## H64 Acute Progression of Traumatic Diaphragmatic Laceration With Gastric Herniation in the Context of Underlying Chronic Disease

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**Learning Overview:** The goal of this presentation is to explain the value of maintaining high clinical suspicion for the pathological progression of a trans-diaphragmatic gastric hernia following trauma, especially in the context of significant comorbidities. This presentation will also highlight the importance of forensic autopsy performance for quality control and quality assurance purposes, with the ultimate goal of preventing future deaths.

**Impact on the Forensic Science Community:** This presentation will impact the forensic science community by providing a retrospective analysis of clinical decisions that provide insight and useful instruction for future medical and surgical care. This report seeks to provide context for one such case in which a suspected trans-diaphragmatic gastric herniation, discovered following acute trauma involving a patient with underlying chronic disease, was left untreated, leading to the patient's death within days of a Motor Vehicle Accident (MVA) in which the decedent had suffered "non-life-threatening" injuries.

An 84-year-old man with hypertension, atherosclerotic cardiovascular disease, diabetes, and emphysema died days after being involved in a head-on MVA traveling at 55 miles per hour. The man was the restrained driver of one of the vehicles. He was found awake and alert at the scene. He was assessed by a trauma surgeon to have sustained only non-life-threatening injuries from the accident, including mild trauma of the frontal surface of the scalp with no evidence of intracranial hemorrhage. Because of his age and comorbidities, he was kept overnight in the hospital for observation. Early in the morning following the MVA, a trauma surgeon described the presence of a radiologically identified trans-diaphragmic herniation of the patient's stomach into the left hemithorax, consistent with the radiology report upon admittance the previous night. The surgeon was uncertain as to the etiology of this herniation, suggesting that it could be either chronic, such as a hiatal hernia, or the result of acute trauma. Both the surgeon and radiologist favored a chronic process. Ultimately, the patient's diaphragmatic hernia was not attended to by the surgeon. Instead, a decision was made to observe the patient. After approximately 36 hours of hospitalization, the patient suddenly became bradycardic and died, despite efforts at resuscitation. A medicolegal autopsy was performed. This revealed a gaping, 10cm x 5cm acute, traumatic diaphragmatic laceration with significant stomach herniation, a left hemothorax with approximately 300mL of liquid blood, and marked compression of the left lung. Based on these findings, it was determined that the decedent had died from hypertensive and atherosclerotic cardiovascular disease with a contributing factor of complications of trauma, specifically a diaphragmatic laceration with gastric herniation leading to lung compression and eventual compromise.

**Forensic Pathology, Motor Vehicle Accident, Gastric Herniation**