Acute Lethal Pancreatitis Forensic Diagnosis

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ABSTRACT

Sudden pancreatic death remains a rare and unusual condition. We report a case of a 38-year-old man without a pathological history who suddenly died at the emergency room. A forensic autopsy was practiced and the obtained report revealed congestion of the viscera. Histopathological examination showed an extensive uninfected coagulation necrosis in the pancreas with cytosteocrosis and pulmonary hemorrhagic edema and siderophages present. We discuss the potential mechanism of death in this manuscript.

KEY WORDS: Pancreatic; Siderophages; Cardio-respiratory.

INTRODUCTION

Severe acute pancreatitis can be complicated by multi-visceral failure which can be fatal in more than 50% of cases.¹ However, sudden pancreatic death remains a rare and unusual condition. There are few studies that have dealt with this topic.²³ We report the case of an acute necrotic pancreatitis of autopsy discovery in a young adult and we also discuss the potential mechanism of death.

REPORTED CASE

The victim S.L. is a 38-year-old man with no pathological history and smoking. Brought by his neighbor to the emergencies for chest pain followed by generalized tonic-clonic convulsions, occurring at night 30 mins before the consultation. Upon arrival at the emergency room, the patient was in cardio-respiratory arrest and did not recover after 30 minutes of resuscitation.

Faced with the sudden nature of the death, a forensic autopsy was requested by the authorities and practiced in the Forensic Medicine Department.

The external examination of the corpse did not reveal any particular features apart from a non-specific asphyxic syndrome. The autopsy revealed congestion of the viscera, an alithiasic gall bladder and a congestive and friable pancreas. Necropsic specimens of interest of the brain, heart, liver, lung, spleen and pancreas were performed for histopathological examination and the results obtained showed an extensive uninfected coagulation necrosis with cytosteocerosis in the pancreas (Figure 1A and 1B), a centrolobular macrovacuolar hepatic steatosis, edema and cerebral congestion, and pulmonary haemorrhagic edema with siderophages present. Renal, splenic and cardiac tissue showed vascular congestion with no significant pathological features.

A toxicological test for drugs, alcohol or toxic substances was negative. After analyzing the commemorative, external examination and autopsy data, death was attributed to acute pancreatitis.
DISCUSSION

By this observation, we report a case of sudden death in a young adult whose pancreatic etiology was revealed only by the practice of a forensic autopsy.

Sudden death is defined as a natural, unexpected death, occurring in a subject previously considered healthy, within a short period of time. This interval does not exceed 24 hours from the beginning of the symptomatology according to the World Health Organization (WHO).

The incidence of sudden pancreatic death is low. It is 0.2% according to Di Maio⁵ and 2.5% according to Shetty et al.⁶ Toffler and Spiro had reported 9 cases of necrotic and haemorrhagic pancreatitis of autopsy.⁷ In a 5-year study at the Institute of Forensic Medicine in Hamburg, Germany, the incidence of sudden death from acute pancreatitis was 0.44%.⁸

Acute pancreatitis typically manifests as abdominal pain, it may, however, be completely misleading. In this reported case, the symptomatology was made of thoracic pain rapidly followed by generalized tonic-clonic convulsions. These data are similar to those reported in the literature. Indeed, Tsokos⁸ had reported 27 cases of sudden deaths of pancreatic origin, 6 of which had died in the ER in an interval not exceeding 24 hours. The reasons for admission were epigastric pain of undetermined origin, incoercible vomiting, hypothermia, convulsions and a coma of undetermined origin. In Heatley’s study,⁹ 6 victims of sudden pancreatic death suddenly presented severe respiratory distress or hemodynamic shock leading to death.

In the early stage, acute pancreatitis is characterized by a systemic inflammatory response syndrome maintained by the release of various inflammatory mediators, which can lead to vital organs damage.⁴ During this phase deaths are usually associated to a pulmonary edema (acute respiratory distress syndrome) and acute renal failure.¹⁰ Pastor et al¹¹ had reported that 50% of early deaths due to acute pancreatitis are associated with severe respiratory failure. In this case, the histological analysis of the lungs revealed a haemorrhagic pulmonary edema with the presence of siderophages.

CONCLUSION

Acute pancreatitis is a serious disease and can be rapidly fatal because of its many complications. Data from forensic autopsies can contribute to a better understanding of this pathology and to the development of better management.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

REFERENCES

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