

H12 Pneumococcal Meningitis Associated With Phlegmonous Gastritis and HIV/AIDS

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After attending this presentation, attendees will understand a rare complication of HIV/AIDS and will be encouraged to pursue further studies in autopsy cases of individuals with HIV/AIDS.

This presentation will impact the forensic science community by illustrating a rare but important manifestation of HIV/AIDS, which led to the development of phlegmonous gastritis and pneumococcal meningitis in an individual with a history of substance abuse. The goal is to inform forensic pathologists of this bizarre association and to highlight the importance of performing complete autopsies on individuals in which drug abuse is suspected.

An elderly man with a past medical history significant for probable essential hypertension was found dead in an abandoned building. The building was known to be inhabited by squatters for housing and drug abuse. Drug paraphernalia was found at the scene.

An autopsy was performed at the medical examiner's office. The decedent was in an early state of putrefactive decomposition. The gastrointestinal surfaces were coated by a thick, purulent exudate. The proximal pyloric region of the stomach's external surface had a one-half inch area of perforation. Associated with the perforation was a thick, yellow, purulent exudate and omental adhesions. The distal half of the body and the proximal pyloric region had a firm, yellow, homogenous, infiltrative, seven centimeter, circumferential mass. Histological sections of the distal half of the stomach revealed infiltration by neutrophils within the gastric wall between the intact mucosa and serosa. There was vasculitis and vascular thromboses. Within the submucosa and vessel walls were many Gram-positive cocci in chains and pairs.

Gross examination of the brain revealed a thick, yellow, purulent subarachnoid exudate that tram-tracked along the cerebral vasculature. The 1,570-gram brain had cerebral edema. The cerebral hemispheres had an indistinct gray-white matter border. Histological sections confirmed the diagnosis of acute meningitis.

Cultures of the peritoneal and subarachnoid exudates both grew out *Streptococcus pneumoniae*. Blood samples were reactive for HIV antibody. Toxicology was notable for cocaine in the urine and benzoylecgonine without parent cocaine in the blood. The cause of death was certified as peritonitis, meningitis, and sepsis associated with phlegmonous gastritis due to AIDS.

Phlegmonous gastritis is a rare, rapidly progressive, and potentially fatal bacterial infection of the gastric wall and was first described as erysipelatous tumor of the stomach by Greek physician Claudius Galen (AD 138-201). Two forms have been described: localized and diffuse. Though the pathogenesis is unclear, this type of gastric abscess has been linked to gastric surgery, pre-existing mucosal injury, hematogenous spread from other infected areas, ingestion of caustic substances, and gastric carcinoma. Phlegmonous gastritis has also been associated with systemic disease and immunosuppressive conditions including diabetes mellitus, chronic ethanolism, and HIV.

In this case, the diagnosis of phlegmonous gastritis was made by autopsy and was associated with pneumococcal meningitis. The gastric wall abscess was localized to the distal stomach. Such abscesses can become diffuse through local spread, gastric wall perforation, or via exudate expressed from the serosal surface of the stomach. In previous

reports, phlegmonous gastritis has been described as resulting from hematogenous spread from distant sites and has not been described to spread from the stomach to distant sites; however, the development of phlegmonous gastritis can occur slowly over weeks, so hematogenous spread from the gastric abscess to the brain is a possibility. Diffuse involvement of the gastric microvasculature and the presence of organisms within the vessel walls may contribute to such hematogenous spread.

This case highlights the importance of performing complete autopsies, especially in the setting of suspected acute drug toxicities.

In the practice of forensic pathology, HIV-associated phlegmonous gastritis should be considered and recognized as having potential association with pneumococcal meningitis. While it is strongly suspected that the stomach is the source of the infection, more research studies are needed to determine whether the stomach or meninges are the initial source of the infection. The rarity of this finding may be a peculiarity of the systemic effects of HIV, may be related to ongoing drug abuse, or may represent a reflection of current attitudes toward autopsy in this patient population.

HIV/AIDS, Phlegmonous Gastritis, Meningitis