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## Preoperative CT sways outcome of repeat cardiac operations

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Findings from a Washington, DC, study suggest that cardiac CT performed before repeat cardiac surgical revascularization may lead to safer and more cost-effective operations. Preoperative CT was also linked to a higher likelihood of improved peri- and postoperative outcomes in these patients.

"This is the first study looking at perioperative outcomes in association with cardiac CT as a way to guide and map substernum structures," said senior investigator Dr. Allen J. Taylor, director of advanced cardiac imaging at the Washington Hospital Center.

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Taylor and colleagues reviewed a series of 364 consecutive patients who had to undergo a second or repeat sternotomy for bypass grafting repair or other revascularization procedure. Of these patients, 136 had been clinically referred for cardiac CT before surgery to map the affected area and provide guidance to surgeons.

The investigators found that patients who underwent scanning before their operations had a statistically significant chance of suffering less bleeding and fewer heart attacks, and of enjoying shorter spells in intensive care. Taylor's groups released their results at the 2009 Society of Cardiovascular Computed Tomography meeting in Orlando, FL.

Patients who underwent cardiac CT showed a lower incidence of perioperative myocardial infarction compared with patients who did not undergo scanning (0% vs. 5.7%,  $p = 0.05$ ). Cardiac CT also correlated with shorter perfusion (90 min vs. 110 min,  $p = 0.001$ ) and cross-clamp times (63 min vs. 75 min,  $p = 0.001$ ), reduced total ICU time (103 hr vs. 148 hr,  $p = 0.03$ ), and a lower total volume of blood loss (1209 cc vs. 1435 cc,  $p = 0.10$ ).

"Giving the surgeons that information helped them perform the operation more safely, efficiently, and successfully," Taylor told *Diagnostic Imaging*.

The American College of Cardiology appropriateness criteria on cardiac CT published in 2006 include preoperative cardiac CT as an appropriate indication for these patients. However, most evidence-based studies backing the indication did not include data on perioperative outcomes.

"This study strengthens the notion that this is a sound indication for cardiac CT," Taylor said. "It helps expand the use of this test for patients undergoing repeat sternotomy."

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