

## Case Report

## Gi Microbiome in Thyroid Abscess

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Thyroid infections, including abscesses, are a rare phenomenon given the thyroid glands distinctive protective characteristics including its protective fibrous capsule, rich blood supply, high iodine content and lymphatic drainage. Physicians must include this in their differential diagnosis in order to make an early diagnosis, and thus be able to provide early and aggressive treatment to avoid complications and morbidity.

**Keywords:** Thyroid; Abscess; Thyroid infection; Intubation; *Klebsiella pneumoniae*; Neck mass

**Abbreviations**

WBC: White Blood Cells; ESR: Erythrocyte Sedimentation Rate; PMN: Polymorphonuclear Neutrophil; CRP: C - Reactive Protein; CT: Computed Tomography; FNA: Fine Needle Aspiration; ENT: Ear, Nose and Throat

**Case Presentation**

37-year-old female with no significant medical history was transferred with dysphagia, odynophagia, neck pain and fevers, appearing the day after an exploratory laparoscopy under general anesthesia, for chronic abdominal pain. No difficulty with intubation was documented. CT neck/chest showed a retropharyngeal fluid collection and concern for mediastinitis. Patient had no stridor, mild drooling, exquisitely tender and large fluctuant left anterior neck mass. WBC was 14.5k/uL with 92% PMNs, CRP 19.2mg/dL, ESR 96mm/Hr, lactic acid 2.1mmol/L, HIV screen and blood cultures were negative. Patient was started on vancomycin and zosyn. Thyroid ultrasound showed a heterogeneous hypoechoic area 3.9x2.1x2.2cm with areas of air. A repeat CT neck/chest showed 1.7x3.5cm poorly defined air fluid collection in the left retropharyngeal space and medial left thyroid. Gastrografin esophagogram was without leaks or fistula. FNA biopsy of the mass revealed purulent fluid consistent with abscess and cultures grew *Lactobacillus paracasei* and *Candida albicans*. Fluconazole was added to the antibiotics. In hospital day 16, ENT was reconsulted due to worsening leukocytosis, neck pain, and fevers. CT neck/chest with contrast showed a large consolidated and organized mass/collection replacing most of the left thyroid lobe with extension posteriorly to the tracheoesophageal groove consistent with abscess. At exploration, an intrathyroidal abscess in the left thyroid lobe was visualized and drained, and no fistulas were appreciated.

Abscess cultures grew *Candida albicans*, *Streptococcus equinus*, Coagulase Negative Staphylococcus, and *Klebsiella pneumoniae*. Thyroid biopsy was consistent with an abscess and no malignancy. Patient was discharged on Fluconazole and Ertapenem for 4 weeks.

**Conclusion**

Thyroid abscesses represent 0.1 to 0.7% of surgically managed thyroid masses; thus delay in diagnosis/treatment can lead to complications, including destruction of the thyroid, parathyroid glands, sepsis, abscess rupture, and fistulas [1]. The microbiology in this case was consistent with oral/tracheal/ GI flora; however, no communication was detected by sono/radiography or during surgery. The presence of an underlying thyroid abnormality leading to seeding from a transient undocumented polymicrobial bacteremia could not be ruled out, though unlikely. Most thyroid abscesses reported are associated with blood stream infections due to Staphylococci and Streptococci species. Our hypothesis is that intubation trauma to the hypopharynx led to a small communication that healed spontaneously. Persistence of left pyriform sinus has been shown to cause acute thyroiditis. Despite 16 days of broad-spectrum antibiotics, patient required drainage of the abscess for resolution. The growth of *Candida albicans* in FNA and open drainage cultures is of particular significance since antifungal therapy would generally not be part of presumptive therapy for thyroid abscess. The case illustrates the importance of including thyroid abscess and all possible pathogens in the differential to be able to initiate appropriate and aggressive management.

**References**

1. Adeyemo A, Adeosun A, Adedapo K. Unusual cause of thyroid abscess. African Health Sciences. 2010; 10: 101-103.