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Dr. Pradip Kumar Das & Dr. Eshita Das

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Introduction: From December 2019 onwards, corona virus disease 2019 (COVID-19) has become a global pandemic caused by the highly transmissible severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Although ocular manifestations in humans are mild and rare, the route of infection through ocular secretions is currently unknown, and it remains unclear how SARS-CoV-2 penetrates into the ocular retions1, 2. Probable theories include direct inoculation of the ocular tissues from respiratory droplets or aerosolized viral particles, migration from the nasopharynx via the nasolacrimal duct, or even hematogenous spread through the lacrimal gland. Patients invaded with SARS-CoV -2 can present with symptoms of conjunctivitis, including eye redness, ocular irritation, foreign body sensation, tearing and chemosis or swelling of eyelids 4, 5.

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ABSTRACT

Introduction: From December 2019 onwards, coronavirus disease 2019 (COVID-19) has become a global pandemic caused by the highly transmissible severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Although ocular manifestations in humans are mild and rare, the route of infection through ocular secretions is currently unknown, and it remains unclear how SARS-CoV-2 penetrates into the ocular retions1, 2. Probable theories include direct inocula- tion of the ocular tissues from respiratory droplets or aerosolized viral particles, migration from the nasopharynx via the nasolacrimal duct, or even hematogenous spread through the lacrimal gland. Patients invaded with SARS-CoV -2 can present with symptoms of conjunctivitis, including eye redness, ocular irritation, foreign body sensation, tearing and chemosis or swelling of eyelids 4,5. There have been no reports of COVID-19 patients experiencing blurred vision, subconjunctival hemorrhage, eyelid ecchymoses, conjunctival scarring, keratitis, or pseudomembrane formation. Patients who have acquired the new coronavirus may have ocular symptoms. Conjunctivitis is an inflammation of the membrane covering the eyeball. It is often referred to as 'pink eye'. Viral conjunctivitis is known to present with upper respiratory infections (colds, flu, etc.) and may be a symptom of the COVID-19. A recent global study reveals that "conjunctival congestion" or "red eye" can lead to a confirmed diagnosis of COVID-19 infection9,10. The present Case study shows the confirmed diagnosis of covid-19 infection with Red Eye or Conjunctivitis as the main symptom of presentation. Based on this information, the occurrence of conjunctivitis is low as compare to other systemic manifestation of Covid-19 infections.

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I. CASE DESCRIPTION & DISCUSSION

A 34-year-old apparently healthy Security Guard, residing at K.M. Bhattacharyya Street, Serampore, Hooghly, working in a Multi–Super-speciality Hospital of Serampore of Hooghly District under the State of West Bengal of India presented in the private clinic on 1st May 2021 with one day history of redness, mild watery discharge and light photophobia in both the eyes. The patient had no symptoms of fever, cough, shortness of breath, or general malaise. In his personal history, he did not declare any travel abroad in the last 15 days. Due to the second wave infections highly prevailing in the state of West Bengal, swab tests for SARS-CoV-2 were recommended along with routine blood tests and chest x-ray etc. The RT-PCR test was applied on 2nd May 2021 and 3rd May 2020 had positive results with Ct value (ORF1a/ORF1b/N/N2 Gene)-29. In his ophthalmic examination, the visual acuity was 6/6 for both eyes without correction. Intraocular pressure was 14 mmHg on the right and 12 mmHg on the left eye. Slit-lamp examination of the right eye revealed mild eyelid edema and serous secretion with 2+ conjunctival injections, mild chemosis. The cornea was transparent, and no sign of inflammation was detected in the anterior chamber. Fundus examination revealed vital optic disc and macula. Anterior and posterior segment examination of the right and left eye was normal. On his physical examination, it was noted normal Blood Pressure (130/80 mm of Hg), Pulse rate (76/m) and normal temperature (98.4 Degree Fahrenheit), normal respiration rate (18/m). On his GI. CVS, Respiratory and Nervous system examination, did not show any abnormality or any

tenderness or enlargement of the submandibular, preauricular, or cervical lymph nodes. The patient declared that he used personal protective equipment during close contact with suspected COVID-19 cases in the Emergency Department while he was on duty works. His chest computed tomography and chest X-ray showed no significant parenchymal lesion in the lungs, both hila were normal, cardiac shadow was within normal, diaphragm & angles were normal. The routine blood examination showed levels of fasting glucose (110 mg/dl), in (08.00 mg/L), AST (24 U/L), ALT (44 U/L), LDH (190 U /L), and lymphocytes % (24.5%). He was started on taking systemic Ivermectin 12 mg and Azithromycin (500 mg) od for 5 days, Levocetzine 5 mg daily for 5 days and Moxifloxacin Eye drop 1-2 drop thrice daily and instructed to self quarantine until the complete resolution of the infection. Because of the infectious nature of COVID-19, quarantine protocols prevented access to the hospital during the active phase of the disease[3].

II. DIFFERENTIAL DIAGNOSIS

Ocular manifestations of COVID-19 are not a common one. It was reported that most patients experiencing mild conjunctivitis otherwise indistinguishable from other viral causes. Differential diagnosis includes other viral conjunctivitis like Adenovirus conjunctivitis, Bacterial conjunctivitis ,Allergic conjunctivitis, Herpes simplex virus keratitis, Anterior uveitis, Foreign body, Chemosis in a critically ill patient.

III. PROGNOSIS

Ocular manifestations of COVID-19 are recently thought to be self-limited. Various case study reports revealed no sight-threatening manifestations of COVID-19.

IV. COMPLICATIONS

At present no serious complications of ocular manifestations of COVID-19 was reported, but larger studies and long-term follow up of these patients have to be followed up for a long period .

V. CONCLUSIONS

Corona viruses leading to ocular diseases are relatively rare compared to adenovirus and influenza viruses. Truly it is evident that the main route of transmission of the SARS-CoV-2 is through the respiratory tract, several studies have already been done regarding infection in the unprotected eyes. Studies have shown that invasion of SARS-CoV-2 into the human body requires the ACE-2 receptors for cell penetration[7]. The ACE-2 receptors are found not only in human type 2 alveolar epithelial cells but also in the cornea and conjunctiva. This indicates that ocular surface tissue may be a potential target tissue for SARS-CoV-2. Recently, it has not been cleared whether ocular secretions are contagious or not However, it is presumed that, when the ocular surface comes into contact with SARS-CoV-2, virus particles can introduce into the respiratory tract through the nasolacrimal canal. Therefore, it is necessary to use protective glasses or shields. Thus, it is advised that all physicians and ophthalmologists should be cautious when facing a patient with conjunctivitis and take proper steps for the protection of possible ocular transmission of SARS-CoV-2 until a vaccine is recommended[8,9].

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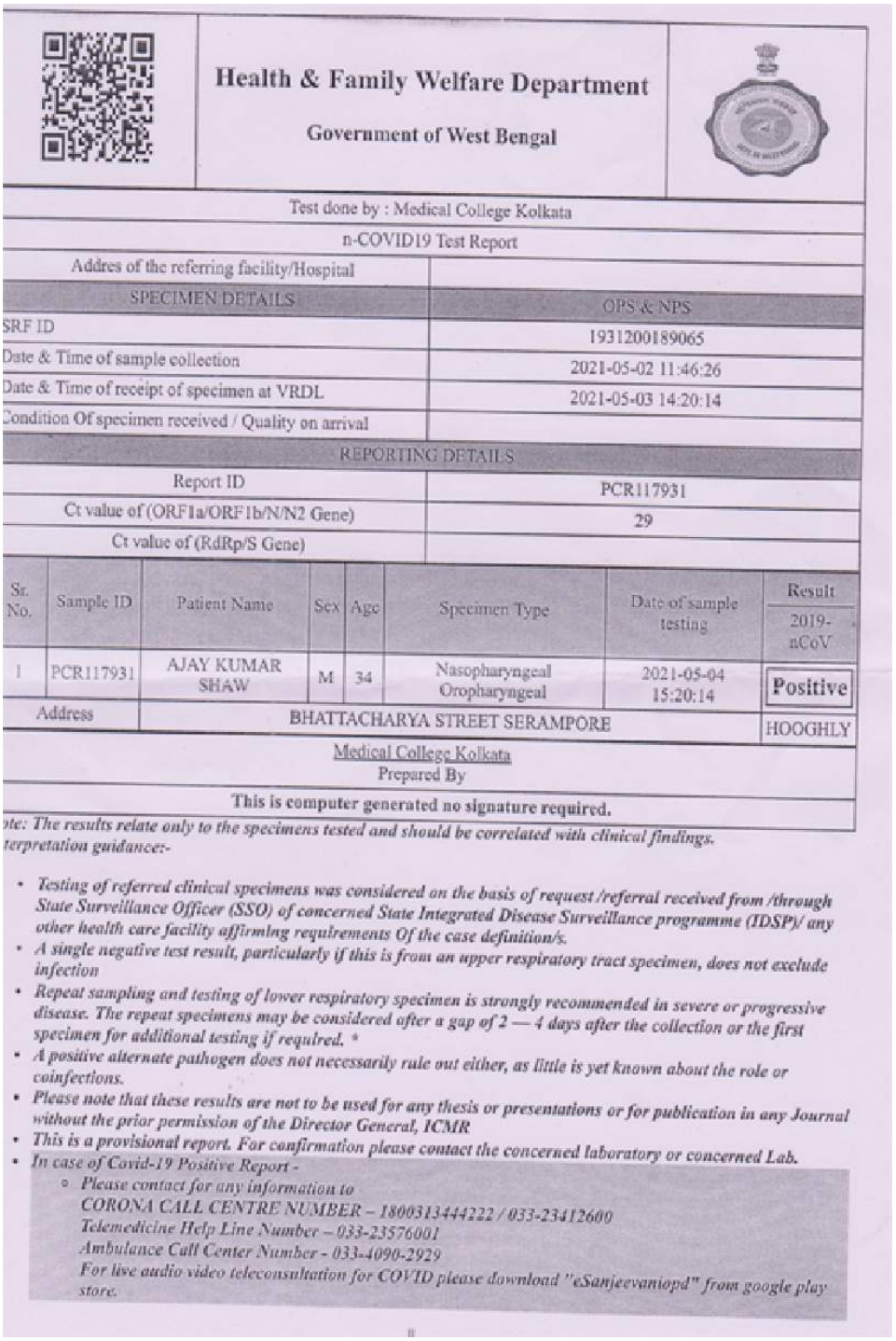

Health & Family Welfare Department

Government of West Bengal

Test done by : Medical College Kolkata

n-COVID19 Test Report

Addres of the referring facility/Hospital	
SPECIMEN DETAILS	OPS & NPS
SRF ID	1931200189065
Date & Time of sample collection	2021-05-02 11:46:26
Date & Time of receipt of specimen at VRDL	2021-05-03 14:20:14
Condition Of specimen received / Quality on arrival	
REPORTING DETAILS	
Report ID	PCR117931
Ct value of (ORF1a/ORF1b/N/N2 Gene)	29
Ct value of (RdRp/S Gene)	

Sr. No.	Sample ID	Patient Name	Sex	Age	Specimen Type	Date of sample testing	Result 2019-nCoV
1	PCR117931	AJAY KUMAR SHAW	M	34	Nasopharyngeal Oropharyngeal	2021-05-04 15:20:14	Positive
Address	BHATTACHARYA STREET SERAMPORE						HOOGHLY

Medical College Kolkata
Prepared By

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ote: The results relate only to the specimens tested and should be correlated with clinical findings.
terpretation guidance:-

- *Testing of referred clinical specimens was considered on the basis of request /referral received from /through State Surveillance Officer (SSO) of concerned State Integrated Disease Surveillance programme (IDSP)/ any other health care facility affirming requirements Of the case definition/s.*
- *A single negative test result, particularly if this is from an upper respiratory tract specimen, does not exclude infection*
- *Repeat sampling and testing of lower respiratory specimen is strongly recommended in severe or progressive disease. The repeat specimens may be considered after a gap of 2 — 4 days after the collection or the first specimen for additional testing if required. **
- *A positive alternate pathogen does not necessarily rule out either, as little is yet known about the role or coinfections.*
- *Please note that these results are not to be used for any thesis or presentations or for publication in any Journal without the prior permission of the Director General, ICMR*
- *This is a provisional report. For confirmation please contact the concerned laboratory or concerned Lab.*
- *In case of Covid-19 Positive Report -*
  - *Please contact for any information to*
    CORONA CALL CENTRE NUMBER – 1800313444222 / 033-23412600
    Telemedicine Help Line Number – 033-23576001
    Ambulance Call Center Number - 033-4090-2929
    For live audio video teleconsultation for COVID please download "eSanjeevaniopd" from google play store.