membrane oxygenation) in patients who underwent stenting before bypass surgery, which could have impacted early mortality in this group.

Overall, this paper does raise an important question that merits further investigation. This paper is important in helping focus future efforts at determining the impact of stenting before coronary bypass grafting over the entire duration of the disease process.

See Article page 928.

Commentary: What is the impact of previous coronary stenting for coronary artery bypass graft outcomes?

Louis-Mathieu Stevens, MD, PhD, and
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Cheng and colleagues¹ have studied the effect of previous coronary stenting on subsequent multivessel coronary artery bypass grafting (CABG) outcomes using the Taiwan's National Health Insurance administrative database between 2000 and 2013. From a pool of 32,335 patients of whom 3028 had previous coronary stenting, the authors were able to obtain 2977 propensity score–matched pairs. It is unclear why they included “discharge medication” in their propensity score, which selected patients without previous stenting more likely to require clopidogrel, statin, or angiotensin-converting enzyme inhibitors/angiotensin receptor blockers treatment, like patients with recent myocardial infarction. Their cohort included few patients with concomitant valve surgery (5.6%) but excluded patients with reoperation, aortic surgery, or coronary stenting during the same hospital admission. The authors showed that

CENTRAL MESSAGE

Timing between coronary stenting and coronary bypass grafting influences short-term outcomes but not survival. CABG patients with prior stenting are more likely to require repeat revascularization.

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patients undergoing CABG with previous coronary stenting experienced more 30-day mortality, but previous coronary stenting did not affect late survival at a median follow-up of 3.1 years. It is unfortunate that their health insurance database was not maintained after 2013 and no other database could have been used to provide longer follow-up. Moreover, it would have been interesting to assess whether the timing between coronary stenting and CABG influence postoperative outcomes.

In 2010, we used a similar methodology with a 1:3 propensity score matching ratio to assess the impact of previous coronary stenting using the mandatory Massachusetts Adult Cardiac Surgery clinical database.² To improve

FIGURE 1. Survival after CABG for matched patients with remote prior PCI (>14 days) versus no PCI. Adapted with permission.²

patient homogeneity for the analyses, we considered only patients with isolated CABG surgery ($n = 12,591$). Patients with previous coronary stenting in the context of acute myocardial infarction were excluded to isolate the effect of coronary stenting versus myocardial infarction, since these patients may have been stented in an unstable/unfavorable clinical condition to acutely restore coronary flow and may have been stented only on the culprit coronary artery. Among matched patients with remote coronary stenting performed more than 14 day before CABG, 30-day mortality, hospital length of stay, and survival were no different at a mean follow-up of 4.1 ± 1.2 years

(Figure 1). Among matched patients with recent coronary stenting performed within 14 days of CABG, overall hospital morbidity was increased (including greater reoperation for bleeding, number of blood transfusions, perioperative myocardial infarction, ventilation time, hospital length of stay) with greater readmission rate at 30 days. However, 30-day mortality and survival were no different.

Most interestingly in their series, Cheng and colleagues¹ showed an increase in revascularization events during follow-up for patients undergoing CABG with previous stenting with a dose-dependent effect with the number of previous stenting times or number of previous stents. It is unclear whether these revascularization events were directed to previous stented coronaries patent at the time of CABG but now presenting restenosis or to CABG performed distally on a smaller coronary artery after multiples coronary stents or reflect an increased atherosclerosis burden in these patients. It is possible that some of these revascularization events could have been averted if the patient had been referred sooner to CABG. This highlight the importance of the heart team in the selection of the most appropriate and durable revascularization option for the patient.

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