

Viral shedding in tears of COVID-19 cases presenting as conjunctivitis

Dear Editor:

Conjunctivitis as a presenting feature of coronavirus disease (COVID-19) is well-known.^[1,2] All these cases may not develop respiratory symptoms.^[3]

Herein, we present two patients of unilateral viral conjunctivitis; a 46-year-old female (case 1) and a 30-year-old male (case 2).

Nasopharyngeal (NP) and conjunctival swab (from the involved eye) were sent for detection of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) nucleotides by real-time polymerase chain reaction (RT-PCR) 2 days after the onset of conjunctivitis. A specimen was considered positive if the amplification curve for the *E* gene crossed the threshold line within 35 cycles and was positive for *RdRp* or *ORF 1b* gene assay.^[4] The viral load was assessed using the cycle threshold (Ct) value of the *E* gene. The Ct value of genes *E*, *ORF*, and *RdRp* of NP swab and a conjunctival swab of case 1 and NP swab of case 2 were 16, 18, 24; 21, 21, 29; and 32, 35, 0, respectively. The conjunctival swab was negative in case 2.

Disturbance of conjunctival epithelial cells by respiratory pathogens can result in an adaptive immune response resulting in inflammation of the ocular surface.^[5] The pathogens, while in tears, if not neutralized by the local mechanisms can infect the respiratory tissues. Subsequent systemic manifestation possibly depends upon the innate immunity of the patient.

Presence of viral RNA in the tears in case 1 could be related to the high viral load, evident by low Ct value of NP swab and absence in case 2, could be due to low viral load as indicated by high Ct value of NP swab. To our knowledge, this is the first report of tear positivity in COVID-19 case with conjunctivitis in the absence of systemic symptoms.

Therefore, patients of conjunctivitis with lower Ct values of NP swab could be silent spreaders of COVID-19 through tears and should be investigated for SARS-CoV-2 disease.

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Conflicts of interest

There are no conflicts of interest.

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