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Combined CT venography and CT pulmonary angiography for the detection of deep venous thrombosis in injured patients

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CT Venography (CTV) performed at the time of CT pulmonary angiography (CTPA) images the central, pelvic, and extremity venous circulation with minimal additional time, radiation, and no added contrast. CTV has been added to CTPA routinely at our Level I trauma center since 2000, and we sought to determine if this addition had increased the diagnostic yield of CTPA in trauma patients. The attending radiologist's interpretation of all CTPA-CTV studies performed over a 5-year period ending in August 2006 were retrospectively reviewed. CTPAs and CTVs were categorized as "positive", "negative", or "indeterminate" for pulmonary embolus (PE) and deep venous thrombosis (DVT). During the study period, 3798 patients underwent both a CTPA and CTV; 309 (8%) of these were trauma patients. Forty-four (14%) had a PE diagnosed on CTPA. Seventeen (6%) had a DVT diagnosed on CTV. In eight (3%), the CTV added clinically relevant data, diagnosing a DVT in a patient without PE. As the consequences of a missed pelvic DVT are high and the added time burden, radiation, and contrast required for a CTV are low, further investigation into optimizing the sensitivity of CTV performed at the time of CTPA is warranted.