. Nasal polyposis frequently occurred in this group of patients.

Non eosinophilic group: In these patients nasal obstruction is very mild, rhinorrhoea is very severe. They do not have significant mucosal swelling. Inferior turbinate hypertrophy is not significant. Tendency of nasal polyp formation is rare in this group.

Aetiology of intrinsic rhinitis:

Theories regarding aetiology of intrinsic rhinitis are:

1. Autonomic imbalance
2. Airway hyperreactivity
3. Allergic reaction to unidentified allergen
4. Disturbances of Beta receptor function

Mechanisms of Beta receptor dysfunction:

1. Down regulation caused by excess endogenous noradrenaline stimulation.
2. Down regulation and uncoupling of adenylate cyclase produced by the inflammatory mediator induced activation of protein kinase.
3. The action of Beta receptor inhibitory factor presumed to be an anti beta receptor autoantibody.
4. Dysfunction of Beta receptor kinase causing short term desensitisation of beta receptors after exposure to beta agonists.

Role of autonomic nervous system in causing intrinsic rhinitis:

The autonomic nervous system exerts its effects by secreting neurotransmitters at their nerve

endings. The neurotransmitters secreted are adrenaline, noradrenaline, vasoactive intestinal polypeptide, acetylcholine and neuropeptide Y.

The nasal resistance to air flow is controlled by sympathetic system, whereas the nasal glands are innervated by parasympathetic nerves. Increased parasympathetic outflow causes glandular hypersecretion. Vaso active intestinal polypeptide has been known to cause this effect. The vasodilatation caused due to the effects of vaso active intestinal polypeptide is resistant to the effects of atropine.

Management:

Majority of patients with intrinsic rhinitis benefit from medical management. Only a few require

Medical management of intrinsic rhinitis:

Topical iso tonic saline spray can be used for both forms of intrinsic rhinitis. Saline spray causes a reduction of post nasal drip, sneezing and nasal congestion ³.

Topical intranasal administration of Capsaicin (derived from pepper). This irritant chemical desensitizes the sensory nerve endings of the nasal mucosa thereby reducing nasal hyperactivity ⁴.

Eosinophilic type:

Steroids – Topical e.g. fluticasone, budesonide. A short course of systemic steroids can be administered.

Alpha receptor agonists – Systemic e.g. pseudoephedrine Topical e.g. xylometazoline (short course)

Mast cell stabilisers – Topical cromoglycate solution.

Non eosinophilic type :

Anti cholinergic – Topical e.g. ipratropium Hyosine administered orally or as a patch.

Anti cholinergic / sympathomimetic – Imipramine orally, chlorpheniramine orally.

Surgical Management

Surgical management of Intrinsic rhinitis

Symptom	Aim	Surgery
Nasal obstruction	Turbinate reduction	Submucosal diathermy
Rhinorrhoea	Turbinate resection Vidian neurectomy	Cryosurgery Laser surgery Partial resection Submucosal turbinectomy Radical turbinectomy Excision of vidian nerve Endoscopic vidian neurectomy

References

1. Powe DG, Huskinson RS, Carney AS, et al. Evidence for an inflammatory pathophysiology in idiopathic rhinitis. Clin Exp Allergy 2001;31:864 - 9.

2. Settupane RA, Settupane GA. Nonallergic rhinitis. In: Kaliner MA, ed. *Current Review of Allergic Diseases*. Philadelphia: Current Medicine, 1999.
3. Bronsky EA, Druce H, Findlay SR, Hampel FC. A clinical trial of ipratropium bromide nasal spray in patients with perennial nonallergic rhinitis. *J Allergy Clin Immunol* 1995;95:1117-1122.
4. Stjärne P, Lundblad L, Änggard A, et al. Local capsaicin treatment of the nasal mucosa reduces symptoms in patients with nonallergic nasal hyperreactivity. *Am J Rhinology* 1991;5:145-151.