Rare cutaneous manifestation of *Trichosporon asahii*

Jack Schnur, Colton Hawco, Ilya Fonarov, Damian Casadesus

Internal Medicine, Jackson Memorial Hospital, Miami, Florida, USA

Correspondence to
Dr Damian Casadesus;
dcasadesus@hotmail.com

Accepted 6 June 2021

DESCRIPTION

An 85-year-old woman with a history of coronary artery disease, heart failure with preserved ejection fraction, hypertension, hyperlipidaemia, diabetes mellitus, chronic obstructive pulmonary disease on home oxygen, pulmonary embolism, gastrointestinal bleeding secondary to erosive gastritis, hypothyroidism and chronic kidney disease presented to the emergency room with acute urinary retention. She was admitted to our institution a month prior with respiratory distress secondary to a pulmonary embolism complicated with cardiac arrest. She was discharged home after a short length of stay. She had a surgical history of a hemicolectomy because of colon cancer 26 years ago.

Early during the hospitalisation, she had a gastrointestinal bleed necessitating transfusion of two units of packed red blood cells. She subsequently developed respiratory failure requiring intubation. Henceforth the patient was managed with respiratory support provided via mechanical ventilation in the intermediate care unit. The patient's condition improved, and 3 days later, she was successfully extubated. Her laboratory studies revealed a white cell count of $6.1 \times 10^9/L$, haemoglobin 83 g/L and platelets $192 \times 10^9/L$. In our unit, the cardiopulmonary examination was normal. Skin examination showed an ulcer on the dorsum of the right hand with thickened borders, clean pink tissue at the base with surrounding oedema but without any discharge (figure 1). A detailed history was obtained from the patient regarding the ulcerations on the hand. She stated that the ulcer started as a necrotic wound at the insertion site of a peripheral line a few days after the previous admission.

A skin biopsy was obtained for cytology and culture. In the tissue obtained for culture, *Trichosporon asahii* was identified by Biomerieux Maldie, a mass spectrometry microbial identification system,

Learning points

- ▶ *Trichosporon asahii* can be associated with skin ulceration in patient without neutropaenia.
- ▶ Physicians should consider trichosporonosis as a new emerging cause of non-candida infection.

and the patient started treatment with voriconazole 400 mg orally two times per day. The patient recovered, and 3 days later, she was discharged home to complete a 30-day course of oral antifungal treatment. The patient was readmitted 45 days later due to weakness. Her haemoglobin was 67 g/L. She received one unit of packed red blood cells and was discharged 24 hours later. During this last admission, the skin ulcer was completely healed.

Trichosporon species, especially *T. asahii* (formerly known as *Trichosporon beigeli* and *Trichosporon cutaneum*), is an emerging and common cause of non-Candida fungaemia. Disseminated trichosporonosis typically starts as an acute febrile illness that progresses to multiorgan failure. In two large studies regarding *Trichosporon* species, invasive infections were associated with antibiotic therapy, central line use, neutropaenia, high doses of steroids, haematological malignancies and intensive care admissions.^{1–4} The crude mortality rate is more than 50% of the patients.²

Trichosporon species have been misdiagnosed as contaminants because they are part of the skin microbiota. *T. asahii* is considered the leading cause of disseminated infections. Superficial infections due to *T. asahii* are sporadic and rare, occurring primarily in immunocompetent patients.^{5,6} White piedra, a superficial infection of hair shafts, is the most common superficial infection, which mainly occurs in tropical regions. Other cutaneous manifestations have been previously described in very few patients. In five patients, it included erythematous papules more frequently in the trunk and extremities followed by bullae formation.^{7–9} In another patient, a cellulitis with progression into the subcutaneous tissues resulted in a fatal outcome.⁶ In our patient, it initially manifested as central necrosis. At the time of the second admission, it appeared as an ulcer at the site of a prior peripheral line insertion.

Contributors JS, CH and DC participated in the clinical management of the patient. JS, CH and DC obtained and edited the picture. CH, IF and DC have been involved in the drafting and discussion of the manuscript. JS, CH, IF and DC reviewed and approved the final version.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Figure 1 Right hand ulcer with thick defined borders and pink tissue in the base.

© BMJ Publishing Group Limited 2021. No commercial re-use. See rights and permissions. Published by BMJ.

To cite: Schnur J, Hawco C, Fonarov I, et al. *BMJ Case Rep* 2021;**14**:e243659. doi:10.1136/bcr-2021-243659

Patient consent for publication Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Ruan S-Y, Chien J-Y, Hsueh P-R. Invasive trichosporonosis caused by *Trichosporon asahii* and other unusual *Trichosporon* species at a medical center in Taiwan. *Clin Infect Dis* 2009;49:e11–17.
- 2 Girmenia C, Pagano L, Martino B, *et al.* Invasive infections caused by *Trichosporon* species and *Geotrichum capitatum* in patients with hematological malignancies: a retrospective multicenter study from Italy and review of the literature. *J Clin Microbiol* 2005;43:1818–28.
- 3 Kontoyiannis DP, Torres HA, Chagua M, *et al.* Trichosporonosis in a tertiary care cancer center: risk factors, changing spectrum and determinants of outcome. *Scand J Infect Dis* 2004;36:564–9.
- 4 Ebricht JR, Fairfax MR, Vazquez JA. Trichosporon asahii, a non-Candida yeast that caused fatal septic shock in a patient without cancer or neutropenia. *Clin Infect Dis* 2001;33:e28–30.
- 5 Ageitos JM, Vallejo JA, Veiga-Crespo P, *et al.* Oily yeasts as oleaginous cell factories. *Appl Microbiol Biotechnol* 2011;90:1219–27.
- 6 Baka S, Tsouma I, Kouskouni E. Fatal lower limb infection by *Trichosporon asahii* in an immunocompetent patient. *Acta Dermatovenereol Croat* 2013;21:241–4.
- 7 Nahass GT, Rosenberg SP, Leonardi CL, *et al.* Disseminated infection with *Trichosporon beigelii*. Report of a case and review of the cutaneous and histologic manifestations. *Arch Dermatol* 1993;129:1020–3.
- 8 Hsiao GH, Chang CC, Chen JC, *et al.* Trichosporon beigelii fungemia with cutaneous dissemination. A case report and literature review. *Acta Derm Venereol* 1994;74:481.
- 9 Piérard GE, Read D, Piérard-Franchimont C, *et al.* Cutaneous manifestations in systemic trichosporonosis. *Clin Exp Dermatol* 1992;17:79–82.

Copyright 2021 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <https://www.bmj.com/company/products-services/rights-and-licensing/permissions/>
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- Submit as many cases as you like
- Enjoy fast sympathetic peer review and rapid publication of accepted articles
- Access all the published articles
- Re-use any of the published material for personal use and teaching without further permission

Customer Service

If you have any further queries about your subscription, please contact our customer services team on +44 (0) 207111 1105 or via email at support@bmj.com.

Visit casereports.bmj.com for more articles like this and to become a Fellow