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Orbital cellulitis complicated with subperiosteal abscess following post-nasopharyngeal swab for COVID-19: A case report

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Abstract **Key Clinical Message**The nasopharyngeal swab for COVID-19 is associated with low risks of severe complications, but it is important to consider the patient's medical history and anatomy of the nasal cavity to ensure safety and accuracy of the test. Orbital complications can occur up to 85% secondary to acute sinusitis, and prompt treatments are crucial, particularly in the pediatric group. A conservative approach is effective for subperiosteal abscess if certain criteria are met, and it is not an absolute indication for immediate surgical intervention. However, timely management of orbital cellulitis is essential for better outcomes.

Pre-septal and orbital cellulitis are more commonly seen in children than in adults. The incidence of pediatric orbital cellulitis is 1.6 in 100,000. The impact of COVID-19 has led to the increasing practice of nasopharyngeal swab surveillance. We presented a case of rare pediatric orbital cellulitis complicated with subperiosteal abscess secondary to severe acute sinusitis following a nasopharyngeal swab. A 4-year-old boy was brought in by his mother with increasing painful left eye swelling and redness. Three days prior, the patient developed a fever and mild rhinitis with loss of appetite which raised concerns about COVID-19. He had a nasopharyngeal swab on that same day and tested negative. Clinically, there was marked erythematous and tender periorbital and facial oedema involving the left nasal bridge, maxilla extended to the left upper lip with a deviation of the left nasal tip contralaterally. Computed tomography confirmed left orbital cellulitis with left eye proptosis, fullness of left maxillary and ethmoidal sinuses and left subperiosteal abscess. The patient received empirical antibiotics and surgical intervention promptly and recovered well with improvements in ocular symptoms. The nasal swabbing techniques may vary among practitioners, and it is associated with extremely low risks of severe complications from 0.001% to 0.16%. Whether the swab had aggravated the underlying rhinitis or traumatized the turbinates leading to sinus drainage obstruction; a nasal swab may impose the risk of severe orbital infection in a susceptible pediatric patient. Any health practitioner conducting the nasal swab should be vigilant about this potential complication.

Keywords

Author Keywords: COVID-19; nasopharyngeal swab; orbital cellulitis; SARS-CoV-2

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