Diabetic Foot Infection Laboratory Diagnosis

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Definitions

**Wound contamination:** the presence of non-replicating organisms in the wound. All chronic wounds are contaminated.

**Wound colonization:** the presence of replicating microorganisms adherent to the wound in the absence of injury to the host.

**Wound Infection:** the presence of replicating microorganisms within a wound that cause host injury.
How do you know when a wound is infected?

One feature is common to all infected chronic wounds:

- The failure of the wound to heal and progressive deterioration of the wound.
Diagnosis of Infection in DFU

Purulent secretions (pus)
Two or more local signs or symptoms of inflammation (e.g., redness, warmth, induration, pain or tenderness) suggests the wound is infected.

Systemic signs of infection (e.g., fever, chills, leukocytosis, elevated inflammatory markers) in severe infections
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The CBC count and erythrocyte sedimentation rate (ESR) are slightly or moderately elevated. Elevations are not diagnostic and, therefore, are unhelpful.
Aim of Doing Wound Culture

To identify organisms and to assist in treatment of an infection rather than be used to diagnose infection.
When to Do a Culture

Routine swabbing is not justified

Diagnosis of infection is essentially clinically, regardless of the results of any wound culture
Specimen Collection and Culture Techniques.

The gold standard
- Tissue biopsy
- Needle aspirate

If a tissue biopsy is not possible
- Swab culture after debridement
Equipment Required
الأدوات المستخدمة

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Specimen Collection and Culture

Techniques

1. Palm to palm
2a. Right palm over left dorsum
2b. Left palm over right dorsum
3. Fingers interlace palm to palm
4. Back of fingers to opposing palms
5a. Rotational rubbing of right thumb
5b. Rotational rubbing of left thumb
6a. Rotational rubbing of left palm
6b. Rotational rubbing of right palm

Decontaminate hands
Reduce the risk of transfer of transient organisms on the healthcare workers' hands to the patient

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Specimen Collection and Culture Techniques
خطوات أخذ المزرعة

Apply gloves
إرتداء الجوانتى

To protect the health care workers hands
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خطوات أخذ المزرعة

Debride wound
تحضير الجرح

Cleanse the wound with sterile saline
غسل الجرح بحلول الملح

To achieve a clean culture site and to avoid obtaining a culture from the pus on the surface of the wound

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Don’t Use antiseptics
لا تعقيم نهجزح قبم أخذ انعينة
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خطوات أخذ المزرعة

Swab the base of the lesion تؤخذ المزرعة من عمق منتصف الجرح
Use a “zig-zag” motion whilst simultaneously rotating between the fingers
Ensure all the swab will contain sufficient amounts of bacteria
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Place the specimen straight into the transport medium

To remove the possibility of contamination
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خطوات أخذ المزرعة

Remove glove and decontaminate hands before filing in microbiological form.

Prevent contamination of pen.

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Specimen Collection and Culture Techniques

خطوات أخذ المزرعة

- Transport to the laboratory promptly in suitable transport media

ترسل إلى المعمل بسرعة