CT Coronary Artery Angiography Protocol

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Research:

| Less Invasive Autopsy: A study to evaluate and compare the use of Computerized Axial Tomography and Magnetic Resonance Imaging with conventional autopsy |
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The following protocol will apply to pre-autopsy computed tomography (CT) coronary artery angiography.

1. Under the legal authority of H.M. Coroner or through the hospital Human Tissue Act permission autopsy route, the deceased person is identified as requiring an autopsy examination.
2. Consent is acquired by a medical member of the East Midlands Forensic Pathology Unit (EMFPU) for the cadaver to undergo pre-autopsy CT scanning with cardiac angiography.
3. Prior to scanning, in the mortuary, a medical member of the EMFPU will make an approximate 2cm incision to the lower aspect of the right side of the neck. This incision is used to locate the right internal carotid artery under direct vision. This approach uses a traditional embalmers technique to gain access to this vessel for head and neck embalming and allows for the incision to be hidden later as the autopsy will use an extended incision through this site to examine the neck contents.
4. A catheter sheath is inserted into the vessel and advanced to just above the aortic valve.
5. The cadaver is taken to the imaging department and undergoes whole body CT examination. The site of the tip of the catheter sheath is checked at this stage and can be adjusted if necessary.
6. A balloon catheter is advanced down the sheath. The balloon is inflated above the level of the aortic valve within the ascending aorta.
7. Contrast medium is introduced down the catheter with a syringe. Assuming competency of the aortic valve, the medium will enter the right and left coronary arteries and fill the coronary vessels of the heart. The use of complex machinery such as heart lung machines is thus avoided.
8. The chest cavity is re-examined with CT using a cardiac CT protocol.
9. The catheter is removed and the body returned to the mortuary to undergo autopsy examination. In the future, should the technique prove diagnostic then the incision would be closed with sutures. This would thus provide a minimally invasive approach to cardiac imaging without autopsy.
10. The CT data is compared to the autopsy examination. The cardiac data is analysed using a cardiometric CT program.