First Confirmed SARS-CoV-2 Related Deceased in Ethiopia on Post-mortem Examination and the Context Confronted in Limited Forensic Pathology Centre: case report.

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Case Report

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Abstract

A 55-year-old male was found dead in the church of Kefa Zone, Southern Nation and Nationality People Region, the local area of Ethiopia about 500 km away from the only available national forensic centre in Addis Ababa, Ethiopia. He had no medical history of comorbidity or medicine prescribed previously as well as no contact history with COVID-19 cases. Also, no travel history to Addis Ababa, which has an epicenter of COVID-19 high burden cases, and no living individuals reported cases of COVID-19 patients in local residence of the deceased. The National COVID-19 emergency operating team already decided to do postmortem surveillance and collect nasopharyngeal or oropharyngeal swabs for SARS-CoV-2 on all the dead bodies submitted to the mortuary for postmortem examination. For this case and other cases on that day postmortem nasopharyngeal swabs collected and sent for RT-PCR COVID19. Test confirmed COVID-19 positive for this deceased one day after the body handed over to family and transported back to residence of the deceased. The external post-mortem examination revealed an emaciated middle-age adult male with rigor mortis on lower extremity and non-blanching livor mortis on the back of the body. There was no evidence of recent injury. On internal examination pleural adhesions were present on anterior and posterior aspect of left lung. The left lung extensively necrotized, collapsed and weighs about 280grams. Right lung was dark red in color, consolidated, weighs 450 grams, patchy petechial hemorrhages on the pleural surface. No viscera preserved for microbiology, virology, histopathology, or immunohistochemistry tests as these facilities are not available in our set up. With the pandemic impact of SARS-CoV-2, a range of issues unfolds, also during autopsies, as we report the first Ethiopian case of fatal SARS-CoV-2 pneumonia confirmed on post-mortem examination.

1 Introduction

The 11th March 2020, the WHO stated the burst of a new worldwide disease Who (2020) caused by the unique virus that has spanned swiftly throughout the world. SARS-CoV-2 leads to an acute lung infection and causes COVID-19 disease.

The first confirmed COVID-19 case reported by the Ethiopian Public Health Institute (patient 1) was on March 04, 2020 on a 48-year-old male Japanese citizen who came to Ethiopia from Burkina Faso Ethiopia et al. (2020). Since March, it has spread across Ethiopia and several other cities. As of June 22, 2020, the Ethiopian Public Health Institute reported a total of 4,663 COVID-19 cases, with 38 new intensive care unit (ICU) hospital admissions and 75 COVID-19-related deaths countrywide.

Post-mortem examination affects peculiar health hazards, related to microorganisms, parasites, and various biological agents Fitzek (2020). The Committee on Biological Agents (ABAS) stated specific guidelines aimed at management of the SARS-CoV-2 corpse. Though, in the instance of post-mortem with proper protective procedures, an intensified chance of spread is not to likely for the workers Edler (2020). Forensic pathology residents and one supportive staff in the department confirmed COVID-19 positive though asymptomatic while conducting surveillance for SARS-CoV-2 for hospital staffs at the instance of authoring this manuscript. In addition, we are observing increasing of confirmed COVID-19

post-mortem cases in those cases submitted for sudden unexplained death and traumatic related deaths submitted to medicolegal autopsy.

2 Case Report

We describe the instance of a 55-year-old male who passed away in the public during the COVID-19 contagion. The purpose of this report is to describe the first confirmed SARS-CoV-2 related fatality in Ethiopia on post-mortem examination and the context confronted in limited forensic pathology centre.

3 Medical History And Post-mortem Findings

The body was 55-year-old male. Clinical history from family revealed no contact history with COVID19 patient, no symptoms of fever, dyspnea, or cough. He had no travel history to high burden countries. He had no recent travel history to Addis Ababa, capital city of Ethiopia, which is epicenter of COVID-19 in our country with high burden cases. There was no ante mortem reported cases of COVID-19 confirmed patients in the residence of the deceased. He had no history of known chronic disease. He had no recent visit to health facility.

The National Covid-19 emergency operating team already decided to do postmortem surveillance and collect sample of nasopharyngeal or oropharyngeal swab for SARS-CoV-2 for all dead body submitted to the mortuary for postmortem examination.

For this case and other cases on that day postmortem nasopharyngeal swabs collected and sent for RT-PCR COVID19 test. Unfortunately, the test result received and confirmed RT PCR positive on 30th of May 2020 after the body transported back the residence of the deceased.

The exterior autopsy inspection showed an emaciated middle-age adult male with rigor mortis on lower extremity and non-blanching livor mortis on the back of the body. Fresh trauma was absent. By interior investigation pleural adhesions were present on anterior and posterior aspect of left lung. The left lung necrotized, extensively collapsed, and weighs 280 grams. Right lung was dark red in color, consolidated, weighs 450 grams, patchy petechial hemorrhages on the pleural surface. All other internal viscera were pale. No viscera preserved for microbiology, virology, histopathology, or immunohistochemistry tests as these facilities are limited in our set up. Regarding to virologic findings, a conclusive throat swab was remarkable.

4 Discussion

There are many case reports currently published signifying occasionally death might happen unpredictably confirmed through autopsied cases of COVID-19 Jenkins et al. (1000) Tombolini and Scendoni (2020). In this case it indicates possibility of dying in community in developing country with poor health infrastructure, difficult for contact tracing, isolation and under reporting of COVID-19 positive cases. With the contemporary sweep of COVID-19,

personnel involved in handling dead body must assume human remains persist plausibly infectious 982. SARS-CoV-2 endures at the surface for certain periods (8) and survives on the corpse for days, and can be detected from nasopharyngeal or oropharyngeal swab for days or also in putrefied cadaver after death Edler (2020). And for this reason, all dead bodies should be managed carefully throughout transportation, storage, autopsy, and burial/cremation

In case of corpse with presumed or validated COVID-19 is elected for post-mortem, medico-legal units should safeguard the well-being of workers before executing the autopsy “misc208.Pdf and Accessed (2020). As postmortem examination can create aerosols, respiratory safeguard comprising a nonreusable N-95 respirator is indicated Guidance (2019) 982 (2020). Perform autopsies in negative pressure rooms Organization (2009) Lacy (2020). However, in this case full post-mortem examination was performed in mortuary without negative pressure.

In the case presented, viral pneumonia showed with the gross left lung findings extensively necrotized and pale. It is in contrast to distinctive feature of COVID-19 pneumonia that the lungs are extremely bulky Fitzek (2020) Edler (2020).

It is known that risk of COVID-19 related death is increased in individuals with significant chronic non-infectious disease or chronic metabolic disorders Edler (2020) Fox et al. (2020). In contrast in this case the observed comorbidity was malnutrition. This implies the risk of dying from COVID-19 might be related to malnutrition and chronic infectious diseases in developing countries in contrast to western countries.

The absence of post-mortem microbiological, histopathology and immunohistochemistry testing are limitations in this case.

5 Conclusion

We are presenting initial COVID-19 case confirmed on post-mortem investigation in Ethiopia. Currently in Ethiopia COVID-19 cases are mostly asymptomatic and patients are not able to have access to nasopharyngeal swabs for SARS-CoV-2. For this aim, authors are concerned that the figure of loss of life is anticipated to persist in the forthcoming months provided that certain patients could not obtain proper attention and aid. The lesson learned from this case, encourage the establishment of swab on RT PCR to all suspect patients, including testing, tracking, triage, isolation, and treatment, as well to supply adequate PPE protection of forensic personnel working in the autopsy room as untested or asymptomatic dead patients should be assumed as potentially SARS-CoV-2 infected.

Declarations

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Citations

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