

**Case Report***Copyright © All rights are reserved by Shaikha J Aldossary*

# COVID-19 Associated Parotitis in Pediatrics

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**Received Date: September 01, 2020****Published Date: September 10, 2020****Introduction**

As cases for the COVID-19 pandemic increase, the presence of atypical presentations' becoming more prevalent which may reflect the pathogenesis and nature of the disease; this is quintessential for clinicians to understand the disease to combat the pandemic effectively. Here we present an atypical COVID-19-associated parotitis in a 7 year old boy along with some differences between the different causes of parotitis as well as a possible explanation for the infection.

**Keywords:** COVID-19; Pandemic; Parotitis; Pediatrics; ACE2

**Abbreviations:** GI: Gastrointestinal; CMV: Cytomegalovirus; ED: Emergency Department; S: Spike; PCR: Polymerase chain reaction; ACE2: Angiotensin-Converting enzyme 2

**Introduction**

The COVID-19 pandemic affected approximately 20 million cases worldwide and 297 thousand in the Kingdom of Saudi Arabia [1]. Most patients complain of fever, dry cough, and fatigue as these were the most common presentation [2], but as medicine is not an exact science, not all patients present uniformly; unusual systemic non-respiratory related presentations involving gastrointestinal and neurological systems have also been documented [3], it is paramount to understand the scope of the systems involved in any disorder to understand the method of combatting it to achieve optimal patient-centered care; though, in this case it is further reinforced by general public safety. We present one of these unconventional patients; a 7 year old boy who came with right sided facial and neck swelling.

**Case Presentation**

A 7 year old boy presented to the ED with a three day history of right sided painful facial and neck swelling with no underlying skin changes. He had no history of fever, cough, weight loss, decrease

in appetite, dental pain or facial weakness. He is not known to have any previous medical conditions and has no known history of contact with ill patients. All his immunizations are up to date.

On examination, the patient had normal vital signs and moderate right-sided cheek, pre-auricular, and submandibular swelling without erythema, induration or fluctuance. The intraoral exam was normal, with no purulent drainage expressible from Stenson's duct and no evidence of occlusion. The rest of his physical exam was unremarkable.

Laboratory investigation revealed normal complete blood count except for the presence of a mild lymphopenia. Inflammatory markers were unremarkable. Mumps screen was unremarkable. COVID-19 PCR (Nucleic Acid Amplification Testing) nasopharyngeal specimen was found to be positive.

The patient was managed with analgesia and close observation, the swelling regressed within one week which warranted no further intervention necessary.

## Discussion

Atypical presentations have been observed since the start of the COVID-19 pandemic, examples involving GI symptoms (e.g. solely diarrhea) without any respiratory symptoms [4]. Neurological manifestations including meningitis-like symptoms [5], drowsiness, hypotonia [3] and Guillain-Barre syndrome [6] as well as cutaneous manifestations presenting as vasculitis purpuric rash [7] have all been documented.

The classic presentation of viral parotitis is that of bilateral involvement while bacterial parotitis presents commonly unilaterally. While our case presented unilaterally, it has no other features which can be attributed to bacterial parotitis; fluctuance, induration, discharge and erythema [8].

Though paramyxovirus is the classic cause of viral parotitis [9], recent case reports about the atypical presentation of parotid gland swelling in the setting of PCR confirmed COVID-19 infection have been documented in France (3 cases), USA (1 case) and Italy (1 case), respectively [10-12]. All cases were adult patients. Similar to our case, all cases presented with a unilateral parotid gland swelling. Physical findings were also consistent with no features of suppurative parotitis (erythema, induration or discharge), Lab test were almost normal except for two cases, one with slight leukopenia [11], and the other with mildly elevated CRP [12], serological tests were negative for Mumps, [10,11] paramyxoviruses or CMV [12]. Radiological findings were consistent with a non-suppurative parotid gland swelling with no ductal obstruction by a mass or stone [10-12].

In order to understand the pathophysiological mechanism of SARS-CoV infection in human hosts, Li et al studied the interaction between SARS-CoV spike (S) protein and Angiotensin-converting enzyme 2 receptor (ACE2). The authors suggested that ACE2 poses a potential target for SARS-CoV viral replication [13]. Despite sequence diversity, SARS-CoV-2 S protein was also found to have a strong interaction with human ACE2 receptor [14]. Although known to present in virtually all organs, ACE2 receptor is highly expressed in alveolar epithelial cells and intestinal enterocytes [15]. More recently, ACE2 receptor was found to be highly expressed in minor salivary gland than in alveolar epithelium [13]. This finding suggests that salivary gland might be a possible target for SARS-CoV-2 infection as well as the asymptomatic presentation of COVID-19.

## Conclusion

We conclude that knowledge of such atypical COVID-19 presentation may render healthcare advantage in detecting and preventing further transmission of SARS-CoV-2. Further research

on the pathological changes and the relationship between SARS-CoV-2 and parotid enlargement is needed.

## Acknowledgement

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## Conflict of Interest

All the authors stated that there was no conflict of interest.

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