



## Pathology/Biology Section - 2015

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### H5 Death Due to a Congenital Vascular Anomaly of Pulmonary Hamartoma Type: Malpractice or Tragic Fatality?

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After attending this presentation, attendees will understand more about the relevant role of forensic investigation in medical liability evaluations.

This presentation will impact the forensic science community by serving as a case study in which it was possible to attribute a patient's death during a routine medical procedure to a rare disease rather than to the medical procedure as had been previously thought.

The goal of this study is to comprehensively characterize relevant forensic features, which may become important in resolving forensic cases.

In the legal medicine field, cases that seem straightforward can often hide rarities that can alter the results of the entire investigation. This can sometimes occur during malpractice investigations. In such circumstances, apart from the normal individual variables, the fatal outcome of a medical procedure may be due to a rare disease that is difficult to diagnose and whose evolution may be difficult to predict.

A case is reported of a 49-year-old man who died in a hospital due to a pulmonary hemorrhage during an instrumental examination (bronchoscopy) performed to define a previously identified mass in the right lung. The magistrate required an autopsy to evaluate whether the doctor who had performed the bronchoscopy was liable for malpractice.

Examination of the cadaver revealed a marked anatomical alteration of the right lung, which was much smaller in size and volume than the left lung. The entire parenchyma showed a denser consistency. Opening of the trachea and bronchi revealed the presence of many blood clots bilaterally. Moreover, in the proximal portion of the right bronchus, immediately before the bifurcation, a dense, congested capillary network was evident on the endoluminal surface. In addition, on the external surface between the superior and the medial right bronchi, a mass could be seen, not protruding into the lumen but with a rich vascularization, that was partially fused to the bronchial wall. Accurate macroscopic examination of the right lung (after fixation in formalin) demonstrated a thick tangle of vessels in the cricoid cartilage region, extending distally deep down to the level of the pericardial sac.

Histological examination demonstrated that the mass was not a tumor but a congenital vascular anomaly of the hamartoma type. This is a rare finding that, owing to its intrinsic morphologic-structural characteristics (tortuous vessels content, thin aneurysmatic walls), had lacerated simply in response to the rise in pressure induced by insertion of the bronchoscope in the bronchial tree, causing copious bleeding that led to the patient's death from asphyxia due to internal volume overload.

Before the cause of death had been determined, public opinion had unanimously attributed the death to medical error. A routine practice like bronchoscopy should not cause death; therefore, the doctor must have made a serious mistake. Fortunately, the autopsy not only demonstrated the cause of death but also revealed a rare congenital lung disease.

There is an increasing tendency to blame the doctor for medical failures; if this is not restrained, it will lead to "defensive" medicine, ultimately harming patients, overall.

This presentation will impact the forensic community by underlining the importance of forensic investigations and their correlations with anatomic-pathological findings.

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#### **Bronchoscopy, Malpractice, Defensive Medicine**