



Contamination Leading to Pseudo-Outbreak of *Cladosporium* species from the Department of Dermatology

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Dear Editor:

In April 2021, a 29-year-old female patient presented with multiple erythematous scaly papular patches on the left side of her abdomen (Fig. 1A). We performed fungal examination and biopsy to differentiate eczema, and tinea corporis. Although there was no evidence of fungi on histopathologic examination, dematiaceous fungi were isolated from fungal cultures. Finally, *Cladosporium* spp. were identified from lactophenol cotton blue stain of isolated fungi. At first, topical amorolfine hydrochloride cream and oral terbinafine were prescribed as the lesion was considered eczema with concomitant *Cladosporium* spp. infection. However, the lesion was refractory to 1 month of topical and systemic antifungal therapy. Consequently, the patient showed improvement with topical and systemic corticosteroids.

From April to May 2021, 12 (63.1%) culture samples from

the Department of Dermatology were identified as *Cladosporium* spp. Nine cases were isolated from the toe nail under the diagnosis of onychomycosis. Among them, three patients were follow-up lost, and four cases showed clinical improvement by systemic or topical anti-fungal agent whereas two cases showed refractory lesions. Two cases were isolated from erythematous scaly patch on trunk and thigh, respectively, and both cases were successfully treated with concomitant systemic corticosteroids and anti-fungal agent. Biopsy was performed from one case, and the result was consistent with dermatophytosis. The patient was treated with topical anti-fungal agent and clinical improvement was shown after one month. Out of 209 samples that had shown positive fungal culture results over the past 2 years, 17 (8.1%) samples showed the presence of *Cladosporium* spp. (Fig. 1B). Due to the sudden increase in the isolation of *Cladosporium* spp., the Department of Laboratory Medicine requested an environmental check-up in the Department of Dermatology. To determine possible contamination, we conducted fungal cultures from the medical instruments before and after sterilization (Fig. 2). Sterilization was performed using a disinfectant product containing 50% benzalkonium chloride. In several areas, *Cladosporium* spp. were identified for a maximum of 4 weeks. No fungal growth was observed after sterilization. From the experiment, we provisionally concluded that the sudden increase in *Cladosporium* infections was due to contamination of the laboratory field.

Cladosporium spp. are ubiquitous, dematiaceous fungi, commonly isolated from indoor and outdoor environments, including hospital air¹. In indoor cases, they are particularly common in the air and on humid or wet surfaces. Although they are infrequently associated with opportunistic infections

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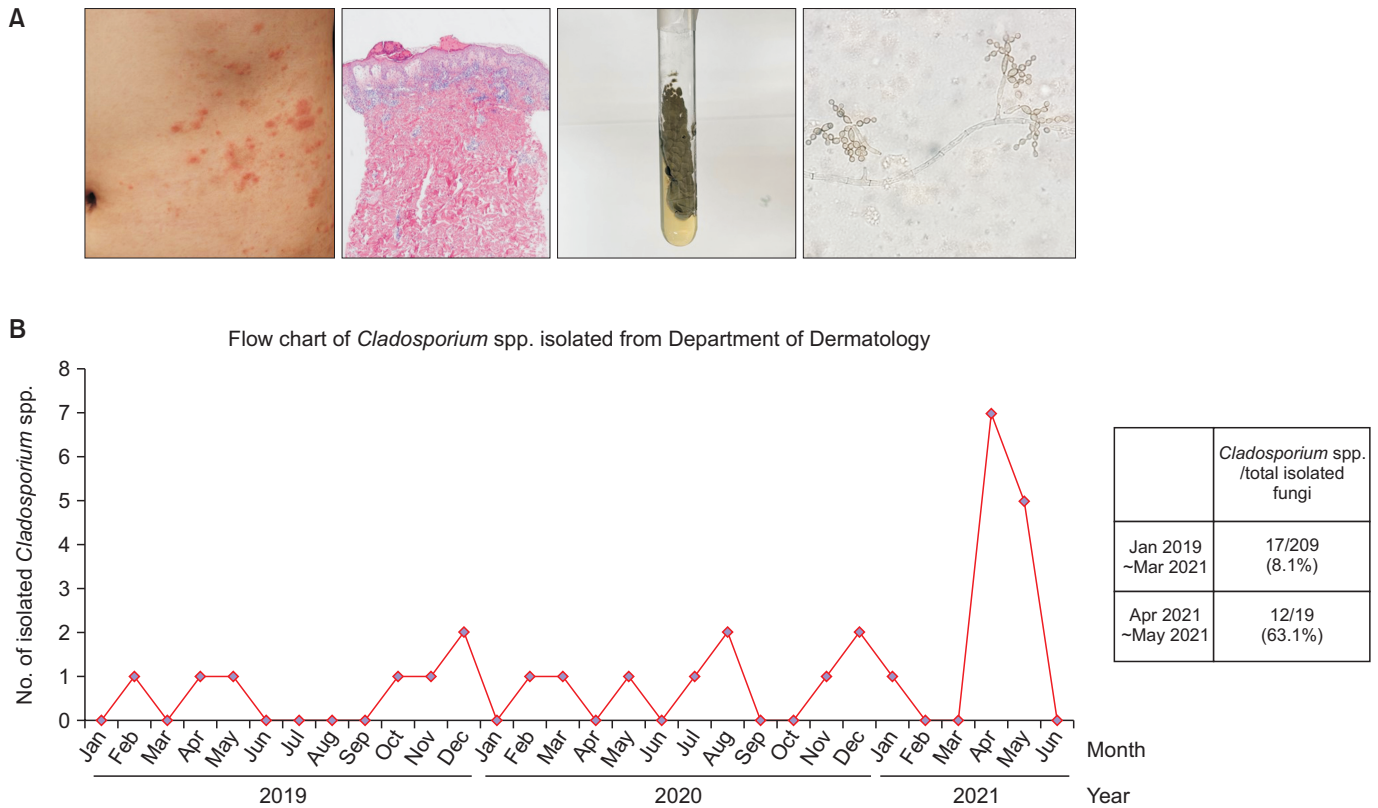
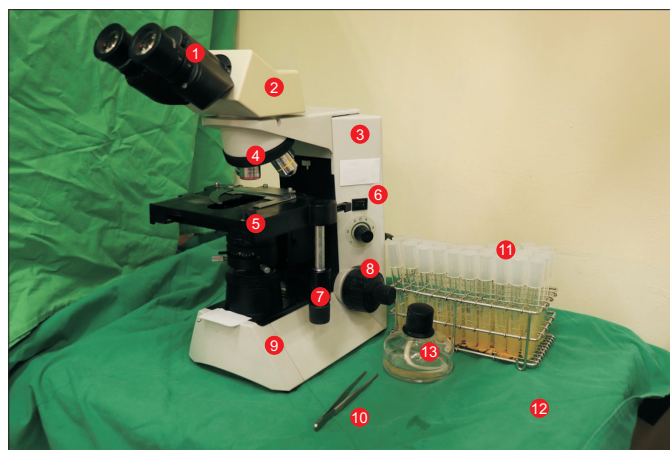


Fig. 1. (A) Clinical presentation of a 29-year-old female patient showing multiple erythematous scaly patches on her left abdomen. Histopathological examination shows acanthosis and spongiosis of the epidermis and superficial perivascular infiltration of the dermis, which was consistent with eczema. Fungal spore or hyphae was not observed (H&E, original magnification $\times 40$). Olivaceous-brown to blackish-brown floccose colonies on Sabouraud dextrose agar. On microscopic examination, dark-brownish septate hyphae are observed. Round to oval conidia form branching tree-like chains (lactophenol cotton blue stain, original magnification $\times 400$). (B) Schematic chart of *Cladosporium* spp. isolated from the Department of Dermatology.



Sites where swab cultures were performed for fungal culture	Isolated <i>Cladosporium</i> species	
	Before sterilization	After sterilization
1 Ocular lens	(-)	(-)
2 Head	(+)	(-)
3 Arm	(+)	(-)
4 Objective lens	(-)	(-)
5 Mechanical stage	(-)	(-)
6 Light switch	(+)	(-)
7 Stage control	(-)	(-)
8 Coarse & fine adjustment	(+)	(-)
9 Base	(-)	(-)
10 Forceps	(-)	(-)
11 SDA media plate	(-)	(-)
12 Surface of table	(-)	(-)
13 Alcohol lamp	(+)	(-)

Fig. 2. Environmental examination conducted before and after sterilization with 50% benzalkonium chlorides.

in humans and animals, long-term exposure to *Cladosporium* spp. can cause adverse health effects, such as allergies, sinusitis, and pulmonary infection. As cutaneous infection is

extremely rare in immunocompetent patients, early suspicion should be raised in case of an abnormal increase of incidence in the institution²⁻⁴. Contamination by *Cladosporium* spp. has

been reported in several reports, even in the pharmaceutical cleanroom environment⁵. As nosocomial infections could break out in any hospital environment, it is important to identify whether it is a pseudo-outbreak and to ensure early detection using a multidisciplinary surveillance system. Furthermore, as the contaminated fungi can cause infections in vulnerable patients, regular sterilization of the laboratory environment is recommended.

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CONFLICTS OF INTEREST

The authors have nothing to disclose.

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