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Abstracttitel:	WHY PATIENTS WITH CORONARY ARTERY STENTS ARE AT INCREASED RISK FOR MORTALITY AFTER CARDIAC SURGERY

BACKGROUND: Many patients present for aortocoronary bypass (ACB) surgery having had previous coronary artery stent placement. The literature suggests that previous stent placement is associated with increased mortality after ACB surgery, possibly because of stent-induced endothelial injury, reduced collateral blood flow, or greater technical difficultly. The objective of this study was to substantiate previous claims that previous stent placement is independently associated with increased mortality after ACB surgery.

METHODS: Following REB approval, perioperative data on 11970 consecutive patients who had ACB surgery at an academic hospital from 1999 to 2006 were retrieved from clinical databases. Multivariable logistic regression was used to determine if, after controlling for perioperative risk factors, previous stent placement was associated with in-hospital mortality. Additional details were compared among a subgroup of identified patients with stents who were matched to similar patients without stents using propensity score matching.

RESULTS: Overall, 327 (2.7%) patients had stent placement at the study hospital before their ACB surgery, of whom 13 (4%) died. The unadjusted mortality rate was higher in stent patients (OR 2.3; 95% CI 1.3 – 4.1; P = 0.003). Stent patients, however, were also sicker (e.g., higher rates of old age, anemia, unstable angina, dialysis, urgent surgery, and redo surgery), and received more blood products. RBC transfusion rates within one day of surgery in stent vs. no-stent patients were: 1-4 units 51% vs. 45%; > 4 units 11% vs. 6%; P < 0.0001. After adjusting for prognostic differences (P < 0.3), previous stent placement was no longer associated with mortality (OR 1.6; 95% CI 0.8 – 3.1; P = 0.14). The only differences among matched patients were that stent patients had greater rates of recent (within 1 week of surgery) clopidogrel use (38% vs. 19%; P < 0.0001) and postoperative low output syndrome (10% vs. 5%; P 0.02).

CONCLUSIONS: The association between previous stent placement and mortality in patients undergoing ACB surgery seems to be attributable to the excess blood loss caused by preoperative clopidogrel use. There exists convincing evidence that preoperative clopidogrel administration in patients undergoing ACB surgery is associated with increased reoperation for bleeding, transfusion requirements and morbidity. Adequately powered studies are needed to elucidate whether preoperative clopidogrel use, in patients with preexisting stent placement undergoing ACB surgery, is beneficial or harmful.