

Soft tissue infection caused by *Candida tropicalis*

Brennan Bowker MHS, PA-C, CPAAPA,^{1,2} Alyssa Tuozzoli MPAS, PA-C,¹ Ashley Shafran PA-S,² Alyssa Crispino PA-S,²
Rebecca Vangsness PA-S,² Nicholas Charboneau MHS, PA-C,^{2,3} Tyler J. Jones MD,^{1,4} Kristin Oliveira MD^{1,4}

¹Yale New Haven Hospital, Department of Surgery, New Haven, CT
²Quinnipiac University, Department of Physician Assistant Studies, Hamden, CT
³Yale New Haven Hospital, Department of Emergency Medicine, New Haven, CT
⁴Yale School of Medicine, Department of Surgery, New Haven, CT



Introduction

- Candida tropicalis* is an extremely virulent fungal species that is rapidly emerging as an important cause of infection¹
- Infection with *C. tropicalis* was once considered rare, however, the annual incidence is on the rise²
- The overall mortality due to *C. tropicalis* infections is high^{3,4} and even higher in the cases of fungemia with rates approaching 52%⁵
- Equally concerning, *C. tropicalis* exhibits several unique virulence factors including biofilm production and can rapidly develop resistance to standard treatments⁶⁻⁸
- Skin infections from *C. tropicalis* are usually the result of hematogenous spread secondary to candidemia although primary infections have been reported⁹⁻¹¹

Case Description

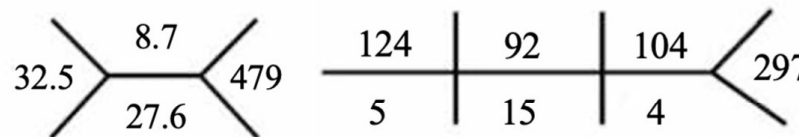
History

- HPI:** A 54-year-old male presents to the emergency department with one-week history of left testicular pain, chills, and dysuria.
- PMH:** hypertension, poorly controlled diabetes mellitus, chronic kidney disease
- Medications:** amlodipine 10 mg PO daily, empagliflozin 25 mg PO daily, insulin lispro 6 units subcutaneously TID, linagliptin 5 mg PO daily, losartan 50 mg PO daily, rosuvastatin 40 mg PO qHS, tamsulosin 0.4 mg PO qHS
- Allergies:** peas (hives)
- Surgical History:** left partial 5th metatarsal resection and split thickness skin grafting
- Social History:** former smoker, no IVDA

Physical Examination

- Vitals:** T 98°F, HR 97 bpm, BP 137/69 mmHg
- General:** Uncomfortable, not in extremis
- GU:** Scrotum was tense and extremely tender to palpation, erythema of the entire scrotum extending inferiorly to the perineum and right side of the buttock which was also extremely tender and tense (**Image 1**)

Laboratory Analysis



Urinalysis

RBC: 10/HPF
WBC: 484/HPF
Bacteria: Rare
Yeast: Moderate

CRP: >300
Lactic acid: 1.6
HbA1c: 8.6

LRINEC: 13

Discussion

- Risk factors for *C. tropicalis* infection include chronic lung disease, renal impairment, and immunosuppression²
- Mortality rates up to 60%, with limited data on long-term sequelae²
- Over the past 10 years, *C. tropicalis* resistance to fluconazole has nearly tripled.² *C. tropicalis* appears to produce more biofilm than other candida species⁶ and has greater levels of proteinase and hemolytic activity⁷ both of which add to its virility; as a result, sensitivity testing should be performed
- Echinocandins, such as anidulafungin and caspofungin, can be used as treatment options for *C. tropicalis*²
- In the case of *C. tropicalis* skin infections, source control often obtained by incision and drainage is vital¹³

Hospital Course

- Patient admitted and taken operating room **without** imaging
- A Foley catheter was placed and it drained 3L of cloudy urine which was sent for culture
- An incision was made in the perineum and a large volume of purulent fluid was encountered and cultured
- The scrotum was inspected and spared from the infection
- The area was irrigated with jet lavage and the wounds packed with dilute sodium hypochlorite-soaked gauze (image 2)
- Postoperatively, the patient was taken to the intensive care unit on vasopressors

- Cultures from the urine, blood, and wound all grew ***Candida tropicalis***
- Infectious disease was consulted and recommended a two-week course of fluconazole
- Testing of the *Candida* found it to be resistant to fluconazole and therefore he was changed to anidulafungin
- Shortly after starting the anidulafungin, the patient developed visual and auditory hallucinations which are described as a rare side effect of the drug
- This was then changed to isavuconazonium and the hallucinations resolved
- He was discharged on hospital day #52

Image 1



Image obtained at presentation

There is significant erythema of the scrotum and perineum extending posteriorly to the right buttock; both of which were tense and extremely tender

Image 2



After surgical intervention

Several Penrose drains were left to help facilitate ongoing drainage; there is significant improvement of the previously noted erythema

Conclusion

- Cases involving *C. tropicalis* have substantially increased, along with its resistance to first-line treatments
- Mortality rates are exceptionally high
- Prompt treatment is necessary to prevent further spread of infection and reduce mortality

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