

## OBJECTIVE

To highlight how morphologically similar cutaneous infections can present at the same time

## INTRODUCTION

Cutaneous Aspergillosis is an infection caused by the opportunistic fungi *Aspergillus*. While there has been much research regarding pulmonary aspergillosis, cutaneous aspergillosis occurs less frequently and is still relatively rare. Cutaneous aspergillosis can present as a primary infection in immunocompromised patients from direct contact with the fungi.

Nocardiosis occurs due to infection with the bacteria *Nocardia*. It is mainly found in soil and decaying plant parts. Infection can be caused by direct contact with *Nocardia* either via wound contamination with dust or a deep thorn prick which can then lead to subcutaneous infection.

## CASE

- 85-year-old woman with history of metastatic lung cancer on pembrolizumab presented to the emergency room with rash on bilateral forearms
- Rash on the right forearm was previously the site of an intravenous catheter and patient reported an injury from a rosebush to the left forearm
- Physical exam showed violaceous, thin plaques with scattered subcorneal pustules on right and left forearms (Figure 1)
- Biopsy of the right forearm revealed fungal hyphae with septae within inflamed, necrotic tissue, and wound culture positive for *Aspergillus fumigatus* (Figure 2A and 2B)
- Biopsy of the left forearm showed thin, gram-positive, filamentous bacteria and tissue culture positive for *Nocardia nova* (Figure 2C)
- Patient was started on trimethoprim-sulfamethoxazole, but then went on hospice due to other co-morbidities



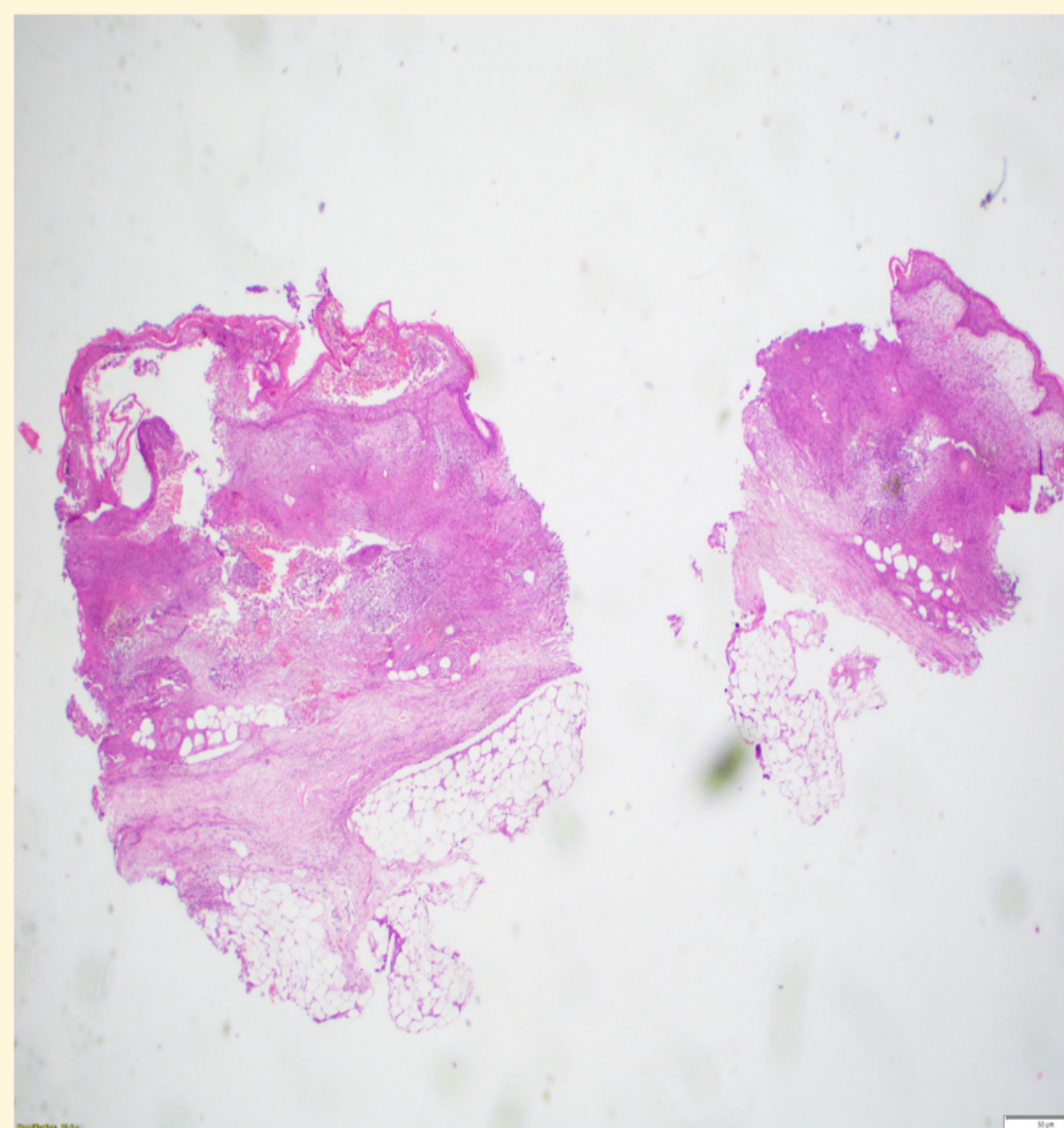
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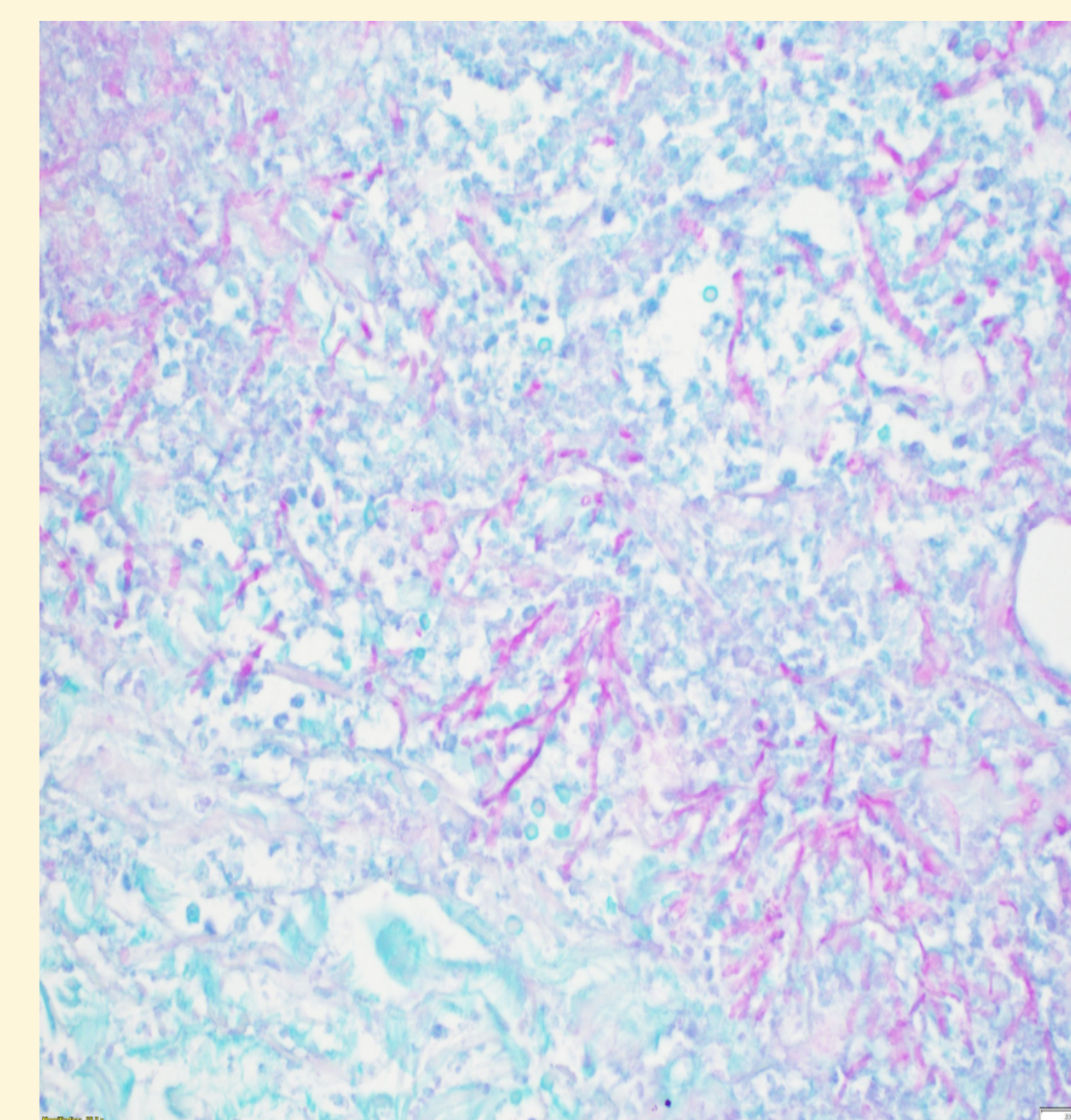
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**Figure 1 Cutaneous presentation of rash on bilateral forearms.** Right forearm with violaceous, thin plaques with scattered subcorneal pustules [A]. Left forearm with violaceous thin plaque with subcorneal pustules and hemorrhagic crusting [B].

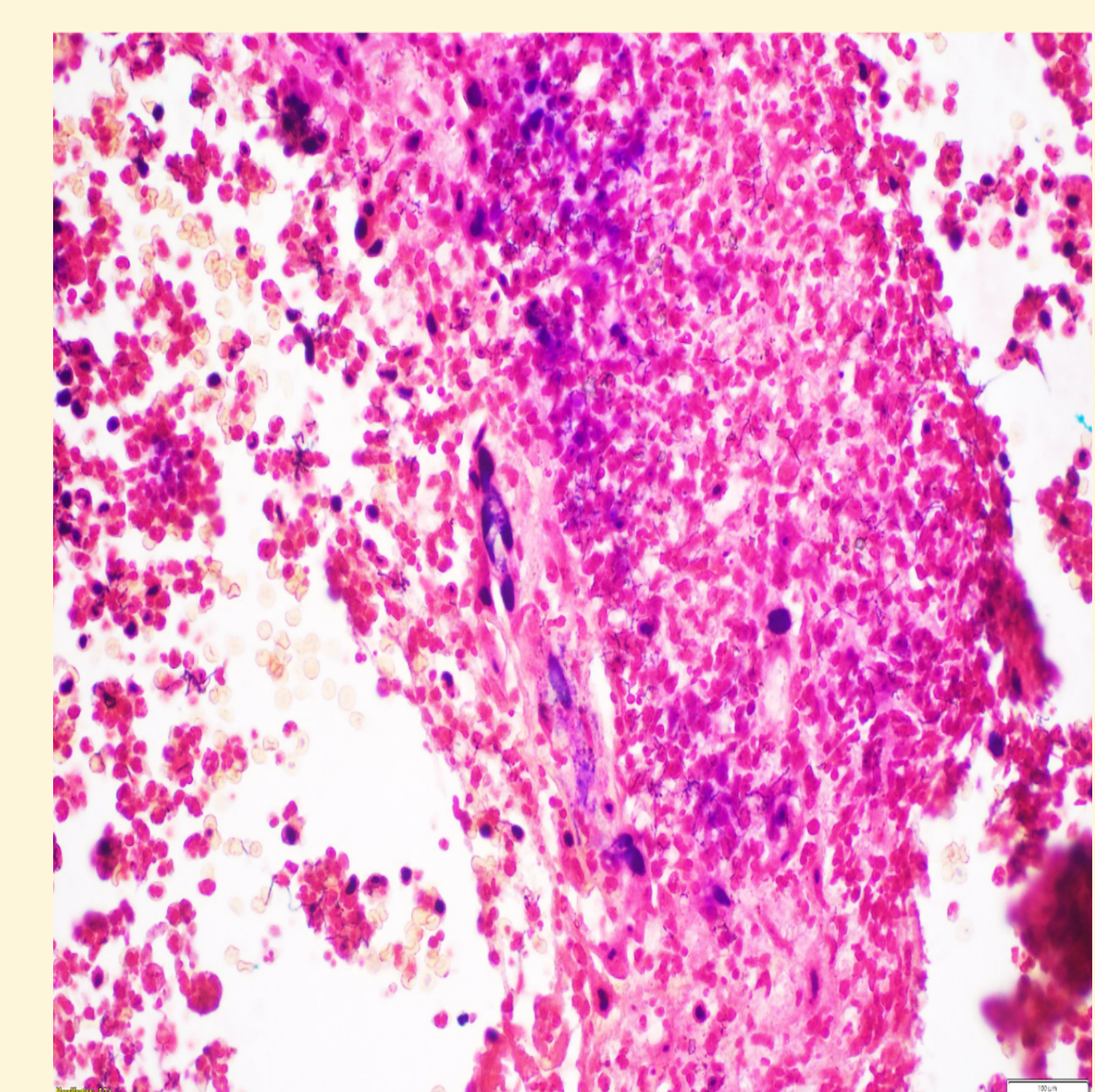
- In addition, Cutaneous Nocardiosis is generally due to a history of thorn prick or splinter
- Furthermore, malignancy may predispose patients to Nocardia infection, which may be due to antineoplastic therapy or another unknown reason
- In summary, it is important to carefully consider that multiple cutaneous infections can present at the same time, and underlying conditions, such as immunomodulation from immunotherapy drugs like pembrolizumab, can put a patient at a higher risk for developing simultaneous infections.



A



B



C

**Figure 2 Histology.** Punch biopsy specimen from right forearm showing inflamed necrotic tissue (H&E 20x) [A]. PAS stain demonstrating septae and foci of acute angle branching (PAS 400x) [B]. Left forearm - within area of dermal microabscess, there are gram-positive, thin, filamentous branch rods (Gram stain 400x) [C].

## DISCUSSION

- Cutaneous Aspergillosis is a rare primary infection that can result from skin injury caused by catheters, burns, occlusive dressings, or surgeries.
- The initial presentation of cutaneous aspergillosis can be macules, papules, nodules, or plaques.

## REFERENCES

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