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Case Report

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A Rare Case of Angioedema Face due to Fish Allergy - A Case Report

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ABSTRACT

Angioedema is defined by World Allergy Organization as a transient swelling of the skin or submucosal surface due to increased vascular permeability of small venules. Most common etiologies include IgE-mediated allergic reactions (to food, drug, or environmental triggers), nonsteroidal anti-inflammatory drug (NSAID), and chemically induced histamine release (most commonly opiates, highly cationic antibiotics, and muscle relaxants). Recent publications show a global incidence of anaphylaxis between 50 and 112 episodes per 100 000 person-years while the estimated lifetime prevalence is 0.3-5.1%. Timely intubation and administration of steroids/ antihistaminic agents will prevent a catastrophic cannot intubate cannot ventilate situation. In small, resource limited environment of a field hospital which may be compared to a rural setting in India managing such emergencies is challenging. If available in a case of anticipated difficult airway like this difficult airway cart must contain a whole armamentarium of airway adjuncts and gadgets. History of consumption of fish (Nile Perch) a rare form of allergen causing airway and breathing issues leading to timely intubation saved the life of patient.

Introduction

Angioedema is defined by World Allergy Organization as a transient swelling of the skin or submucosal surface due to increased vascular permeability of small venules. The overlying skin may be normal or mildly erythematous. Angioedema is characterized by being non-pitting & non-dependent. Which may last up to seven days due to the accumulation of vasoactive substances. Most common etiologies include IgE-mediated allergic reactions (to food, drug, or environmental triggers), nonsteroidal anti-inflammatory drug (NSAID), and chemically induced histamine release (most commonly opiates, highly cationic antibiotics, and muscle relaxants). Angioedema can be caused by either mast cell degranulation or activation of the kallikrein-kinin cascade [4]. In the former case, angioedema can be caused by allergic reactions caused by immunoglobulin E (IgE) mediated hypersensitivity to foods or drugs that can also result in acute urticaria or a more generalized anaphylactic reaction. Angioedema face is of particular interest to anesthesiologist as it makes the airway difficult for any elective or emergency surgery may even lead to postponing the surgery for 7 days or till edema subside.

The general population has a lifetime prevalence of 7.4% for angioedema [2]. Less than 1% - 2% of angioedema cases are characterized as either Hereditary Angioedema (HAE) or Acquired Angioedema (AAE), with HAE having been noted to be about ten times more common than AAE. Chronic urticaria affects 2-3% of individuals (lifetime prevalence) and significantly reduces quality of life (QoL). Recent publications show a global incidence of anaphylaxis between 50 and 112 episodes per 100 000 person-years while the estimated lifetime prevalence is 0.3-5.1%, variations depending on the definitions used, study methodology, and geographical areas [3].

Case

A 43 Yrs. old male patient resident of Malakal South Sudan, was rushed to accident and emergency at night 2300h with sudden onset swelling of lower face, lips, and tongue. Patient was accompanied by friends who gave history of consumption of fish (Nile Perch) for dinner at around 2200 hrs. Patient was managed on guidelines of anaphylaxis to food. He had a heart rate of 130/min regular, blood pressure of 106/78 mm Hg, SPO2 98 % on face mask and respiratory rate of 20/min. An 18 G IV cannula was inserted, and fluid was administered. Patient was given Inj Hydrocortisone 200 mg IV intravenously, Inj Pheniramine maleate 50 mg slow intravenously and oxygen by face mask. Patient started to develop difficulty in breathing. For maintaining the airway, we decided to intubate the patient immediately. Other than the obvious oedema of airway we had difficulty in positioning, patient was restless, and edema was extending to neck. Patient was given Inj Propofol 40 mg iv slow for sedation and Macintosh laryngoscope was used to secure PVC cuffed 7 mm ID endotracheal tube. Keeping in view of oedema intentionally smaller size tube was chosen in this case. While intubation patient developed hypotension with BP 86/48 mm Hg, which was promptly managed by rushing fluid bolus and

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Inj Mephenteramine 6 mg iv bolus was given. We did not face any problems due to edema and swelling while intubation. Post intubation patient was shifted to ICU where he was ventilated for 12 hrs. under the sedation cover Inj fentanyl 1-2 mcg/kg/hr. A local application of Glycerine and magnesium sulfate was applied on face and lips to reduce swelling. Patient recovered completely and was extubated next day at 1200 hrs. discharged to home after 2 days of hospital stay [4].

Figure 1: Angioedema in case of fish allergy

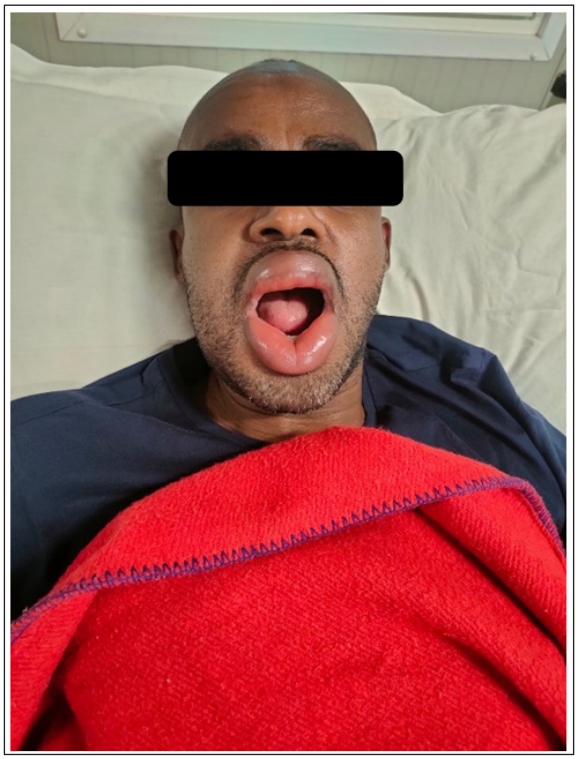

Figure 2: Difficult airway in case of Angioedema

Discussion

In United states, Angioedema accounts for 80,000 - 112,000 emergency department (ED) visits per year, out of which hospitalizations are 4.0 per 100,000 population [5]. Angioedema commonly involves face, lips, tongue, throat, and genital areas. Swelling usually lasts between one to three days. Rarely it may lead to airway compromise which may be life threatening. Timely intubation and administration of steroids/ antihistaminic agents will prevent a catastrophic cannot intubate cannot ventilate situation. In this small, resource limited environment of a field hospital which may be compared to a rural setting in India managing such emergencies is challenging. If available in a case of anticipated difficult airway like this difficult airway cart must contain a whole armamentarium of airway adjuncts and gadgets. Video laryngoscopes and awake fiberoptics are a boon in such situations. Angioedema or any severe allergic reaction is not just anatomical difficult airway it is also physiologically difficult airway. Patients are hypoxic and hypotensive, may not tolerate a loading dose of induction agent. Cardiac status of patients is also not known in emergency situations like this. Although fish allergy is a commonly reported IgE-mediated food allergy, most studies have been limited to children and select species of fish [6]. Signs and symptoms frequently reported include, facial angioedema, pruritus, generalized urticaria, cough, wheezing and dysphagia. In this case Nile Perch fish was consumed which has been identified to have allergic potential [7]. But no severe allergic reaction has been reported till now. Severe allergic reaction can be considered as a perfect example of anatomical and physiological difficult airway and anesthesiologist / Accident emergency department should be prepared to manage one.

Conclusion

Angioedema face is a difficult airway anatomically and physiologically. Difficult airway cart must contain smaller size endotracheal tubes. Anesthesiologist should be prepared to manage life threatening hypoxia and hypotension in a fish allergy case also.

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