E40 Suture Embolism to the Left Superior Lobar Pulmonary Artery: A Case Report and Review of the Literature

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After attending this presentation, attendees will be familiar with the various types of exogenous emboli that may be encountered at autopsy. Furthermore, attendees will gain an understanding of the clinical situations that are associated with the presence of exogenous emboli.

This presentation will impact the forensic science community by increasing awareness of a rare and often bewildering autopsy finding. Moreover, knowledge of the mechanisms of embolization will enhance appreciation for and encourage familiarity with modern surgical techniques, which inescapably impact the forensic science community.

While sources of endogenous emboli, such as thrombus, fat, and tumor are well known, exogenous substances are less commonly encountered and, therefore, less frequently discussed. Modern surgical techniques, both invasive and minimally invasive, allow for the introduction of foreign material into the bloodstream. For example, iatrogenic emboli, such as Inferior Vena Cava (IVC) filters, guidewires, stents, and embolization coils, have been encountered in the surgical literature.[1] These types of emboli may or may not result in patient symptomatology. Other rarer causes of exogenous emboli include percutaneous closure devices, biological glue, and surgical suture.[2-6] When involving critical vessels, emboli cause symptoms and may be, as in this case, fatal.

This case report recounts the autopsy findings of a 58-year-old man with a history of prolonged surgical immobilization provoking deep vein thrombosis and bilateral pulmonary emboli. He had undergone an exploratory laparotomy following a fundoplication complicated by splenic injury and challenging vascular hemostasis. Autopsy revealed a large cavity within the splenic bed filled with turbid fluid consisting of clotted blood and surgical gel-foam. The cavity was lined by omental adipose tissue studded with surgical suture demonstrating fat necrosis. Within the pulmonary vasculature were extensive pulmonary arterial thromboemboli of varying chronicity as well as surgical suture emboli within the left superior lobar pulmonary artery.

Of the handful of existing reports on exogenous emboli, even fewer of which are postmortem evaluations, this is the first case of suture embolus to the pulmonary arterial system. Though the cause of death was not directly influenced by the suture embolus but rather the extensive pulmonary thromboemboli, the presence of the suture embolus was a surprising and an initially perplexing finding; however, an understanding of the clinical, namely surgical, situations around which previously reported exogenous substances were introduced into the vasculature elucidated the likely mechanism of entry.

In conclusion, embolism of exogenous material is a rare but potential finding at autopsy of which pathologists should be aware. A familiarity with modern surgical techniques enhances understanding of potential mechanisms of embolus formation.

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