



# FACIAL CELLULITIS CAUSED BY *CANDIDA GUILLIERMONDI* IN AN IMMUNOCOMPETENT PATIENT: A RARE CASE REPORT

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## ABSTRACT

**Background:** *Candida* cellulitis is a rare disease, primarily reported in immunocompromised patients. Atypical *Candida* spp. infections are increasing, largely due to the growing number of immunocompromised patients. This case report describes a 52-year-old immunocompetent patient with facial cellulitis caused by *Candida guilliermondi*. *Candida guilliermondi* has not previously been reported as a cause of facial cellulitis in either immunocompromised or immunocompetent patients.

**Case presentation:** A 52-year-old, otherwise healthy, male patient presented with facial cellulitis that did not respond to intravenous antibiotics. Culture of the drained pus revealed *Candida guilliermondi*. The patient was successfully treated with intravenous fluconazole.

**Conclusion:** This case highlights the possibility of atypical *Candida* spp. causing deep facial infections in immunocompetent patients. *Candida guilliermondi* has not been previously reported as a cause of facial cellulitis in either immunocompromised or immunocompetent patients. Healthcare providers should consider atypical *Candida* spp. infections in the differential diagnosis of deep facial infections in both immunocompromised and immunocompetent patients.

## KEYWORDS

Facial cellulitis, *Candida guilliermondi*, immunocompetent patient

## LEARNING POINTS

- *Candida guilliermondi* can cause facial cellulitis in immunocompetent patients. This has not been previously reported.
- Atypical *Candida* spp. infections should be considered in the differential diagnosis of deep facial infections in both immunocompromised and immunocompetent patients.
- Healthcare providers should be aware of the increasing incidence of non-*Candida albicans* *Candida* species infections, especially in immunocompromised patients.



## INTRODUCTION

The incidence of atypical *Candida* spp. infections is increasing, primarily due to the growing number of immunocompromised patients. Although *Candida albicans* remains the most common pathogen, non-*Candida albicans* *Candida* species infections have been on the rise over the last few decades<sup>[1]</sup>. *Candida guilliermondii* is ubiquitously distributed in the environment and is responsible for 1-3% of candidemia cases, depending on the geographic region. It is often more resistant to antifungal agents than other *Candida* strains<sup>[2]</sup>. Aside from candidemia, *Candida guilliermondii* has also been linked to osteomyelitis, septic arthritis, endocarditis, mastitis, and skin lesions<sup>[3-6]</sup>. *Candida* cellulitis is a rare disease, only a few cases have been reported. All of these cases were observed in immunocompromised patients<sup>[7-10]</sup>. Herein, we present an unusual case of facial cellulitis caused by *Candida guilliermondii* in an immunocompetent patient.

## CASE REPORT

A 52-year-old male patient was admitted to the hospital due to erythema, heating sensation, edema, tenderness, and discharge in the submandibular region. The patient was empirically treated with ceftriaxone and metronidazole as an outpatient for 5 days, but no improvement was observed. The patient's laboratory results showed normal erythrocyte, hemoglobin, hematocrit, and platelet levels, and a white blood cell count of  $5.3 \times 10^9/l$ , with a neutrophil count of 72.5%, a lymphocyte count of 21.8%, and a monocyte count of 5.7%. The patient's C-reactive protein level was 1.4 mg/dl, and his liver function tests and renal function tests were within the normal range. Chest X-rays were normal, and blood cultures were negative. A CT scan of the head and neck showed edema/thickening of the cutaneous/subcutaneous tissue, starting from the suprahyoid region and extending to both sides of the submandibular region, more prominently to the left side. The patient's general condition worsened despite receiving intravenous antibiotic treatment, and an incision was made in the left submandibular region. A culture of the pus swab revealed *Candida guilliermondii*, and the patient was started on intravenous fluconazole. Three days after starting fluconazole therapy, the edema began to recede, and the patient showed signs of improvement. The local symptoms improved five days after starting fluconazole treatment, and the patient was discharged on day seven with oral fluconazole for an additional week. The patient showed no recurrence of cellulitis on examination after four weeks.

## DISCUSSION

In recent years, there has been an increase in infections caused by non-*Candida albicans* *Candida* species, primarily due to the growing population of immunocompromised patients<sup>[1]</sup>. *Candida guilliermondii* is responsible for 1-3% of candidemia cases, depending on geographical location. It is known to be more resistant to antifungal treatments than other *Candida* strains<sup>[2]</sup>. In addition to candidemia,



Figure 1. Patient with facial cellulitis caused by *Candida guilliermondii* on the day of admission



Figure 2. Patient with facial cellulitis caused by *Candida guilliermondii* on the day of discharge, after 7 days on IV fluconazole treatment

*Candida guilliermondii* can cause osteomyelitis, septic arthritis, endocarditis, mastitis, and skin lesions<sup>[3-6]</sup>. Facial cellulitis caused by *Candida* spp. is a rare, non-hematogenous, deep-seated infection that typically occurs in immunocompromised hosts<sup>[6-10]</sup>. *Candida guilliermondii* has not been previously reported as a cause of facial cellulitis in either immunocompromised or immunocompetent patients. We present the case of an immunocompetent patient with no comorbidities who developed submandibular cellulitis caused by *Candida guilliermondii*. Successful treatment was achieved with fluconazole, and no recurrence of cellulitis was observed after four weeks of follow-up. The exact mechanism by which *Candida guilliermondii* caused cellulitis in this patient remains unclear. One possibility is that a breach in the skin barrier allowed the fungus to invade and cause infection.

## CONCLUSION

This case highlights the importance of considering atypical deep infections by *Candida* species, even in immunocompetent patients. While *Candida guilliermondii* is not commonly associated with facial cellulitis, this case demonstrates that it can still be a potential causative agent, and prompt diagnosis and appropriate antifungal

therapy can lead to successful treatment outcomes. The case also highlights the importance of considering atypical *Candida* spp. deep infections in the facial region in both immunocompetent and immunocompromised patients, as well as the effectiveness of intravenous fluconazole in treating *Candida guilliermondii* infections.

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