

# Peritonsillar abscess: differential diagnosis of croup and epiglottitis



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Croup, with an incidence of about 5-6 cases per 100 toddlers incidence peaking in the second year of life <sup>1</sup> ; a viral infection of the upper airway found most commonly in children aged 6 months to 6 years is characterized by the hallmark “ seal bark” cough; usually accompanied by hoarseness and stridor. Epiglottitis is an uncommon disease with an incidence in adults of about 1 case per 100, 000 per year <sup>2</sup> ; a bacterial infection of the upper airway a possibly life-threatening condition that is characterized by the inflammation of the epiglottis causing drooling, fever, sore throat and immobility of the neck. These two EENT conditions are usually the most commonly referenced and known among paramedic students due to their frequency of presentation among patients and usual two-fold comparison style presentation. One over-shadowed condition I will be addressing through this paper is known as Peritonsillar abscesses or “ Quincke” With an incidence of about 1 in 10, 000, PTA (see the image below) is the most common deep space infection of the head and neck that presents to the emergency department <sup>3</sup> . This paper will start by describing my own personal experiences and the chain of events that led me to be diagnosed and treated for peritonsillar abscesses. Followed by the pathophysiology of the condition; signs and symptoms, differential diagnosis, and finally, treatment.

I was diagnosed with a peritonsillar abscess in December of 2017, my symptoms began in earnest as early as October of the same year, when I was involved in the clinical stage of my EMT program at Daytona State College. My very first symptoms were that of minor congestion and a small degree of sore throat. I visited my PCP and he diagnosed me with sinusitis, the cause of the congestion, and post nasal drip, the cause of sore throat. I

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was prescribed the antibiotic Azithromycin along with a nasal decongestant, Pseudoephedrine. Over the next following days of my ride time my symptoms became progressively worse and I developed a few new ones alongside them. I began experiencing a large amount of pressure behind left eye. The pressure was of a high enough magnitude to exhibit a Pink-eye-esque appearance and subsequently I began to lose hearing in my left ear over the next few days. My sore throat had become less evenly distributed and was more focused on the left side of my throat and I developed a loss of mobility in my neck and pain on palpation. I decided to pay my PCP another visit after I developed a low-grade fever of 100. 2 F. My usual doctor was not in on the day I visited, and I was seen by another doctor of the same practice. He examined my throat and came to the conclusion that I was experiencing some form of epiglottitis and prescribed to be another Antibiotic, Amoxicillin. I had finished the remainder of my ride time and graduated from EMT school a week later and my symptoms were still present, and I been avoiding food and water because of the ever-increasing dysphagia. I returned one more time to my PCP after my fever had gone up to 102. 3 F and shortly after examining my throat my doctor brought in a few of the other practice doctors including the substitute I received the week prior and began talking about the presence of a peritonsillar abscess and he referred my to a EENT specialist in the next county over with an appointment scheduled 1 hour later. When I arrived at the specialist, I was greeted by the doctor I would be visiting until the eventual tonsillectomy I received in April of 2018.

At the time of the examination I was unable to open my mouth further than 1 centimeter and I was unable to speak without pain and my voice was equated to that of a “ hot-potato voice” by the doctor. He told me that he would have to use a needle to draw out the contents of the abscess and quite frankly the length of the needle was frightening so while he was preparing the adjacent room I was slowly rotating my fingers into my teeth to spread my mouth as far apart as possible. When he returned, he noted that I was able to force my mouth open wide enough to allow him to consider another option. The treatment he provided was that of an incision and drainage of the abscess which took about 1 minute to perform with the subsequent expelling of blood and pus from the site of incision in volumes approximate of 500ml. I experienced immediate relief of neck pain, trismus, pain and I was able to speak uninhibited within as little as 5 minutes. The fever was gone the next morning when I woke up. I was sent home that afternoon with a steroid for my throat and another antibiotic, Doxycycline. I healed relatively quickly, and I enrolled in the fire academy by the end of the month. I remained asymptomatic and free of pain for roughly 2 months before I experienced a repeat of my prior illness, twice as a matter of fact over the course of the academy.

Each time I visited the EENT and had my abscesses incised and drained. The doctor recommended I receive a tonsillectomy, to prevent future abscesses and I agreed to a surgery the week after the academy ended. I had my tonsils removed as previously mentioned in April of 2018 and during the surgery the doctor had discovered two more abscesses hidden behind my left tonsil and had to remove and cauterize them during the procedure

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leading to an extended recovery period and permanent alteration to my upper airway. I was sent home with a transdermal medication patch of Zofran, Another round of antibiotics, Amoxicillin. And Hydrocodone-acetaminophen syrup. Approximately 6 days after the procedure I began to cough and spit up bright red blood approx. 300ml, before I was rushed to my doctor for an emergency surgery to remove a blood clot in my upper airway. Over the duration of my recovery I lost 35 lbs. due to the inability to eat anything of sustenance due to the operation.

Concerning the pathophysiology of PTA's, it is important to become familiar with the anatomy of the upper airway, paying particular attention to the area pertaining to the two tonsils. tonsils are surrounded by a capsule consisting of a sheet of fibrous tissue that typically attach to muscles needing a wide area of attachment such as the palms or scalp or posterior lumbar. Referred to anatomically as aponeuroses. <sup>4</sup> In-between this tissue and the tonsils themselves is the space where peritonsillar abscesses are able to form <sup>5</sup> . Typically, PTA's are the result of some underlying infection or disease process, whether that be strep throat or tonsillitis. The abscess can become a life-threatening emergency when it grows large enough to interfere with or even occlude the airway of the patient. While PTA's typically affect only one side of the throat due to an isolated tonsil infection, there exists the rare possibility of the presentation of bilateral abscess formation which can rapidly and severely close off the airway and any attempt at intubation <sup>6</sup> . Commonly PTA's will form secondary to recurrent bouts of tonsillitis and incidence peaks in early adulthood, if a patient has had a tonsillectomy in their adolescent years it removes the possibility of peritonsillar formation, <https://assignbuster.com/peritonsillar-abscess-differential-diagnosis-of-croup-and-epiglottitis/>

but the abscess has the potential to develop in the retropharyngeal space regardless of the presence of tonsils.

Signs and symptoms of PTA's can be wide and varying but the most common for patients to present with are ipsilateral throat pain and swelling of the neck which can occasionally cause pain and loss of hearing on the ear of the same side of the face. Dysphagia and limited mouth opening can lead to loss of appetite and resulting dehydration and malnutrition. Changes in commonly referred to as " Hot-potato voice". Systemic complications include high grade fever and constant tachycardia as a result of compensatory bodily response to infection. A difficulty with PTA's is in the problematic nature of their diagnosis, commonly they are mistaken for tonsillitis and viral pharyngitis, but it is most commonly confused with epiglottitis. It is only later into the development of the abscess that the symptoms become ipsilateral which should raise the suspicion of index for the disease. Another symptom typically unique to the disease when compared to epiglottitis in specific is the presentation of trismus as well as the presence of asymmetric tonsil. The most clinically significant symptom that separates PTA from Epiglottis is the presence of severe pain in the absence of erythema <sup>7</sup> . Lastly it is important to note that PTA's can develop even in the presence of antibiotic therapy, in fact a study performed in 2010 displayed that (66. 2%) of subjects developed PTA in spite of prior antibiotic therapy <sup>8</sup> . And there is evidence that multiple trials of oral antibiotics for acute tonsillitis may predispose patients to development of PTA's

In the prehospital environment treatment provided for PTA patients focuses on airway management and fluid rehydration. It is possible to have a patient break and open one of their abscesses due to excessive movement or manipulation of the airway which can lead to aspiration and ingestion of the abscess contents leading to other systemic complications. In hospital care for patients involves a choice of two immediate treatments for PTA's. Incision and drainage, the first and preferred procedure, in which a scalpel is used to incise into the abscess and dilation using hemostats to allow drainage of the contents. This procedure is limited in patients who present with severely limited mouth opening due and complicated by the possibility of aspiration and excessive fluid drainage that can be swallowed and cause secondary infection in the GI tract. Needle aspiration is the second available procedure, where a large bore needle attached to a syringe is used to puncture the abscess and remove the contents by withdrawing the plunger on the syringe, effectively pulling the pus out of the abscess. This procedure is less painful and generally easier to perform on most patients however if the contents of the abscess are plentiful this procedure may become complicated. The procedures listed are not always a definitive treatment as PTA recurrence is not uncommon and each subsequent instance of abscess formation increases the risk of a new instance. Elective tonsillectomy is recommended by EENT physicians for patients who experience more than one abscess. Due to the trauma and complications of the procedure in patients of non-adolescent ages it is not recommended for first time occurrence of an abscess.

In conclusion, our paramedic textbook is very informative and educational on the subject of both epiglottitis and croup but fails to provide adequate information about the condition of PTA's. It is common epiglottitis, as well as other disease processes are confused for and diagnosed in place of PTA's and it is not until the illness runs its course that differentiations can begin to be made. PTA's have the potential to be life threatening emergencies due to airway compromise and the possibility of massive systemic infection as a result of the encapsulated bacteria present within the abscess itself. Treatment remains controversial and limited procedures are available for both immediate and long-term results. Although there is no direct evidence claiming that elective tonsillectomies truly remove the potential for subsequent abscess formation, if a patient experiences multiple instances of the condition it is recommended that the option be seriously considered. The disease process is also surprisingly resilient when it comes to the implementation of antibiotic therapy and because of the typical series of events leading to diagnosis, using myself as an example, the condition can persevere and lead to worse patient outcomes. PTA's and how they pertain to emergency response providers when concerning management and prehospital treatment emphasis is placed on airway management and recognition of a possibly difficult intubation process with many complications involved. And on fluid rehydration in response to the probable dehydration present in PTA patients. As always, rapid transport and supportive care are essential and more important than definitive diagnosis of your patient's condition.

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