Supraglottic oedema secondary to a Dabigatran excipient

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INTRODUCTION

Dabigatran is a direct thrombin inhibitor taken orally to prevent thrombus formation. It is administered as a pro-drug, Dabigatran etexilate due to the poor bioavailability of Dabigatran[1]. Absorption of Dabigatran etexilate is enhanced by formulating it as capsule containing pellets of Tartaric Acid coated with Dabigatran[1]. This method of formulation allows for greater consistency in absorption regardless of gastrointestinal acidity[1].

Supraglottic oedema describes inflammation of the epiglottis and the adjacent supraglottic structures. Without treatment it can lead to life threatening airway obstruction. Supraglottic oedema is commonly caused by infection, however it also can have traumatic causes including thermal injury, foreign body ingestion and caustic ingestion[2,3].

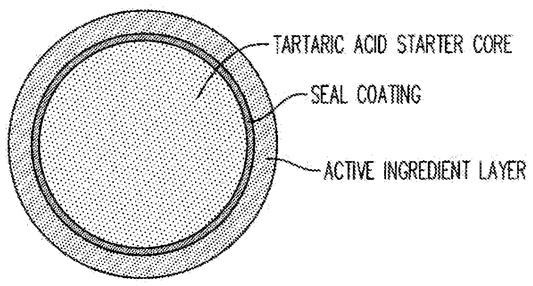

Figure 1: Formulation of Dabigatan etexilate pellets

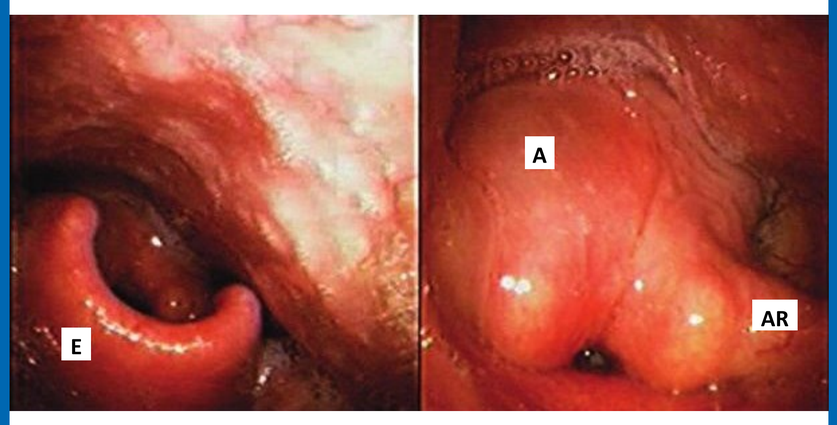

Figure 2: Typical appearance of Supraglottic oedema via Fiberoptic nasendoscopy (FNE) view: swollen congested epiglottis (E) in addition to severely oedematous arytenoids (A) and aryepiglottic folds (AR)[2].

AIM

To report a case of supraglottic oedema following choking on a Dabigatran capsule to highlight the potential for excipients to cause serious adverse drug reactions (ADRs).

CASE BACKGROUND

The patient is a 57 year old man of Greek background.

Five months prior to the event he had been switched from Warfarin to Dabigatran for treatment of his Atrial Fibrillation.

Up until the event he was tolerating Dabigatran well with no reports of adverse drug reactions.

Prior to the event he was not experiencing any swallowing difficulties or sore throat.

CASE PROGRESS & OUTCOMES

5 months prior
- Commenced on Dabigatran for Atrial Fibrillation

Day 0 pre-admission
- 8AM: No symptoms of infection. Ate breakfast with no swallowing difficulties
- 9AM: Choked on Dabigatran Tablet
- 3PM: Presented to ED after progressive worsening of throat pain & dysphagia

Day 0 post-admission
- Fibreoptic nasoendoscopy showed supraglottic oedema
- Due to concerns for airway patient was intubated and transferred to the Intensive Care Unit (ICU)
- Dabigatran withheld

Day 1
- CT head and neck: no abscess or collection. Mucosal oedema of hypopharynx
- No systemic signs of infection
- Dabigatran withheld

Day 2
- Laryngoscope: reduced supraglottic oedema
- Patient extubated

Day 3
- Supraglottic oedema deemed traumatic (not infective) likely secondary to Dabigatran pill trauma
- Dabigatran ceased and patient commenced on Warfarin
- Patient discharged to ward

Day 4
- Minor sore throat
- Tolerating soft diet
- Patient discharged

DISCUSSION

Cases have been reported of supraglottic oedema secondary to caustic substances[2,3]; it is therefore proposed that inadvertent release of the tartaric acid excipient in the supraglottic region caused supraglottic oedema.

Dabigatran was implicated given the temporal relationship with choking on the capsule and development of symptoms. Infection, the most common cause of supraglottic oedema was thought unlikely in absence of systemic signs of infection and a CT report showing no abscess or collection. Given the delayed nature of the reaction in respect to commencement of Dabigatran, the reaction is not thought to be secondary to Dabigatran itself.

The acidic formulation has already been implicated in the higher incidence of dyspepsia and gastrointestinal bleeding observed in Dabigatran than other oral anticoagulants[1].

This case highlights the importance of considering the potential role of excipients in adverse drug reactions. Pharmacist understanding of drug formulation gives the pharmacist a unique area of knowledge which can be a valuable contribution to diagnostics.

CONCLUSION

This case of likely Dabigatran excipient induced supraglottic oedema demonstrates the importance of considering excipients as a cause of serious ADRs.

References:

1. Hoffman A, Galle PR. Gastrointestinal disorders and dabigatran. Scandinavian Journal of Gasstroenterology. 2013; 48: 9-16.
2. Al-Qudah M, Faaohns S, Alomari M, Alqdah M. Acute Adult Supraglottitos: Current Management and Treatment. South Med J. 2010; 103(8): 800-804.
3. Kornak JM, Freije JE, Campbell BH. Caustic and thermal epiglottitis in adults. Otolaryngology—Head and Neck Surgery. 1996; 114: 310-312.

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