

Mammalian Meat Allergy and its impact on venous thromboembolism prophylaxis

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Objective

- To describe a case of venous thromboembolism (VTE) prophylaxis in a patient with rare tick-induced mammalian meat allergy.

Clinical Features

- 57-year-old female patient with documented tick-induced mammalian meat allergy was admitted for a total abdominal hysterectomy for treatment of endometrial adenocarcinoma.
- Extended VTE prophylaxis post discharge was required due to high VTE risk.
- Usual pharmacological options such as enoxaparin and heparins were inappropriate given they are porcine-derived and considered mammalian meat by-products.

Past Medical History

- Mammalian Meat Allergy
- Endometrial ablation
- Endometrial adenocarcinoma
- Hyperlipidaemia
- Hypothyroidism
- Chronic Fatigue
- Anxiety
- Vertigo
- Chronic migraines
- Irritable bowel syndrome
- Melanoma (excised in 2018)

Allergies

- Heparin (severe anaphylaxis)
- Penicillins (anaphylaxis)
- Doxycycline (anaphylaxis)
- Morphine and opioid derivatives (anaphylaxis)
- Propofol (anaphylaxis)
- Galactose (anaphylaxis)
- Gelatine (anaphylaxis)
- Red meats and by-products (anaphylaxis)

Literature Review

- Tick bite-induced mammalian meat allergy is an IgE-mediated reaction to alpha-gal, a carbohydrate present in non-primate mammals and mammalian by-products^{1,2,3}.
- The transfer of alpha-gal from mammals to humans occurs when a species-specific tick feeds on mammals, subsequently bites a human and injects alpha-gal through the alimentary tract and saliva^{1,2}.
- The presence of foreign alpha-gal triggers an IgE antibody immune response and subsequent ingestion of mammalian products produces an allergic reaction^{1,2}.
- Prevalence is high in the Sydney basin, south coast of New South Wales and Noosa but low in other areas of Australia, including where this patient presented³.

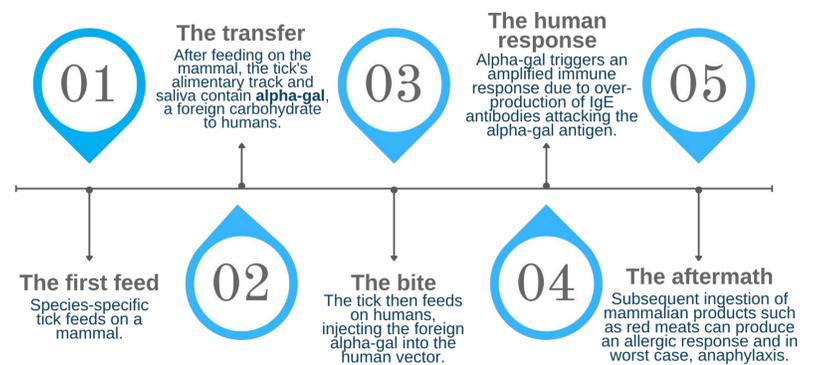


Figure 1: The Mammalian Meat Allergy timeline – from tick bite to allergy.

Pharmacist Interventions, Case Progress and Outcomes

- The ward pharmacist identified the patient required extended VTE prophylaxis as per hospital guidelines.
- Both enoxaparin and heparin, to which the latter the patient had a documented allergy of anaphylaxis, were contraindicated.
- Standard references for alternative pharmacological VTE prophylaxis options were reviewed and fondaparinux 2.5mg subcutaneous daily for 28 days was recommended. Fondaparinux is a synthetic anticoagulant without animal-sourced components.
- During inpatient treatment with fondaparinux, no allergic reactions ensued, and the patient was subsequently discharged home to complete the course.



Conclusion

- Pharmacists are well placed to ascertain allergy status and recommend appropriate therapy. This case also highlights the importance of eliciting clinical history such as those with mammalian meat allergy, whom require tailored approaches to medication treatment.

References

- Jackson, W. L. (2018). Mammalian meat allergy following a tick bite: a case report. *Oxford Medical Case Reports*, 2018(2). <https://doi.org/10.1093/omcr/omx098>
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