

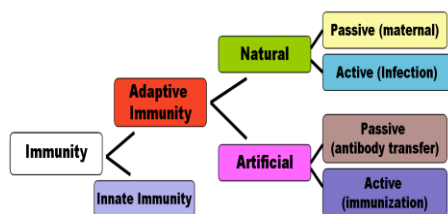
Oral Manifestations of the Allergic Conditions

Immunity : Is the ability of an organism to resist infections .

It is divided into :-

A- Species (innate) immunity e.g. rat is immune to syphilis

B – Adaptive (acquired) immunity Ab development to destroy Ag



Bacteria and virus (Ag) are soluble proteins introduced into the host cell and stimulate reticuloendothelial system (spleen, lymph nodes, bone marrow) to produce Ab

Anti bodies (Ab), are altered serum globulin molecules when brought in contact with protein or microbes (i.e. Antigen) their production would be excited.

The Ag may be destroyed by :

Agglutination

Precipitation

Lyses

Neutralization

Production of phagocytosis

Allergy:

Immunologic reactions are detrimental to the tissue or physiology of the host.

Antibodies are immunoglobulins produced by plasma cells and of 5 types :

IgA, IgD, IgE, IgG, IgM

The Ab are located either in :

1- Circulation (in blood stream).

2- Fixed (to cells).

Immunoglobulins

IgA can be found in areas containing mucus (e.g. in the saliva, gut, respiratory tract and in the urogenital tract) and prevents the colonization of mucosal areas by pathogens.

IgD functions mainly as an antigen receptor on B cells.

IgE binds to allergens and triggers histamine release from mast cells (the underlying mechanism of allergy) and also provides protection against helminths (worms).

IgG (in its four forms) provides the majority of antibody-based immunity against invading pathogens.

IgM is expressed on the surface of B cells and also in a secreted form with very high affinity for eliminating pathogens in the early stages of B cell mediated immunity (i.e. before there is sufficient IgG to do the job).

When the individual exposed to the same Ag two things happen :

1- Ag may be neutralized or destroyed in the blood stream, by circulating Ab (person is immune).

2- The circulating Ab are not enough to destroy Ag, later reach the tissue cells where it reacts with fixed Ab.

The reaction leads either to;

- * Destroy the cell**
- * Release of histamine (as Angioedema, Skin rash, Hay fever, Urticaria).**
- * Spasm of smooth muscles (Asthma)**

Allergens

are substances that stimulate the immune reactions and divided into:-

A- Soluble proteins (e.g. those in bacteria and viruses).The condition is called bacterial allergy as in tuberculin test.

B- Non bacterial substances (fresh fruits & vegetables, fish, feather, hair, pollen, milk, drugs...etc) This condition is called atopy (hereditary).

Depending on the speed, allergy may be classified into :

1- Immediate (or anaphylactic) reactions.Occur in seconds up to 30 minutes.

2- Accelerated reactions Occur in 1 hr to 72 hrs.

3- Delayed reactions Occur in days or weeks

Anaphylaxis typically presents many different symptoms over minutes or hours with an average onset of 5 to 30 minutes. The most common areas affected include:

. Skin Symptoms typically include generalized hives, itchiness, flushing, or swelling.

. Respiratory symptoms and signs that may be present include shortness of breath, wheezes, or stridor.The wheezing is typically caused by spasms of the bronchial muscles while stridor is related to upper airway obstruction secondary to swelling.Hoarseness, pain with swallowing, or a cough may also occur.

. Gastrointestinal, symptoms may include crampy abdominal pain, diarrhea, and vomiting. There may be confusion, a loss of bladder control or pelvic pain similar to that of uterine cramps.

. Dilation of blood vessels around the brain may cause headaches. A feeling of anxiety

. Heart and vasculature Coronary artery spasm may occur with subsequent myocardial infarction, dysrhythmia, or cardiac arrest. Those with underlying coronary disease are at greater risk of cardiac effects from anaphylaxis. The coronary spasm is related to the presence of histamine-releasing cells in the heart. While a fast heart rate caused by low blood pressure is more common,a Bezold–Jarisch reflex has been described in 10% of cases where a slow heart rate is associated with low blood pressure A drop in blood pressure or shock (either distributive or cardiogenic) may cause the feeling of lightheadedness or loss of consciousness.Rarely very low blood pressure may be the only sign of anaphylaxis,

In sensitized person; allergic reaction of the oral tissues could be due to:

Systemic intake (drug eruption, stomatitis medicamentosa)

Direct contact (contact stomatitis, stomatitis venenata)

Materials used in dental practice that may stimulate allergic reactions are;

- Rubber or latex (gloves, rubber cups, rubber dams)**
- Formalin (in endodontic therapy, tooth pastes)**

- **Fillings** (isopaste, light cure, free mercury of amalgam)
- **Impression materials** (rubber base, silicon)
- **Lining materials**
- **Dentures** (acrylics, chrome-cobalt, gold alloys)
- **Other chemicals and materials** (haptane, phenol, procaine, lip sticks, cinnamon, and flavors in mouth washes...etc)

Clinical Findings of the oral tissue reactions to the allergens:

1- Swellings (e.g. Angioedema)

2- Ulcerative Lesions (e.g. Allergic mucositis, Erythema Multiforme)

3-White lesions (e.g. Lichenoid eruptions)

4-Red lesions (e.g. Plasma cell gingivitis)

1- Angioedema (Angioneurotic Oedema)

- **Well demarcated localized bilateral painless swelling (edema) which makes it different from periapical abscess of the anterior teeth.**
- **It involves the deeper layers of the skin including the subcutaneous tissue.**
- **The lips are the common site but may occur anywhere on skin or mucous membrane.**
- **Recurrent episodes of urticaria and/or oedema**
- **if less than 6 weeks duration are considered acute attacks existed beyond this period are designated chronic.**

Causes of the reaction:

a- A significant cases are idiopathic

b- Ingestion of food drug or contact with allergen

c- A recurrent form is inherited as an autosomal dominant trait.

Management

Avoidance of the allergen (food, pollen, drug) and use of antihistamines, cortisone and adrenalin in sever form.

Hereditary type does not respond to antihistamines, corticosteroids, or epinephrine and in an emergency, fresh frozen blood plasma should be given i.v.

2- Allergic stomatitis

*** Localized area of erythema**

*** Oedematous tissue**

*** Vesiculation or bullous eruption**

*** Ulceratives lesions (cracking, fissuring of lips, and angular chelitis) may be associating oral findings.**

3- Lichenoid drug eruptions

The incidence of oral lesions without skin eruptions is common.

The etiology is mostly due to drug intake (e.g. antibiotics, antihypertensives, antiarrhythmics, antimalarials, dental materials..etc)

The clinical and the pathogenesis are identical to lichen planus.

4- Plasma cell gingivitis

It is a rare condition; the cause of which is still not fully understood and is characterized by massive infiltration of plasma cells into the subepithelial tissue.

Clinical complication due to contact allergy characterized by generalized erythematous, edematous attached gingiva usually accompanied by inflammation of the lip and tongue.

The disease should be distinguished from neoplastic plasma cell disease such as plasma cytoma, and multiple myeloma.