G128 A Sudden Death in a Fatal Case of Pneumococcal Overwhelming Postsplenectomy Infection Syndrome

Cristoforo Pomara, MD, PhD, Benedetta Di Battista, MD, Stefania C. Bello, MD, Margherita Neri, MD, PhD, and Irene Riezzo, MD, PhD, Univ of Foggia, Viale Degli Aviatori 1, Ospedale D'Avanzo, Foggia, ITALY*

The goal of this presentation is to show how Overwhelming Postsplenectomy Infection (OPSI) syndrome is a rare condition, associated with high mortality. Gross examination, histological and immunohistochemical staining, and microbiological investigation are complementary to correctly gain a diagnosis.

This presentation will impact the forensic science community by showing the rarity of a pathological condition related to a post-traumatic splenectomy in a young man as well as the difficulty of gaining a complete study such as the one proposed. Autopsy, second-level histopathological and immunohistochemical studies, and microbiological tests helped forensic pathologists diagnose the pathological condition and exactly investigate cause of death.

OPSI is a rare condition and is a low-incidence entity with a high mortality rate despite aggressive therapy. Although initial symptoms may be mild and nonspecific, it can progress rapidly to Waterhouse-Friderichsen syndrome with full-blown septic shock and Disseminated Intravascular Coagulation (DIC). The incidence of serious infections after splenectomy remains low, with the incidence of fulminant OPSI ranging from 0.1% to 8.5%. Splenectomized patients are a significant infection risk, because the spleen has the largest accumulation of lymphoid tissue in the body. The initial presentation may be mild and non-specific but may rapidly progress to septic shock with DIC and Waterhouse-Friderichsen Syndrome (WFS). The mortality rate for OPSI has been estimated as approximately 50% to 70%, despite aggressive therapy. Of those patients who die, greater than 50% die within the first 48 hours of hospital admission. The mechanism that connects splenectomy to WFS is unknown but OPSI possible causes are loss of splenic phagocitary function, the decreasing IgM serum levels, a possible suppression of lymphocytes sensibility, and changes of opsonine's system. In this system, shocks irreversibility caused by endotoxin-like phenomenon of Sanerelli–Shwartzman. A case of rapidly progressive fatal overwhelming pneumococcal septicaemia and DIC with bilateral adrenal hemorrhages after splenectomy is reported.

Presented is a fatal case of a 32-year-old man admitted to the emergency department with a history of a few hours low-grade fever and non-specific symptoms (abdominal pain, diarrhea, nausea, and vomiting). On physical examination, not neurological, the body temperature was 39°C (orally recorded), blood pressure was 60/40mm Hg. A splenectomy after car crash was recommended. Tachypnea with oxygen saturation of 94% on room air was also recorded. He complained of mild abdominal tenderness and positive bowel sounds. Laboratory tests revealed leukopenia (WBC 2300), thrombocytopenia (PLT 66.000), metabolic acidosis, and disseminated intravascular coagulation with multiple organ failure. Chest X-ray showed emphasizing design bundling of bronco vascular pattern in the basal right pulmonary. Diagnosis of "abdominal colic" was performed. Death suddenly occurred less than five to six hours after admission. A complete postmortem examination was performed the day after death. Autopsy findings included widespread visceral petechiae, encephalic vascular congestion and cerebral oedema, pulmonary oedema with haematic fluid on the main bronchi. Bilateral acute hemorrhagic necrosis of the adrenal glands as like WFS was also detected. Alveolar necrosis, interstitial chronic phlogosis, hemosiderophages, and perivascular edema were detected at histopathological and immunohistochemical analysis as well as parenchymal complete apoplexy of adrenal glands. Postmortem microbiological investigation on blood, lungs, and vitreous humor were positive for Streptococcus pneumonia. Pneumococcal post-splenectomy infection syndrome rapidly overwhelming in septic shock and multiple organ failure in a young man affected with WFS was established as the cause of death.

OPSI, Waterhouse-Friderich, Splenectomy

 ** Presenting Author*