

Proposed tick bite/Lyme disease management protocol and patient advice leaflet

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Overview

As a pair of Accident and Emergency units with a large rural catchment we see a large number of tick bites which is often accompanied by anxiety from the patient. Due to the internet and media from the USA public awareness of Lyme disease is high and certainly from tick bites I have encountered there is a large degree of anxiety associated with this.

Goals

1. Easy to use protocol for tick removal
2. Information sheet for Doctors as reference point for Lyme disease
3. To supply an easy to follow patient advice leaflet to supply to concerned patients.

Contents

- I) Tick bite management
- II) Lyme disease information sheet
- III) Patient advice leaflet
- IV) references

Tick Bite Management

History

- Geographical location/time of bite(s)
- PMH + DH ?immunosuppression
- If time >1 day ?infective symptoms
?fevers/rigors/erythema/pain

Examination

- Establish number and locations on body
- Review surrounding skin checking for evidence of infection
- If patient has already removed review area and ensure fully removed.

Removal

Tweezers

Grasp tick as close to the skin as possible and pull upwards with steady, even pressure. Do not twist or jerk the tick as this may leave its mouth parts embedded
If any do break off, they may be removed with a sterilised needle
Do not squeeze or crush the body of the tick
Do not handle the tick
Place in sample pot for disposal
Disinfect site with an antiseptic wipe

Myths

“You have to twist with tweezers”
“You have to remove the tick anti-clockwise” ticks do not have screw threaded stingers
Techniques such as alcohol, freezing, burning, oils may leave the stinger in or not work at all.

Tick removal device

Choose device based on size of tick
Engage tool by approaching tick from the side until it is held securely.
Lift the tool very lightly and TURN IT (clockwise or counter-clockwise).
The tick detaches itself after 2-3 rotations.
Disinfect the bite site

Note always review product info as multiple products available

Disposal

Do not initially give antibiotics in local tick bites (incidence UK wide 1.73/100000)

Do not give antibiotics

Give patient advice regarding symptoms of both cellulitis and early Lyme disease and advise to attend GP if any develop Advice card available on CEM.

Patient can keep tick for testing privately although this is of limited value.

Lyme disease

What is it?

Lyme disease (lyme borreliosis or Lyme arthritis) is a tick borne systemic infection, resulting from a bite from an infected tick. Discovered as the cause of Lyme disease in Lyme, Connecticut, USA in 1975. And has been reported across the UK, Eastern Europe, Scandinavia, China, Japan and Australia.

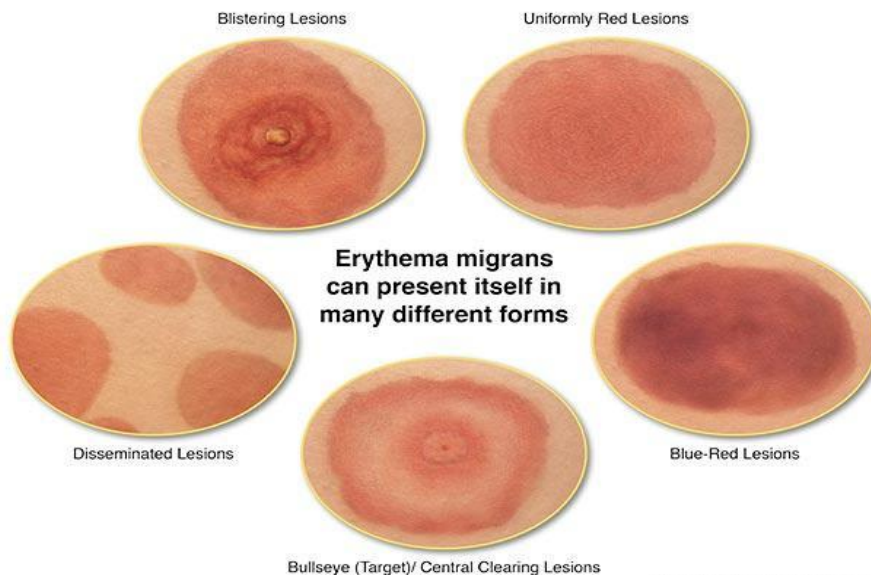
Microbiology:

B.burgdorferi bacterium are gram negative staining spirochaetes which are actively motile with several flagella. The bacterium grow primarily in the midgut of the tick and is transferred to humans, or other host species, during regurgitation of the gut contents during a blood meal. Risk of transmission is relatively low but does increase the longer the tick feeds.

Signs and Symptoms

Lyme disease presents in 3 distinct stages:

- Stage 1 is characterised by spreading erythema migrans (Image below) occurring between 3-22 days following infection. Patient may also develop secondary lesions at different sites, malaise, fatigue, headache, rigors, and neck stiffness. These will fade within 3-4 weeks
- Stage 2 develops after weeks to months and present with cardiac or neurological abnormalities, MSK symptoms or intermittent arthritis. Risk of Lyme carditis, CNS involvement and uveitis.
- Stage 3 May ensue months-years later with chronic skin, nervous system or joint abnormalities.
- Congenital infection may also occur and is potentially fatal.



Management

Antibiotics are not generally required as prophylaxis for tick bites

If patient presenting with single erythema migrans lesion only, treat with oral antibiotics and discharge to GP follow-up

If non-focal symptoms, symptoms of late stage infection, or unsure of diagnosis discuss with appropriate specialist (paediatric infectious diseases/adult infectious diseases and microbiology)

If symptoms of more severe infection eg, Lyme carditis or CNS involvement discuss with ID and consider admitting patient to appropriate area (eg CCU/HDU may be required)

Symptoms	Treatment	First alternative	Second alternative
Erythema migrans and/or Non-focal symptoms	Oral doxycycline: 100 mg twice per day or 200 mg once per day for 21 days	Oral amoxicillin: 1 g 3 times per day for 21 days	Oral azithromycin: 500 mg daily for 17 days
Lyme disease affecting the cranial nerves or peripheral nervous system	Oral doxycycline: 100 mg twice per day or 200 mg once per day for 21 days	Oral amoxicillin: 1 g 3 times per day for 21 days	–
Lyme disease affecting the central nervous system	Intravenous ceftriaxone: 2 g twice per day or 4 g once per day for 21 days (when an oral switch is being considered, use doxycycline)	Oral doxycycline: 200 mg twice per day or 400 mg once per day for 21 days	–
Lyme disease arthritis	Oral doxycycline: 100 mg twice per day or 200 mg once per day for 28 days	Oral amoxicillin: 1 g 3 times per day for 28 days	Intravenous ceftriaxone: 2 g once per day for 28 days
Acrodermatitis chronica atrophicans			

Lyme carditis	Oral doxycycline: 100 mg twice per day or 200 mg once per day for 21 days	Intravenous ceftriaxone: 2 g once per day for 21 days	–
Lyme carditis and haemodynamically unstable	Intravenous ceftriaxone: 2 g once per day for 21 days (when an oral switch is being considered, use doxycycline)	–	–
<p>For Lyme disease suspected during pregnancy, use appropriate antibiotics for stage of pregnancy. Do not use azithromycin to treat people with cardiac abnormalities associated with Lyme disease because of its effect on QT interval.</p>			

Tick Bite Patient information leaflet

What is a Tick?

A small arachnid (3-5mm in length) which survives by feeding on the blood of mammals, birds, reptiles, amphibians and fish. Although unpleasant the majority of ticks do not carry human diseases in the UK and it is unlikely you will become unwell from a tick bite. In rare cases a patient who has been fed upon may develop lyme disease.

What is Lyme Disease?

Lyme disease is an infection caused by a species of bacteria which live and grow within the midgut of some ticks. It is seen in many countries across the globe including the UK and many European countries.

Should I worry?

In short... NO!

It is unusual to catch Lyme disease from a single tick bite removed appropriately, with less than 2 in 100,000 recorded bites resulting in infection in the UK.

What should I look out for?

Symptoms will generally appear within 22 days of bite and include:

- A bullseye rash spreading from the site of the bite (image below) called erythema migrans
- Other skin changes around bite or elsewhere.
- Headache and/or neck stiffness
- Feeling very or uncontrollably shaky
- Feeling generally unwell and worn out

If any of these develop within 1 month of tick bite you should see your GP as soon as you are able.

If you want to know more further reading available through Lyme disease UK and Health Protection Scotland

Erythema Migrans



References

www.lymediseaseuk.com

Gpnotebook.co.uk

NICE guideline (NG95) Lyme disease

Public health England

Health Protection Scotland

Medical Microbiology 17th edition