

RED LEGS PATHWAY

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• BILATERAL Leg Redness BILATERAL CELLULITIS IS RARE

Consider differential diagnosis of redness and treat accordingly

Most common causes of Red Legs:

- **Lipodermatosclerosis**
- **Varicose eczema**
- **Gravitational dermatitis**
- **Contact dermatitis**
- **Fungal infection / Intertrigo** in skin folds
- **Drug induced**
- **Heat induced redness** e.g. sunburn and radiators/open fires/hot water bottles
- **Underlying medical condition** - consider diagnosis heart failure.

This list is not exhaustive but in the absence of definite diagnosis of bilateral red legs implement treatment as below not antibiotics just in case.

Wet Legs

Lymphorrhoea (Wet or leaking legs)

- Initiate skin care (wash daily with soap substitute, dry thoroughly, moisturise with bland emollient).
- Encourage exercise e.g. chair based **EveryBodyCan Campaign**.
- Superabsorbent dressing.
- Assess vascular status using Doppler or employ **BLS Position Document: Assessing Vascular Status in the Presence of Chronic Oedema**.
- Inelastic compression bandaging changed daily initially and then reduce as lymphorrhoea slows.

Unilateral Leg Redness

Unwell / feverish patient

Unilateral leg redness, pyrexia, heat, pain, oedema, possible skin blistering, consider a diagnosis of **acute cellulitis** and treat according to local policy. For patients with lymphoedema and unilateral cellulitis see **BLS cellulitis guidelines** and refer to Lymphoedema clinic.

Red Flag: Differential diagnosis may include necrotising fasciitis.

Dry Legs

Treatment for Red Legs

- Initiate skin care (wash daily with soap substitute, dry thoroughly, moisturise with bland emollient).
- **Topical steroids**
- Encourage exercise e.g. chair based **EveryBodyCan Campaign**.
- Consider under sock e.g. Dermasilk, Skinnies.
- Compression – class 1 British standard compression hosiery can be applied in the absence of ABPI and any Red flags for arterial disease.
- If there is significant oedema or redness or the patient does not respond to class 1 British standard compression hosiery assess vascular status using Doppler or employ **BLS Position Document: Assessing Vascular Status in the Presence of Chronic Oedema** and proceed to stronger compression as indicated (this may be in the form of inelastic compression bandaging, compression hosiery or wraps).

Well patient

- Assess DVT risk and rule out if suspected via local policy.

Consider:

- **Venous Hypertension - Varicosities**
- Acute **Lipodermatosclerosis**
- **Phlebitis**
- **Staining**

Red Flags: In unilateral leg swelling which may extend above the knee differential diagnosis should include:

- extrinsic venous compression due to undiagnosed tumour/ recurrent disease – exclude with appropriate pelvic investigation/ blood tests.
- Chronic DVT – exclude with venous duplex and D-dimer.

Failure to improve/
Respond to the above/
Diagnostic uncertainty.

- If suspected peripheral arterial disease, symptomatic varicose veins or non-healing leg ulcer refer to vascular services.
- If concerns re skin malignancy or other skin condition, consider referral to dermatology.

DIFFERENTIAL DIAGNOSIS IN PATIENTS WITH RED LEGS: RED LEGS PATHWAY TO GUIDE DECISION MAKING

The aim of this document is to provide:

1. Practical information for clinical decision-making for health care professionals managing red legs.
2. Key principles for practice
3. Ensure prompt and effective treatment.

The British Lymphology Society (BLS) would like to extend thanks to UHNM NHS Trust for allowing BLS to share and use their Red Leg pathway to inform this BLS paper.

Background

Cellulitis is over diagnosed and there is increasing dependence on antibiotics to treat which are often ineffective when the cause of bilateral red legs is unlikely to be acute cellulitis. The overall aim was to develop a pathway to support differential diagnosis in patients with suspected cellulitis and to promote the prompt identification and treatment of Red Leg Syndrome.

Introduction

Cellulitis is said to cost the NHS £254 million annually however it is well recognised that cellulitis is over diagnosed and over treated in patients with lower limb redness. A diagnosis of Red Legs Syndrome should be considered when presented with a patient with bilateral lower limb redness, warmth, tenderness and swelling in the absence of systemic malaise. Levell et al (2011) showed that approximately 40% patients diagnosed with cellulitis have an alternative diagnosis.

Best Practice

A scoping systematic review of lower limb cellulitis was performed in MEDLINE and Embase in October 2017 (Patel et al, 2018) exploring three themes; clinical case reports of misdiagnosis, service development and diagnostic aids. They found forty-seven different pathologies were misdiagnosed (seven malignancies). Two different pilot services were reported trying to reduce the misdiagnosis rates of lower-limb cellulitis and save costs and four studies looked at biochemical markers, imaging and a scoring tool to aid diagnosis.

Levell et al (2011) reported 512 patients avoiding admission for intravenous treatment in the hospital, with a bed day saving of £818,000 over 40 months. In total, 1470 days of antibiotic use were avoided in the patients without cellulitis.

Elwell (2015) demonstrated only 28% patients referred to the Red Legs clinic required a follow-up appointment. Redness in the absence of oedema is usually venous in origin and can be discharged with an estimated cost saving of £100,000 per annum. In total, 82% patients were extremely satisfied with their level of care.

The Patel paper recognised the importance of an MDT approach and that there is a lack of diagnostic aids for lower limb cellulitis.

BLS Red Legs Pathway

In order to ensure correct identification of the cause of red legs and to reduce the number of patients receiving an incorrect diagnosis, inappropriate usage of antibiotics and associated health risks along with poor patient experience and delays in effective management being implemented, the BLS has produced the Red Legs Pathway.

The pathway has been developed with an interested GP and has been peer reviewed by Professor Vaughan Keeley, Consultant in Lymphoedema at Derby and Burton NHS Trust along with tissue viability, community and practice nursing teams and a local lymphoedema patient support group.

Some comments received include:

Patients are often needlessly prescribed several courses of antibiotics with no improvement in their symptoms and the prescriber has never even seen the patient! This pathway should really help to highlight the other causes of red legs.

This is a great resource for community practitioners to help manage this very common but often challenging problem.

It's such a weight off your mind when you go to the doctor or the nurse and straight away, they know what's wrong and what to do about it!

The BLS consensus document for the management of cellulitis in lymphoedema is a comprehensive guide to managing acute infections in individuals with lymphoedema. The BLS Red Legs pathway aims to address the importance of differential diagnosis, promote the avoidance of antibiotic prescribing in bilateral leg redness and thus reduce the risk of antibiotic resistance, antibiotic associated side effects and to improve patient experience. There are also huge savings to be made by getting effective management right first time (O'Neill 2015).

There are situations where there may be redness without swelling and other occasions when there may be increased swelling with mild redness.

Cellulitis is an acute bacterial infection which can affect any part of the body but can commonly affect the leg (unilateral). There is often a rapid onset within hours, sometimes less time if the patient already has an underlying lymphoedema.

*<https://www.thebls.com/documents-library/consensus-document-on-the-management-of-cellulitis-in-lymphoedema>

Bilateral Leg Redness can be acute but is more likely to be chronic, often present for weeks and months, in some cases years.

Chronic redness can of course also be seen following cellulitis (post cellullitic **staining**).

Obese, immobile elderly increased risk.

Always treat the underlying conditions e.g. athletes' foot.

Lipodermatosclerosis

Can be acute or chronic. Also, the acute on chronic exacerbation caused by venous hypertension which gives rise to bilateral lower leg redness.

In acute cases there may be associated warmth, pain and swelling. In chronic cases there may be dull redness, normal skin temperature and little or no pain. These are the patients who are often treated with antibiotics with no benefit. The only effective management is compression which can actually give pain relief once fitted.

Varicose eczema and gravitational dermatitis.

Varicose eczema/gravitational dermatitis is caused by increased pressure in the leg veins. When the small valves in the veins fail, venous reflux is seen, which can cause fluid to leak into the surrounding tissue. It is thought that varicose eczema may develop as a result of the immune system reacting to this fluid. The skin can be itchy, red, swollen, dry and scaly and there may be associated Haemosiderin staining, lipodermatosclerosis and atrophe blanche.

Chronic skin discolouration in a patient with likely venous insufficiency, this is extremely common and often mistaken for cellulitis however antibiotics are not indicated in chronic venous changes. Likely haemosiderin deposits, spider veins and generalised erythema in a non-hot leg, usually bilateral.

Contact dermatitis – If suspected must initiate patch testing.

Fungal infection Use anti-fungal cream e.g. Lamisil cream daily.

Encourage thorough drying especially in the toes/folds and creases. Use separate towels, wear clean socks/compression hosiery daily and disinfect the inside of shoes when not worn.

Intertrigo in skin folds.

Redness/rash in the feet and intertrigo in deep skin folds in the legs especially in obese patients. Daily washing, thorough gentle drying with tissue if necessary and use of anti-fungal cream.

In both conditions see GP if symptoms do not improve.

Drug induced

Drugs which can exacerbate or cause lower limb oedema may be associated with redness at the onset of oedema due to an inflammatory response. Pregabalin (to a lesser extent Gabapentin) Corticosteroids, Calcium channel blockers, NSAIDs, Parkinson's medication).

Heat induced redness e.g. sunburn and radiators/ open fires/hot water bottles. Beware of lines from sandals or clothing.

Underlying medical conditions that cause increased oedema and those where there is venous hypertension such as heart failure may lead to some degree of redness (perform ECHO, NT proBNP, UE, as clinically indicated).

Venous hypertension - varicosities

High blood pressure inside the vein. Many people with varicose veins in the legs have no symptoms others have pain or aching, feel swollen and heavy or itchy. Consider referral to vascular services.

Phlebitis/superficial thrombophlebitis.

Inflammation of a vein. Symptoms include painful hard lumps underneath the skin, causing redness.

EveryBodyCan Campaign

<https://www.thebls.com/pages/everybodycan>

BLS Position Document

Assessing Vascular Status in the presence of Chronic Oedema prior to the application of Compression Therapy. Position Document to guide decision making.

<https://www.thebls.com/documents-library/assessing-vascular-status-in-the-presence-of-chronic-oedema-prior-to-the-application-of-compression-hosiery-position-document-to-guide-decision-making-a5>

Topical steroids

Topical steroids are likely to be helpful. Potent steroid ointment can be applied to affected areas daily for maximum of 2 weeks. After this, reduce potency of steroid ointment and continue for a further 2 weeks. Always apply steroid ointment 30 minutes after moisturising.

Conclusion

Given the lack of robustly developed and validated diagnostic tools or criteria for lower-limb cellulitis the BLS hopes that it's Red Leg Pathway goes some way to ensuring clinicians are guided to carry out differential diagnosis in bilateral red legs and avoid unnecessary antibiotic therapy leading to excellent patient experience with timely, effective management of their condition.

References

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Bilateral Leg Redness