FACTSHEET 4:

RECOGNISING INFECTION IN VENOUS LEG ULCERS

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What are venous leg ulcers?

Venous leg ulcers (VLUs) are the most common form of chronic leg ulcer, accounting for 60–80% of cases (1). Their global prevalence is estimated at 0.32%, with an incidence of 0.17%, and recurrence rates can reach up to 80% within months of healing (1). Due to their chronicity and exposure, VLUs are frequently colonised by bacteria; however, true infection is less common. Distinguishing colonisation from infection is important, as overuse of antibiotics contributes to antimicrobial resistance, while under-recognition of infection increases risks of delayed healing, cellulitis, or sepsis (2). Accurate identification and timely management of infection are therefore essential to improve outcomes and reduce complications in individuals with VLUs (3).

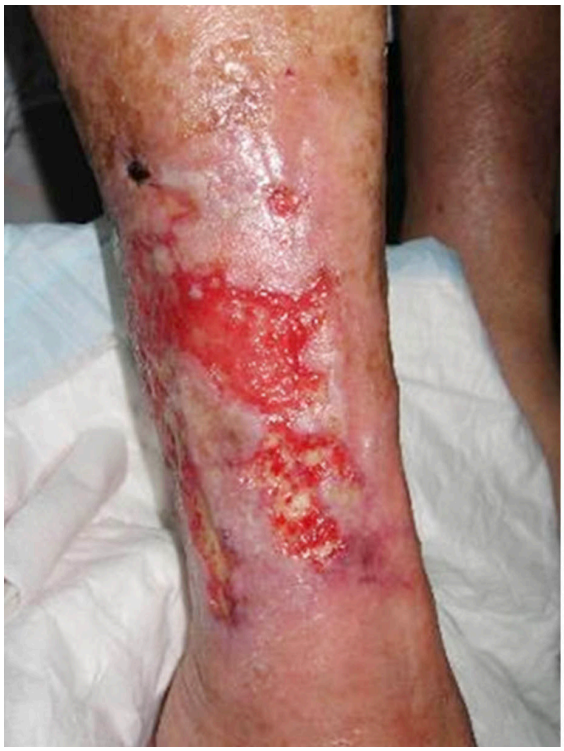

Figure 1: VLU with slightly macerated surrounding peri-wound skin.

Infection characteristics specific to VLU

Understanding how VLUs differ from other wounds is essential. VLUs do not typically present with necrosis. The presence of necrosis suggests an arterial or mixed aetiology and warrants vascular assessment (4). Infection signs may present subtly due to the chronic inflammatory state of VLUs.

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Key clinical indicators of infection

Infection in VLUs often present subtly and can be overlooked. Clinicians should assess for the following key indicators during dressing changes or follow-ups (4):

- Increased exudate: a notable rise in wound drainage, especially if purulent or thick;
- Change in exudate character: transition from clear to coloured, malodorous fluid;
- Pain: sudden onset or escalation in pain is a red flag, especially in chronic, previously painless ulcers;
- Friable or discoloured granulation tissue: bleeds easily, may appear dull or dark;
- Delayed healing: ulcer stalls or deteriorates after prior improvement;
- Malodour: foul smell that persists after cleaning.

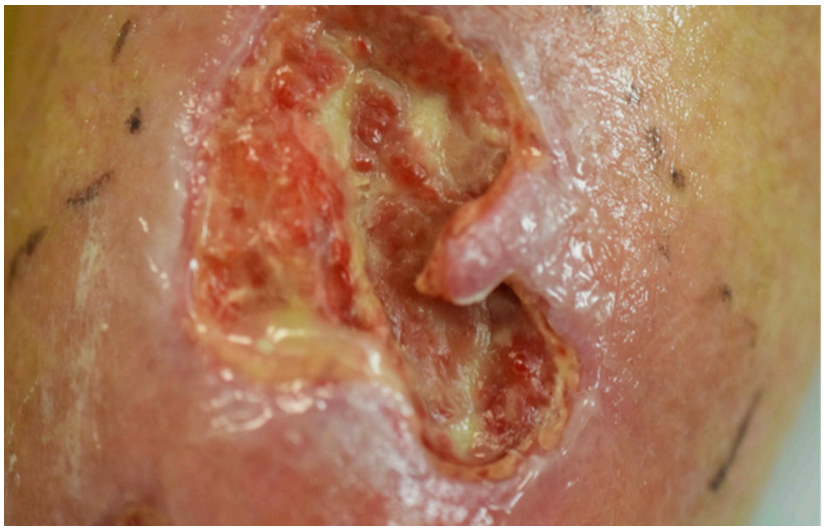

Figure 2: VLU in lighter skin tone (see redness around the wound).

Periwound erythema and skin tone considerations

Recognising erythema (redness) in various skin tones is vital. Clinical signs of infection like warmth or redness may be less visible in patients with melanin rich skin (5). Palpation becomes a more reliable diagnostic aid.

Lighter skin tones: Erythema may appear bright pink or red and is often more noticeable.
Melanin rich skin: Erythema may appear purplish, greyish, or violaceous discoloration. Feel for increased warmth or swelling as visual cues may be less apparent.

In all skin tones, use the back of the hand to detect temperature changes and compare them bilaterally when possible.

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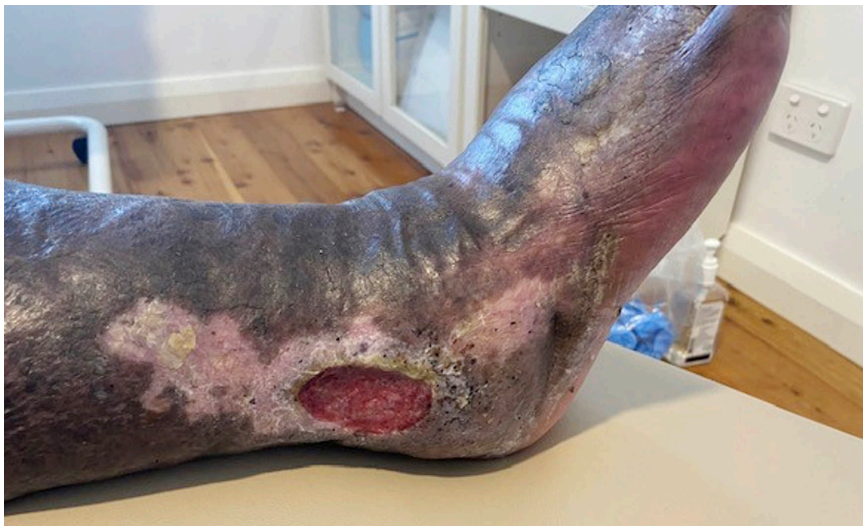

Figure 3: VLU in melanin rich skin with signs of infection (see grey color).

Atypical signs requiring attention

Some systemic or evolving signs of infection may not be immediately attributed to the ulcer but are important early clues. Recognising these 'silent' indicators helps prevent delays in care (4).

These indicators include:

- low-grade fever or systemic malaise,
- lymphangitis or swollen regional nodes,
- new localized oedema,
- increased periwound warmth,
- slough or fibrin returning after previous debridement.

Role of swabbing and testing

Swabs should not be routine. They are diagnostic tools to be used only when clinical signs of infection are evident. Proper swabbing techniques improve diagnostic accuracy and antimicrobial stewardship (6):

- Swab only when infection is clinically suspected;
- Use Levine technique: cleanse wound, then rotate swab with pressure over viable tissue;
- Avoid sampling from pus or slough alone.

Systemic or spreading infection – when to act

Sometimes, a VLU infection progresses beyond the wound, resulting in systemic symptoms. Recognising this escalation is key to timely intervention and potential hospital referral (4). The systemic symptoms to look out for include:

- spreading erythema or cellulitis,
- fever, elevated leukocyte or C-reactive protein (CRP),
- visible red lines along lymphatic vessels (lymphangitis),
- rapid wound deterioration with systemic symptoms.

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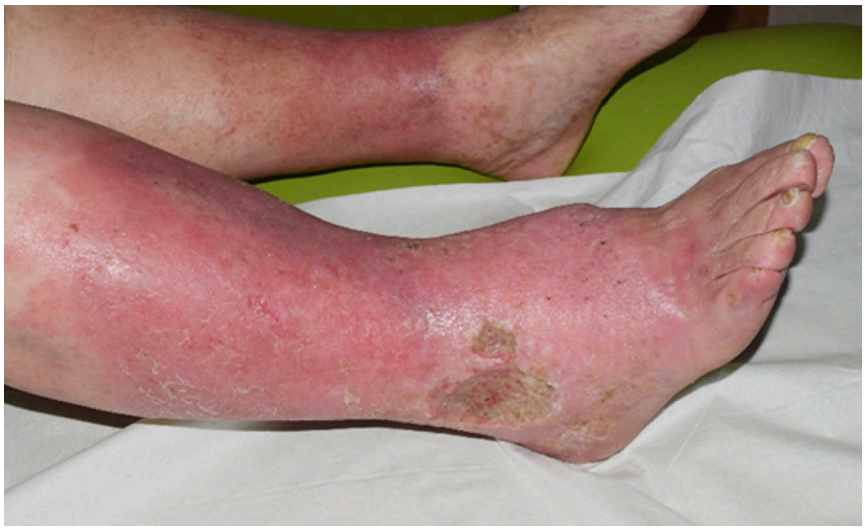

Figure 4: VLU with PAD component with signs of inflammation.

Clinical considerations

Here are practical reminders to help clinicians detect infection in VLUs, especially when traditional signs may be muted due to skin tone, age, or comorbidities.

- VLUs infected signs may differ by skin tone; assess visually and by palpation.
- Trust evolving clinical changes (pain, exudate, odour) over static lab results.
- Do not ignore pain or delayed healing in the absence of redness.
- Refer if worsening despite topical management or if systemic signs develop.

References

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