

# Management of Candida Parotitis With Recurrent Abscess Formation Utilizing VAC Therapy: a rare case and literature review

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## Abstract

**Objectives:** Discuss the management of fungal parotitis and fungal parotid abscesses. Discuss the role of VAC therapy for complex and recurrent head and neck wounds.

**Methods:** Case report and literature review utilizing the Medline database

**Results:** We report a case of a 45-year-old female with poorly controlled diabetes who presented with a left sided fungal parotid abscess and possible associated Warthin's tumor. She failed initial treatment with incision and drainage, antifungals, and antibiotics. Repeat incision and drainage was necessary, and a wound VAC was placed. Her wound was successfully closed after 5 days of VAC therapy with completion of an antifungal and antibiotic course.

**Conclusions:** This case adds to the limited literature on the management of fungal parotitis and fungal parotid abscesses. Common therapy includes incision and drainage with antifungal +/- antibiotic treatment. To our knowledge, this is the first case of recurrent parotid abscess managed with VAC therapy. Data from limited published studies overwhelmingly supports VAC therapy as a useful modality in selected complex and poorly healing head and neck wounds. In the only other reported case of multiply recurrent fungal parotid abscess, a Warthin's tumor was found. In our patient, biopsy results failed to confirm Warthin's tumor, however the presentation and CT scan are consistent with this associated diagnosis. Fungal parotitis with or without abscess formation represents a rare clinical entity which may be associated with Warthin's tumors, immunocompromised patients, and poor wound healing. In such cases, we propose VAC therapy as a useful aid to accelerate wound healing and prevent recurrent abscess formation.

## Introduction

Acute parotitis predominantly occurs in the elderly and in patients with systemic/chronic conditions.<sup>1,2</sup> While *Staphylococcus aureus* and other oral flora are the most common infectious pathogens, fungal species have been implicated in rare published cases.<sup>1,3</sup> Although *Candida* and other fungi are commensal organisms in the oral cavity, the natural antifungal activity of saliva normally prevents salivary gland infections.<sup>3</sup> As such, patients with fungal parotitis are typically immunocompromised or have an underlying parotid mass and therefore may be at risk for poor wound healing and/or recurrence.<sup>4,5</sup>

Few studies exist on VAC therapy for head and neck wounds. However, overwhelmingly, the limited published literature supports VAC therapy as a useful adjunct to accelerate and improve healing for complex head and neck wounds.<sup>6,7</sup> To our knowledge, we present the first case of recurrent fungal parotid abscess and poor wound healing treated with medical, surgical and VAC therapy.

## Methods and Materials

We present a case report and literature review for the management of fungal parotitis with or without abscess and wound VAC therapy for complex/poorly healing head and neck wounds.

**Figure 1:** *Candida Glabrata* Parotitis With/Without Abscess: Features and Treatment Course

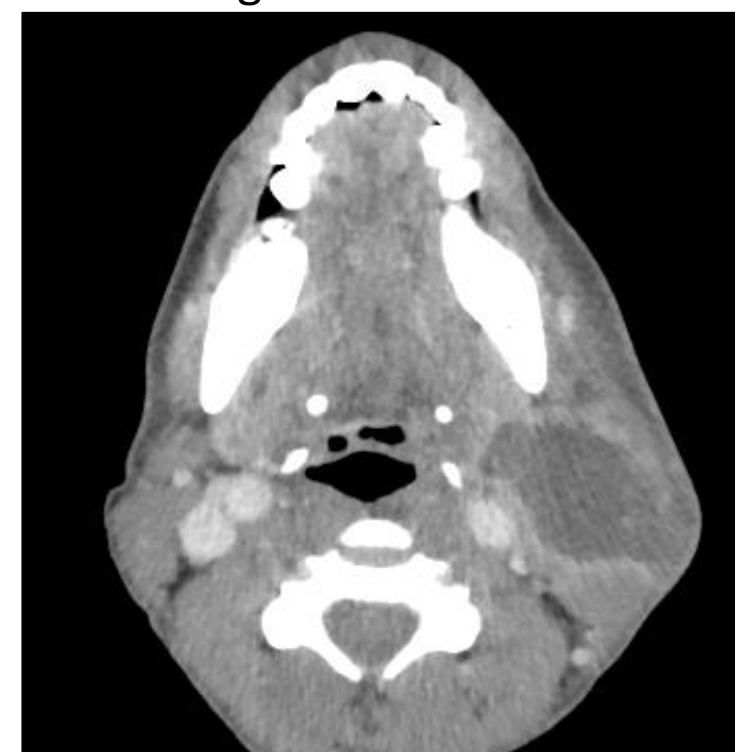
Ref.	Age/sex	Medical History	Presentation	Treatment	Outcome
8	75/ F	Diabetes, Vascular disease	Left sided facial swelling x 6 days with purulent discharge from parotid duct. CT demonstrated left sided parotitis, no abscess. Cultures grew <i>C. glabrata</i>	1. Vancomycin 2. Superficial parotidectomy 3. fluconazole added	Died due to chronic medical conditions
3	87/ F	Vascular disease, hypertension, taking diuretics and ACE inhibitor	9 months of stable left parotid swelling followed by 2 days of increased swelling and pain. Fever to 38.3 C, normal WBC. Ultrasound demonstrated an intraparotid abscess. Cultures from needle aspirate grew <i>C. glabrata</i>	Fluconazole 800 mg/day x 1 day, 400 mg/day x 2 weeks	Involution of abscess and resolution of symptoms
5	59/ M	Smoker	1 year of painless, <1 cm mass of the right parotid tail followed by rapid onset of painful erythema and induration. Afebrile, normal WBC. CT demonstrated large parotid abscess, and needle aspirate of purulent material grew <i>C. glabrata</i> . Patient had multiple recurrences. Tissue taken at second surgery confirmed underlying Warthin's tumor.	1. IV antibiotics and fluconazole 2. I/D + amoxicillin/clav. and fluconazole 3. I/D + fluconazole 4. Wide excision + parotidectomy + fluconazole x 6 weeks	Underlying Warthin's tumor diagnosed and treated. No further recurrence and resolution of symptoms.
9	81/ F	Diabetes, hypertension, vascular disease, Alzheimer's	5 days of progressive right sided facial swelling. Failed antibiotics. Mild fever, WBC elevated. Right facial nerve weakness. CT and MRI showed 2-3 cm abscess in the right parotid. FNA showed amylase crystalloids and cultures grew <i>C. glabrata</i>	1. Amoxicillin/clav. 2. IV Clindamycin 3. CT guided FNA	Lost to follow up
Present Case	45/ F	Insulin dependent DM II which is poorly controlled, Smoker	1 week of painful left facial/ neck swelling worsening on antibiotics. CT scan showed large parotid abscess with possible underlying Warthin's tumor. Cultures obtained from I/D grew only yeast. Recurrent abscess and wound breakdown occurred requiring I/D and VAC therapy. Final cultures grew <i>C. glabrata</i> sensitive to voriconazole, Strep., and Lactobacillus.	1. Incision and drainage + antibiotics and fluconazole 2. Repeat incision and drainage with VAC therapy + IV antibiotics and fluconazole 4. amoxicillin/clav. and voriconazole x 7 days	No further abscess recurrence, wound healed well. Symptoms resolved.

## Results

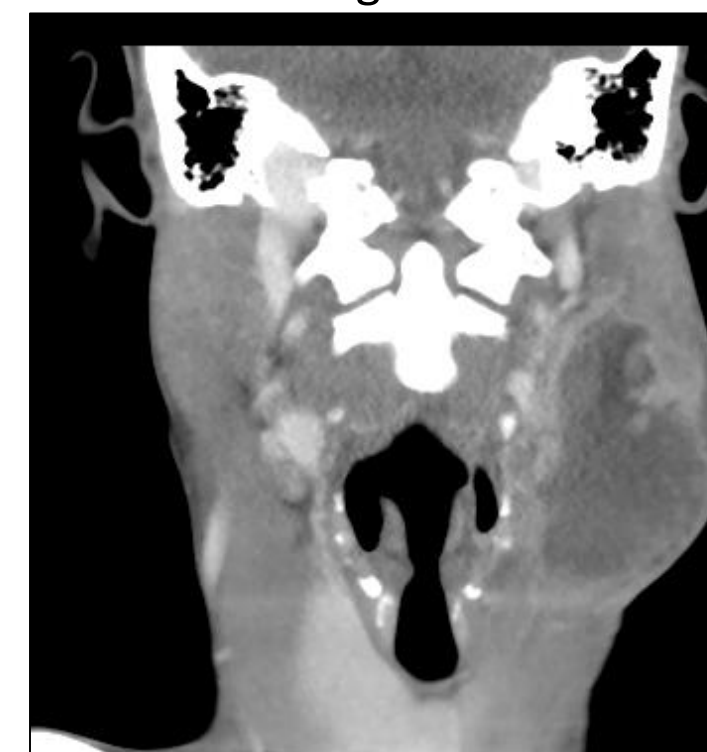
A 45-year-old female with poorly controlled diabetes presented with one week of painful left neck and facial swelling. A CT neck with contrast demonstrated a large left sided parotid abscess with possible underlying Warthin's tumor (Fig 2a-2c). Patient underwent incision and drainage (I/D) and was given IV unasyn x 1 day followed by oral Augmentin x 7 days. On post op day (POD) 3 cultures grew only yeast and fluconazole was added to her regimen.

On POD 7, there was minor breakdown of her wound and she admitted to medication non-compliance. She returned on POD 12 with significant wound dehiscence and recurrent abscess. She underwent an I/D and wound debridement with VAC placement. IV unasyn plus IV fluconazole was started. The wound VAC was removed on POD 5 with underlying healthy granulation tissue and the wound was closed. Final wound cultures grew *Group B Strep*, *Lactobacillus*, and *Candida glabrata* sensitive to voriconazole but variably sensitive to fluconazole. The patient was discharged on oral Augmentin and Voriconazole x 7 days. Patient remains recurrence free to date.

**Figure 2a:** Axial CT. Abscess 5.31 cm in longest dimension



**Figure 2b:** Coronal CT. Abscess 6.57 cm in longest dimension



**Figure 2c:** Sagittal CT. Abscess 6.27 cm in longest dimension



## Discussion

*C. glabrata* parotitis with/without abscess formation is rare. Excluding our presented case, only 4 reports have been published.<sup>3,5,8,9</sup> Clinical characteristics, treatment regimen and overall outcome of these cases are summarized in Figure 1. More generally, fungal parotitis with/without abscess has been reported in 12 cases. Seven due to *Candida* species<sup>3,5,8-12</sup>, 3 *Cryptococcus*<sup>13-15</sup>, 1 *Coccidioides*<sup>16</sup>, and 1 *Histoplasmosis*<sup>4</sup>. Fungal species are part of the normal oral flora in healthy adults, with *C. albicans* and *C. glabrata* most prevalent.<sup>3</sup> However, saliva has intrinsic antifungal properties and consequently fungal parotitis is uncommon, primarily affecting the elderly, immunocompromised, diuretic or denture users, and diabetics.<sup>3</sup>

No formal treatment recommendations exist for fungal parotitis. Frequently, a combination of antifungal +/- antibiotic therapy with/without abscess drainage is required. Causal fungal species, antifungal susceptibilities, drug dosing schedules, and renal function are used to determine treatment duration and specific antifungal agent. Additionally, the final treatment regimen may benefit from infectious disease consultation. In our presented case, diabetes control was improved with the help of medicine consultation and poor wound healing aided by repeat I/D and VAC therapy. Following these measures, cure was achieved with: oral amoxicillin/clavulanate 875 mg twice daily (BID) x 7 days and oral voriconazole 400 BID x 1 day followed by 200 mg BID x 6 days.

To our knowledge this is the first case of fungal parotid abscess treated with VAC therapy. There is limited literature regarding VAC therapy for head and neck wounds, however, smaller studies overwhelmingly show efficacy for improved wound healing. Reiter et al. investigated 23 patients treated with VAC therapy after free/pedicle flap failures or necrotizing fasciitis, with 18 patients (78%) achieving wound closure without further surgery.<sup>6</sup> Dhir et al. followed 19 patients treated with VAC therapy for complications after cancer resection, including wound dehiscence, infection, osteoradionecrosis, and pedicle flap failure. After VAC therapy, 16 patients (84%) required no additional operative treatment.<sup>7</sup>

In the only other published case of recurrent parotid abscess due to *C. glabrata*, an underlying Warthin's tumor was found.<sup>5</sup> In our case, imaging and surgical specimens did not confirm an underlying tumor, however, the overall presentation and imaging was consistent with this possible diagnosis. Currently, the patient remains recurrence free and has elected to pursue continued observation rather than definitive surgery.

## Conclusions

Fungal parotitis with or without abscess represents a rare clinical entity which may be associated with immunocompromised patients and poor wound healing. Mainstay of treatment involves medical and surgical intervention with anti-fungal +/- antibiotic therapy and abscess drainage. In cases of recurrent abscess, consideration of an underlying cystic tumor, such as Warthin's, should be given. Additionally, in cases of poor wound healing after abscess drainage and for other complex head and neck wounds, VAC therapy can be a useful adjunct to accelerate healing and prevent recurrence. Future, high quality, studies investigating VAC therapy for complex and high failure risk head and neck wounds are warranted.

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