

DEFINITION

1. **Rhinitis** may be defined as that condition giving rise to one or more of the symptoms of nasal obstruction, increased secretion of mucus and sneezing. Some vasomotor disturbance is common to all forms of rhinitis.

CLASSIFICATION

2. The various forms of rhinitis may be classified as follows -
 - 2.1. Mechanical (trauma, tumour or foreign body)
 - 2.2. Allergy
 - 2.3. Mucociliary clearance abnormality
 - 2.4. Granulomatous conditions
 - 2.5. Autonomic imbalance
 - 2.6. Hormonal
 - 2.7. Iatrogenic

CLINICAL MANIFESTATIONS

3. The condition may present with any combination of nasal irritation, sneezing, nasal obstruction, watery discharge, conjunctival irritation and increased lacrimation.

AETIOLOGY

4. The cause of rhinitis depends upon the type.

Mechanical obstruction rhinitis

5. This may result from -
 - 5.1. deviation of the nasal septum, the nose or both
 - 5.2. enlargement of the turbinates or adenoids
 - 5.3. tumours, malignant or otherwise
 - 5.4. foreign bodies, particularly in children

Allergic Rhinitis (Extrinsic)

6. This arises from altered reactivity to an exogenous antigen (allergen). For clinical purposes, atopic individuals may be identified as those who react to more than one group of allergens in a standard range of allergens used for skin prick tests. Atopy tends to run in families.
 - 6.1. The major immunoglobulin class responsible for Type 1 (anaphylactic) reactions in man is IgE which is produced in large amounts by allergic (atopic) individuals on exposure to common allergens.
 - 6.2. There may be various predisposing factors in the development of symptoms. The airway of subjects with allergic rhinitis is seen often to be hyper-reactive to a series of non-specific stimuli which include ambient air temperature, humidity and pollution. Cold air inhalation stimulates nasal glands and reduces nasal patency. Low indoor humidity is an important cause of nasal symptoms. Sulphur dioxide is a common outdoor air pollutant which not only acts as an irritant but also impairs the mucociliary function of the nose. Inert dust will regularly provoke symptoms in a hyper-reactive mucous membrane as will smoke, fumes and irritant smells.
 - 6.3. **Seasonal allergic rhinitis (hay fever)** results from an allergy to the pollens of grasses, flowers, trees and shrubs. It affects the nasal mucous membranes. The pharyngeal, conjunctival and bronchial mucous membranes may also be involved. It commences, as a rule, during the first half of life.
 - 6.4. **Perennial nasal allergy.** The causes of perennial allergy are house dust, house-dust mite and moulds. Food allergens, which are often not discovered, are important. The common food allergens are cows' milk proteins, eggs, fermented drinks and citrus fruits. How far food additives, such as trace antibiotics in milk are important, is unknown.
 - 6.5. **Hypertrophic rhinitis.** Hypertrophic rhinitis occasionally arises as a result of chronic infection in the nose or paranasal sinuses. Several decades ago infection was considered to be the most likely aetiological factor in chronic hypertrophic rhinitis, but, nowadays, though the condition is still common, infection is a relatively infrequent cause.
 - 6.6. **Atrophic rhinitis.** Atrophic rhinitis is a chronic nasal disease characterized by progressive atrophy of the mucosa and underlying bone of the turbinates and the presence of a viscid secretion which rapidly dries and forms crusts which emit a characteristic foul odour sometimes called ozaena (a stench). There is an abnormal patency of the nasal passages. The aetiology of atrophic rhinitis is still unknown. In the past numerous organisms have been cited as the cause, among which are *Coccobacillus*, *Bacillus mucosus*, *Coccobacillus foetidus* ozaena, diphtheroid bacilli and *Klebsiella ozaenae*.

Whilst these organisms may be found in cultures there is little evidence that they cause the disease. Other factors which have been regarded as possible causes are chronic sinusitis, excessive surgical destruction of the nasal mucous membrane and syphilis.

6.7. Atrophic rhinitis usually commences at puberty and is much more common in females than males; thus it is generally accepted that endocrine imbalance may play a part. Heredity is an important factor and there appears to be a racial influence in that the yellow races, Latin races and American Negroes are relatively susceptible whereas the incidence is low in natives of equatorial Africa. Poor nutrition is undoubtedly a factor in the development of the condition and Bernat (1965) considers that atrophic rhinitis is an iron-deficiency disease.

Mucociliary clearance abnormality

7. This may exist in –

7.1. **Primary** form, as in **Young's syndrome** and **Kartagener syndrome**, the causes of which are unknown.

7.2. **Secondary** form, as a sequel to infection in the upper respiratory tract.

Granulomatous conditions

8. These forms result from a host response to certain infective conditions such as actinomycosis, aspergillosis, blastomycosis, histoplasmosis, leprosy, rhinoscleroma, tuberculosis and syphilis.

Autonomic imbalance

9. This may result from -

9.1. **emotional** reaction to either life in general or to specific events such as arguments, public appearances etc. It has been shown that emotional factors do affect the nose, fear producing vasoconstriction and frustration, humiliation and anxiety producing engorgement of the mucous membranes. Such effects are, however, usually temporary.

9.2. **hyper-reactivity** of the mucous membranes due to parasympathetic over-reactivity, leading to an increased tendency to over-reaction of the mucous membranes to endogenous (physical stress, mechanical stimulation) or exogenous (thermal stimulation, humidity) stimuli.

Hormonal changes

10. There is considerable clinical evidence that both male and female hormones affect the nasal mucosa. Rhinitis is often associated with puberty, sexual excitement, menstruation and pregnancy.

Iatrogenic effects

11. **Rhinitis medicamentosa** is the name often given to rhinitis resulting from abuse by overuse of topical nasal decongestants.

12. **Aspirin intolerance** may occasionally present with chronic rhinitis although the mechanisms involved are not known.

13. Other drugs which may cause a rhinitis are -

13.1. alpha-adrenergic blocking agents, such as guanethidine and bretylium tosylate, used in the treatment of hypertension.

13.2. beta-agonists such as isoprenaline.

13.3. drugs used to produce peripheral vasodilatation, such as the ergot alkaloids.

13.4. drugs which inhibit cholinesterase and potentiate the action of acetylcholine, such as neostigmine.

CONCLUSION

14. Chronic Rhinitis may be due to a variety of causes (which are listed above) or may, in a particular case, not be shown to have an identifiable cause at all. The allergic type is the most common form of the condition which is encountered.

REFERENCES

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