

Superficial, Soft Tissue Infection associated with Insect Bites, or Bee/Hornet/Wasp Stings, in Adults – Full Clinical Guideline

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Introduction

- The feeding/defensive bites of insects, and the stings of bees/hornets/wasps, may breach the skin.
- The insect saliva or bee/hornet/wasp venom may initiate a host inflammatory response.
- The hallmarks of inflammation - redness, heat, swelling, and pain - may emerge at the bite/sting site.
- The breach in skin integrity may enable beta haemolytic streptococci or *Staphylococcus aureus* to invade and infect the superficial, soft tissues.
- Bacterial invasion of the dermis and superficial subcutis - with acute presentation of skin erythema, warmth, and oedema, with clear demarcation of infected and uninfected tissue - is termed erysipelas.
- Bacterial invasion of the dermis and subcutis - varying from erysipelas with its relatively indolent presentation and without the sharp division of infected and uninfected tissue - is termed cellulitis.

Diagnosis

- Insect bites, bee/hornet/wasp stings, and bacterial invasion may initiate host inflammation.
- Differentiating non-infectious from infectious host inflammatory responses can be challenging.
- In general, bite/sting-mediated inflammation is transient (minutes-hours).
- If the hallmarks of inflammation:
 - Persist, e.g. days; or
 - Resolve and then recurThese symptoms/signs could be consistent with secondary bacterial infection.

Differential Diagnosis: Lyme disease

- The feeding bites of other Animalia, e.g. ticks, may also breach the skin.
- The *Ixodes*/deer tick may inoculate the bacterial spirochete *Borrelia burgdorferi*, enabling invasion and infection.
- The rash [erythema migrans](#) is one manifestation of borreliosis/Lyme disease.
- Please note further information on *Borrelia burgdorferi* infectious disease and its management within National Institute of Clinical Excellence ([NICE](#)) [Lyme disease guidelines](#).

Investigation, Treatment, and Management

- The insect-, bee-, hornet-, or wasp-mediated breaches in skin integrity - in combination with the beta haemolytic streptococci or *Staphylococcus aureus* invasion - may cause bacterial infection of the dermis and subcutis.
- Therefore, please note the investigation, treatment, and management sections in the hospital guideline on [erysipelas and cellulitis in adults](#).

References

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Document Control

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