



## Pathology Biology Section – 2011

### G57 Anaphylactic Shock and Postmortem Exam – A Systematic Approach

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After attending this presentation, attendees will have an insight about the efforts being made by the Portuguese National Institute of Legal Medicine in order to harmonize the methodology of forensic autopsies, since not all the medical forensic experts have the specialty of legal medicine.

This presentation will impact the forensic science community by informing attendees of the attempt to establish specific rules concerning the approach of fatal cases of suspect anaphylactic reactions.

The anaphylactic shock is classified as a type I of hypersensitivity reaction that occurs due to the release of biologically active agents, among them, histamine. It is due to exposure to allergens of different types, like drugs, food, animal sting, animal fur. If not promptly reversed, the outcome can be fatal.

The relevance of available circumstantial information, namely context and symptoms prior to death, previous medical history and possible life support procedures applied will be discussed.

The need for a thorough external examination of the corpse is also addressed, in order to search, for instance, for possible sting marks or hives-like lesions that may help to support the diagnostic.

Overall, postmortem findings, either in the external and internal examination, are usually nonexistent or nonspecific, the forensic expert should collect all body samples that may be needed later on to reach a more accurate diagnosis.

Therefore, besides the routine histology (heart, lungs, liver and kidneys), the collection of samples from other organs with known increased mastocyte cells population is recommended. Toxicological exams should contemplate drugs, abuse drugs and/or pesticides, according to the specificity of the case.

Also highlighted is the relevance of collecting peripheral blood for IgE and tryptase concentration levels and that this task should be undertaken as soon as possible after the judiciary's authorization for the autopsy.

Because of the lack of relevant findings, death by anaphylactic shock is considered a diagnosis of exclusion, that is achieved through the evaluation of the available circumstantial information, the findings (or their nonexistence) in the external and internal examination and results of ancillary investigation, namely, histology, in some cases complemented by immunohistochemical techniques (anti-tryptase and anti-CD117), toxicology and serology (IgE and tryptase).

Based on the most recent scientific knowledge, a comprehensive protocol was designed with the purpose of being applied to this situation and serve as a guideline to forensic autopsies.

**Forensic Autopsy, Anaphylaxis, Protocol**