



Pathology & Biology Section – 2008

G77 Postmortem Angiography in Support of Radiologic Assisted Autopsy

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Upon completion of this presentation, participants will be able to recognize the usefulness of digital radiography and computed tomography in the assessment of vascular injury. Postmortem studies may be performed with antegrade or retrograde injection of contrast medium into the vessels under investigation, in conjunction with the standard forensic autopsy.

This presentation will impact the forensic science community by demonstrating the value of Radiologic Assisted Autopsy.

Radiologic Assisted Autopsy (RAA) performed with digital radiographs (DR) and multidetector computed tomography (MDCT) is limited in its ability to assess vascular integrity. Postmortem angiography has been proposed as a technique to overcome this limitation, a variety of contrast agents and techniques are being evaluated. This report outlines a method for performing postmortem peripheral vascular assessment in conjunction with the standard forensic autopsy.

During autopsy the vessel of interest was isolated at its source or a convenient location distal to the area of interest. Lower extremity arteries were cannulated with embalming trocars where they exited the open abdominal cavity. Vertebral arteries were isolated in the posterior fossa after brain removal and cannulated with a 5F angiocatheter. Hand injection of contrast was performed during MDCT imaging of the area of interest. Satisfactory visualization of peripheral arteries was achieved with a mixture of embalming fluid and radiographic contrast [Omnipaque 320]; undiluted contrast was injected retrograde into the vertebral arteries. Arteries can be injected postmortem in either antegrade or retrograde direction.

Successful demonstration of a lacerated femoral artery (2 cases), lacerated iliac artery and vein (1 case), intact vertebral artery (2 cases) and a lacerated vertebral artery (1 case) were accomplished. When performed in conjunction with RAA postmortem angiography has the potential to: (1) allow the investigator to avoid unwanted dissections, and (2) optimization of autopsy resources.

Angiography, Radiologic Assisted Autopsy, MDCT Virtual Autopsy