G106 A Fatal Case of Human Herpes Virus 6 Fulminant Pneumonia in a Young Immunocompetent Woman

Lucia Tattoli, PhD, Eloisa Maselli, MD, and Biagio Solarino, PhD, Univ of Bari, Sezione di Medicina Legale, Piazza Giulio Cesare, 11, Bari, ITALY; Paola Frati, PhD, Univ of Rome, Dept of Anat Histol Forensic and Orthop Sciences, Viale Regina Elena 336, Roma, ITALY; and Alessandro Dell'Erba, PhD, Teaching Hospital of Bari, Risk Management Unit, Piazza Giulio Cesare 11, Bari, ITALY*

After attending this presentation, attendees will understand the importance of a complete forensic approach, through autopsy, histological, and virological examinations, in an uncommon case of lethal fulminant hemorrhagic pneumonia in a young immunocompetent woman and in determining Human Herpes Virus 6 (HHV 6) infection as the cause of death.

This presentation will impact the forensic science community by showing that acute HHV6 infections can occur in adults suffering a variety of syndromes, from non-specific to severe in both immunosuppressed and healthy patients.

Primary HHV6 infection causes *exanthema subitum*, a common febrile disease of infancy, whose clinical course is generally benign and self-limited. HHV6 is usually acquired at a young age and remains latent in the salivary glands and central nervous system of healthy subjects. Reactivation of latent HHV6 is common and can cause, in immunocompromised hosts, severe complications including encephalitis/encephalopathy, pneumonitis, hepatitis, thrombocytopenia, hemophagocytic syndrome, and myocarditis.

Pneumonia associated with HHV6 infection is interstitial, and it has been repeatedly reported in the literature in patients after allogenic stem cell transplant or with HIV infection. The clinical findings vary from mild to severe, requiring mechanical respiratory support attributable to Acute Respiratory Distress Syndrome (ARDS).

The case of a 27-year-old woman who was admitted to the emergency room complaining of cough, dyspnea, hemoptysis, and fever was reported. The clinical history of the patient was silent for any disease. A chest CT scan showed multiple foci of pneumonia of the right lung, with epato-splenomegaly, and mediastinal lymphadenomegaly. The blood exams showed severe decreases of leukocytes, platelets, and lymphocytes, and pseudo Pelger-Huet anomaly of neutrophils at peripheral blood smear. As the patient worsened, she was intubated with blood leaking from the airways. Despite medical resuscitation, the woman died eight hours after the admission. Due to the lack of previous medical history, a medicolegal autopsy was performed.

The external examination of the body was completely negative. The autopsy revealed hemorrhagic pleural effusion (1200cc total), pulmonary edema with hemorrhage, and epato-splenomegaly.

The histological examination revealed bilateral pneumonia with interstitial lymphocytic infiltrates and diffuse alveolar damage (ARDS-hyaline membranes). No alcohol or drugs of abuse were found in the blood and urine collected at autopsy.

Microbiological analysis was negative. Virological examinations of the pleural effusion and blood showed HHV6 pneumonia with low levels of Human Herpes Virus 7 (HHV7) and Epstein-Barr Virus (EBV), demonstrative for a co-infection.

The cause of death was HHV6—haemorrhagic pneumonia (with co-infection of HHV7 and EBV) that evolved into ARDS.

Some studies have identified co-infections with HHV6 and other viruses in a surprising number of HHV6-associated pneumonias. In fact, HHV6 and HHV7 are ubiquitous in the adult population and can reactivate periodically and cause several manifestations reported to occur at high frequency when the functions of cell immunity are impaired.

In this case, the young patient was not immunodepressed, without other pathologies, and developed a fatal pulmonary failure attributable to HHV6 pneumonia, evolving into ARDS. According to the literature, ARDS caused by HHV6 is extremely rare, and is described mainly in immunodeficient persons.

The evidence of a detectable viraemia has a key role in the diagnosis of the infection, which has to be identified and treated with specific antiviral drugs, as soon as possible. Nevertheless, virological exams, based on the quantification of viral load in bodily fluids, are available but need to be improved and standardized. Although no systematic evaluation of treatment regimens is available, coincidental administration of antiviral drugs can not result in clinical improvement.

Autopsy, Human Herpes Virus 6, Pneumonia

 ** Presenting Author*