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Pathophysiology and Treatment of Life-Threatening Angioedema

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**Introduction**

Angioedema is a potentially lethal swelling of the interstitial space from extravasation of intravascular plasma fluid, causing swelling of the airway, face, mouth, or oropharynx. Angioedema may present in any medical setting with a wide range of severity. Angioedema is commonly seen in emergency departments and intensive care units. According to Barbara, Rana, Moellman, and Barski (2014), “angioedema is of particular importance to anesthesiologists, as it may present at any point in the perioperative period and may rapidly become life threatening if it involves airway compromise” (p. 335).

**Pathophysiology of angioedema**

Angioedema can be caused by reactions to many different substances including drugs, food, and insect bites/stings (Barbara et al., 2012). The most common drugs associated with angioedema are angiotensin-converting enzyme (ACE) inhibitors, ARBs, antibiotics, muscle relaxants, vaccines, and radiocontrast agents (Barbara et al., 2012). Sonny, Penzel, Bousquet, and Bousquet (2015) note a 1.3% to 5.1% incidence of angioedema following infusion of recombinant tissue plasminogen activator (rtPA). Hereditary angioedema is an IgE mediated (histaminergic) or bradykinin mediated (non-histaminergic) angioedema which may present at any point in the perioperative period and may rapidly become life threatening if it involves airway compromise (Wood et al., 2013).

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**Characteristics of Edema**

- **Non-pitting**
- **Non-gravity dependent**
- **Often asymmetric**
- **Transient**
- **Self-limiting**
- **Location**
  - Face
  - Glottis
  - Structures
  - Eyelids
  - Tongue
  - Extremities
  - Mucous
  - Trunk
  - Genitals

**Signs and Symptoms**

- Dyspnea
- Hypovolemic shock
- Genitals
- Weakness
- Non-abdominal pain
- Odynophagia
- Fluid
- Medical & family history
- Face
- Trunk
- Urticaria
- Neck
- Stridor
- Throat
- Glottic
- Drooling
- Continuous

**Significance of Pathogenesis**

The evaluation of patients with angioedema, as well as the classification of angioedema, is increasingly important. The recognition of angioedema is becoming more common with increased use of ACE inhibitors. Hereditary angioedema should be recognized with a detailed family history, and prophylactic treatment prior to surgery is recommended (Moellman et al., 2014). Patients presenting with angioedema solely on healthcare providers to possess the clinical skill and medical equipment to prevent adverse outcomes.