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Acute epiglottitis in a COVID-19 positive patient

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ABSTRACT

There have been more than 178 million global cases of COVID-19, the disease caused by the SARS-CoV-2 virus, with more than 3.8 million deaths worldwide [1]. COVID-19 can present with a wide variety of symptoms, and one rare manifestation that has been reported in the literature is acute epiglottitis. To date, there have been two reported cases of acute epiglottitis in COVID-19 positive patients [2, 3]. We present a case of a 49-year-old male presenting to a community emergency department with the chief complaint of dysphagia and sore throat, confirmed as acute epiglottitis, in the presence of a positive rapid COVID-19 PCR test.

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1. Introduction

As of June 21, 2021, there have been more than 178 million global cases and 3.8 million deaths from COVID-19, caused by the SARS-CoV-2 virus. This includes more than 33 million cases and over 601,000 deaths in the United States [1]. Common symptoms of COVID-19 include fever, cough, dyspnea, fatigue, and myalgias [4]. Patients with COVID-19 are encouraged to recover at home and not seek medical attention except in severe cases [5].

Acute epiglottitis is a medical emergency characterized by fever, pharyngitis, dysphagia, and dyspnea [6]. Diagnosis is made by the findings of inspiratory stridor in a febrile patient with dysphagia and hoarseness and is confirmed with radiographic imaging or visualization via laryngoscopy. Epiglottitis can cause rapid clinical deterioration; patients may require emergent airway management, potentially including tracheostomy.

Epiglottitis was classically considered a pediatric disease, often associated with *Haemophilus influenzae* bacteria type b (Hib). Since the introduction of the Hib vaccine in 1985, the condition has shifted epidemiologically from children toward adults, with a larger variation in causative organisms [7].

Cases of acute epiglottitis associated with COVID-19 are exceedingly rare – to our knowledge, there have been two cases reported in the literature, described by Fondaw et Al. in September 2020 [2], and by Alqaisi et Al. in January 2021 [3].

2. Case report

A 49-year-old male with a history of Wolff-Parkinson-White syndrome and hypertension presented to the emergency department (ED) at 08:59 with complaints of sore throat and dysphagia. He stated that his symptoms began the night before and reported a subjective fever for the past 24 h. Notably, he complained of hoarseness for the three weeks prior; he had been prescribed Cefdinir by his primary care physician to cover typical bacterial causes but experienced no relief of symptoms. He was not tested for COVID-19 or viral pathogens prior to arriving at the ED.

In the ED he was uncomfortable, complained of feeling “like something was stuck” in his throat, and was unable to tolerate PO hydration. He denied cough, congestion, rhinorrhea, chest pain, shortness of breath, abdominal pain, nausea, vomiting, or diarrhea. He described his pain as 10 out of 10 in severity, sharp, constant, non-radiating, and worse with swallowing. He denied other exacerbating or alleviating factors or additional symptoms. He was fully vaccinated as a child, including the Hib vaccine series.

Laboratory studies and neck CT were ordered. The patient was unable to tolerate the CT, as he felt uncomfortable lying down, so a soft tissue neck radiograph was ordered. Notable laboratory results included leukocytosis ($13.0 \times 10^9/L$), hyperglycemia (218 mg/dL), elevated lactate (2.1 mmol/L), and elevated procalcitonin (0.24 ng/mL). Soft tissue neck radiograph showed “mild prevertebral soft tissue swelling”.

Due to the patient's discomfort and dysphagia, a GI consult was initiated. However, the patient began to clinically deteriorate, reporting increasing difficulty breathing, and an ENT consult was placed. Rapid Streptococcus, Influenza A, and Influenza B were negative. COVID-19

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RT-PCR from the nasopharynx was positive. Chest X-ray showed “diffuse patchy bilateral airspace opacities”.

The patient underwent laryngoscopy by ENT and was subsequently taken to the operating room where awake nasal intubation failed. The OR report stated that they visualized an “edematous suppurative epiglottitis”. He underwent tracheostomy and was transferred to the ICU.

In the hospital he received Clindamycin, Rocephin, Remdesivir, and steroids, and his condition improved. He was discharged after 8 days with his tracheostomy, with an ENT follow up appointment in 2 weeks. He was contacted 1 day after discharge and 1 month later. He reported that he was feeling well, had returned to work, and was grateful for his care.

3. Discussion

COVID-19 can present with varied symptomatology – many patients complain of cough, fever, and dyspnea, but other potential symptoms include myalgias, ageusia, and anosmia [4]. This patient's complaints of dysphagia and pharyngitis without cough or dyspnea are not typical for COVID-19 [8]. Conversely, epiglottitis classically presents with a mix of pharyngitis, dysphagia, drooling, and airway obstruction.

Epiglottitis has been associated with numerous bacterial, viral, and fungal causes, including *H. influenzae*, β -hemolytic Streptococci, *S. pneumoniae*, Herpes simplex, Aspergillus, Candida [9]. When a specific pathogen cannot be identified, viruses are often the suspected etiology [10]. Additionally, there are cases with noninfectious causes, including angioedema, organophosphate ingestion, and aspiration of hot liquid or foreign bodies [10]. This patient's history and positive COVID-19 test makes SARS-CoV-2 a plausible etiology.

Distinguishing between typical COVID-19 symptoms and COVID-19-associated epiglottitis can be difficult, but dysphagia and the degree of pharyngeal discomfort can be potential distinguishing characteristics.

The CDC recommends that patients with COVID-19 should recover at home unless they notice trouble breathing, chest pain, or confusion [11]. Due to its emergent nature, it is important for physicians to maintain high clinical suspicion for epiglottitis should these patients report

pharyngitis, hoarseness, drooling, or stridor, as these patients might require emergent medical attention.

Declaration of Competing Interest

None.

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