Dermatology Case Reports

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Case Report

# Cutaneous Nodule Revealing Aspergillosis in an Immunocompetent Patient

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## ABSTRACT

We report a case of a 58-year-old woman with unremarkable clinical history who presented with a well-circumscribed hard nodular skin lesion in her leg. The lesion was not associated with any general symptomatology. With such a clinical presentation, clinicians suggested the diagnosis of hemangioma. The diagnosis of primary cutaneous Aspergillosis was disclosed after the histopathological assessment of the resected lesion. The clinical investigations found no other sites of Aspergillosis. The patient received medical treatment and the evolution was marked by complete remission.

We report herein an unusual location of a rare infectious disease with misleading clinical presentation as it presented in an immunocompetent patient mimicking a vascular tumor.

**Keywords:** Aspergillosis; Skin; Immunocompetent; Hyphae

## INTRODUCTION

The primary cutaneous localization of Aspergillosis on immunocompetent patients is exceptional and poorly characterized. The majority of cases described in the literature correspond to cutaneous localization of Aspergillosis in immunocompromised patients following hematogenous dissemination. Cutaneous Aspergillosis produces several types of lesions and can take various forms; therefore, the clinical aspect is not specific. The semiological similarity of these lesions with those of a hemangioma could lead to a diagnostic wandering and a delay in the therapeutic management, so the diagnosis is based on histopathological examination.

We report herein an unusual location of a rare infectious disease with misleading clinical presentation as it presented in an immunocompetent patient mimicking a vascular tumor.

## CASE REPORT

A 58-year-old housewife with unremarkable clinical history was presented for a chronic lesion evolving for 9 months after a leg trauma. On clinical examination, it was a well, circumscribed nodular lesion with hard consistency localized in her right leg (Figure 1). This lesion was isolated without any other associated signs.

With such a clinical presentation, clinicians suggested the diagnosis of hemangioma. The patient underwent surgical excision of her lesion.

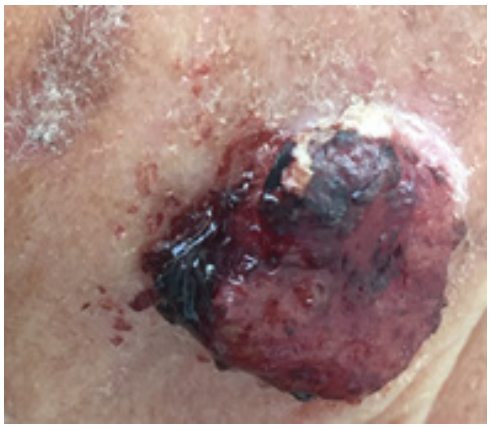

**Figure 1:** Well circumscribed lesion with hard consistency localized the right leg.

Histological examination of the resected cutaneous specimen showed a regular epidermidis with normal squamous epithelium, in the dermis, there were numerous hyphae with right-angle branching (Figure 2).

These branching hyphae stained positive for PAS staining (Figure 3). These features were consistent with the diagnosis of cutaneous Aspergillosis.

Additional clinical investigations did not find any other locations of the disease, thus excluding hematogenous dissemination that

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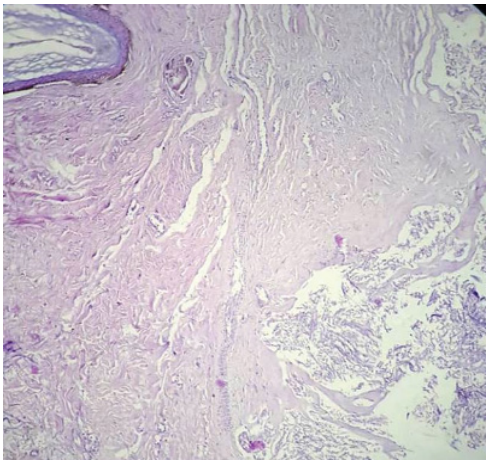

**Figure 2:** Hyphae with right angle branching within the dermis (HES x200).

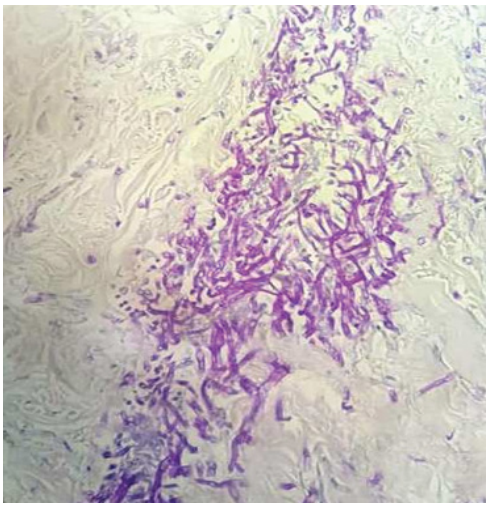

**Figure 3:** PAS staining highlights the Aspergillus hyphae (HES x400).

**Table 1:** Some reported cases of cutaneous Aspergillosis in the literature.

| Case | Age | Sex | Location | Immune status | Evolution |
|---|---|---|---|---|---|
| Bagate A et al. (India) [17] | 25 | F | Right elbow | Immunocompetent | Complete remission |
| Furlan KC et al. (Brazil) [18] | 09 | M | Thorax | Immunocompromised | Death (3 months after admission) |
| Camus M et al. (France) [9] | 37 | M | Face | Immunocompetent | Complete remission |
| Tahir C et al. (Nigeria) [5] | 32 | F | Axillary, perineum | Immunocompetent | Complete remission |
| Xiaoyan Liu et al. (China)[4] | 09 | M | Left cheek | Immunocompetent | Complete recover |
| van Burik JA et al. (Belgium) [7] | 31 | F | Right forearm | Immunocompromised | Death (1 month after admission) |
| Our case | 58 | F | Leg | Immunocompetent | Complete remission |

could result in secondary skin lesions. These investigations also ruled out any immunocompromised status in our patients.

The patient was completely cured by systemic voriconazole prescription, with no signs of the disease.

## DISCUSSION

Primary Cutaneous Aspergillosis (PCA) is an extremely rare disease in an immunocompetent patient and poses a diagnostic challenge [1]. It is mainly observed in an immunocompromised patient. The usually affected organs are the lungs, paranasal sinuses, and the central nervous system. Primary skin lesions are secondary to direct aspergillus contamination, particularly in catheterized patients or following direct skin trauma, burns, or contaminated dressings.

Factors that increase the risk of aspergillosis is included cancer, burns, chronic granulomatous disease, and neutropenia (leukemia, cytotoxic chemotherapy, broad-spectrum corticosteroids or antibiotics, and patients infected with the virus human immunodeficiency) [2,3].

However, no immunodeficiency or history of immunosuppressive drug use was found in our patient. So the lesion in our patient was probably secondary either to the trauma of her leg or to a contaminated dressing that she had used previously.

Xiaoyan Liu, et al. [4] reported a case of primary cutaneous aspergillosis in an immunocompetent child with erythematous plague on his left cheek. He was scratched by a branch 3 months ago and a papule appeared on the wound site several days later (Table 1) [5].

Chaturvedi R, et al. [6] described the observation of an immunocompetent female with multiple axillary and perineal ulcers. She contracted the infection from contaminated palm oil on which she was conducting research and got inoculated after shaving her axillae and perineum. The histological features confirmed invasive Aspergillosis. The patient fully recovered after medical treatment and wound surgery.

So we can see that invasive cutaneous Aspergillosis produces several types of lesions and can take various forms such as macules, papules, nodules, or plaques [7]. The semiological similarity of these lesions with those of a hemangioma could lead to a diagnostic wandering and a delay in the therapeutic management.

Candida albicans followed by Aspergillus are considered the most common causes of opportunistic fungal infection in humans [1,8,9].

Camus et al. [10] reported the observation of an immunocompetent farmer who consulted for erythematous nodular lesions of the face that had not responded to antibiotic treatments. Further investigations have ruled out the possibility of underlying immunosuppression. Systemic treatment with voriconazole allowed complete remission.

The diagnosis is based on histopathological examination of the biopsy or the resected cutaneous specimen, followed by the biological culture of the sample. In some cases, hyphae can be observed under direct microscopic examination [11].

In our patient, additional investigations confirmed the absence of other foci of Aspergillosis.

The immune status of the infected patient should be evaluated immediately after the confirmation of the diagnosis because the underlying immunity of the host plays a vital role in the treatment of Aspergillosis [12].

Their treatment is based on systemic antifungal medications [13].

In skin lesions, surgical excision in combination with drug therapy is curative [7,14-18].

## CONCLUSION

Primary Cutaneous Aspergillosis is extremely rare in

immunocompetent patients. It has often misleading clinical presentations.

Chronic isolated skin lesions in immunocompetent patients should raise the possibility of Cutaneous Aspergillosis.

The correct diagnosis relies on the histopathological or microbiological analysis of the lesion.

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