Beyond the cold: exploring spleen contraction as a novel supportive autopsy sign of fatal hypothermia

[Authors]

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[Structured Abstract: Text – up to 2500 characters including spaces]

Background: Postmortem diagnosis of fatal hypothermia remains challenging due to the limited number of reliable diagnostic indicators identifiable at autopsy.

Aim: The aim of this presentation is to introduce reactive splenic contraction as a novel corroborative autopsy evidence in cases of fatal hypothermia and to evaluate its diagnostic significance.

Material and Methods: The presentation is based on a prospective autopsy study of 65 fatalities due to hypothermia and a control group of 150 cases. Gross and histological examination of the spleen was performed, focusing on volume and weight reduction, capsular wrinkling, and red pulp anemization. Selected cases were additionally assessed using postmortem computed tomography.

Results: The reactive splenic triad was identified in 55 of 65 hypothermia cases (84.6%) and in none of the control cases. Splenic contraction showed significant associations with established autopsy signs of hypothermia, including cold erythema, Wischnewsky spots, and the inner knee sign.

Conclusion: Reactive splenic contraction represents a reliable corroborative autopsy marker of fatal hypothermia. Its timely recognition can streamline diagnostic reasoning and guide targeted dissection and ancillary examinations. Although supportive rather than pathognomonic, this morphological finding substantially enhances diagnostic confidence in cases of death due to cold exposure.