

Use of Post-mortem CT as a Supplement to Autopsy in Trauma Deaths: What Does it Add?

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Post-mortem CT (PMCT) is used in few UK centres to supplement autopsy in the investigation of deaths from injuries. Here we review trauma deaths analysed by a Digital Autopsy Service in order to determine the added value of PMCT.

In 22 trauma deaths, PMCT was followed by full autopsy. The severity of the injuries detected by CT and dissection were separately quantified using the Abbreviated Injury Severity score (AIS, a value of severity for each injury) and the Injury Severity Score (ISS, a value of the overall severity of injury in terms of survivability), in order to determine how effective these two methods were in detecting clinically relevant injuries.

Causes of death were: multiple injuries due to road traffic collision (15), severe head injury (5) and cervical spine injury (2). PMCT exclusively detected 28 injuries: 17 vertebral fractures (5 Spinous processes, 7 transverse processes, and 5 vertebral body), 2 tonsillar herniations, 1 base of skull fracture & 7 pelvic fractures. Open autopsy exclusively detected 15 injuries: 2 mesenteric tears, 2 aortic tears, 5 cortical brain contusions, 4 pulmonary contusions, 1 liver contusion & 1 caecal perforation. The average ISS score was 43.5 based on CT alone, 44 based on dissection alone and 45.8 based on both investigations. The AIS was greater based on dissection alone in 6 cases vs 3 based on CT alone.

PMCT is excellent for detecting fractures that are missed by dissection, particularly vertebral injuries, but poor for detecting many soft-tissue injuries. PMCT is therefore a useful supplement to dissection, providing information of clinical relevance that cannot be gained from open autopsy alone.