

# Fewer adverse events with 'double kissing' crush stent than culotte

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Patients with a type of coronary lesion linked with poor prognosis fared significantly better with the stent technique known as double kissing crush than with culotte stenting, according to data from the DKCRUSH-III trial presented today at the American College of Cardiology's 62nd Annual Scientific Session.

DKCRUSH-III is the first head-to-head comparison of double kissing (DK) crush and culotte stent techniques in [coronary artery disease](#). The study focused on bifurcation [lesions](#), which involve a main branch and a smaller side branch forking off a major artery.

DK crush and culotte are two-stent procedures named for their configurations. The culotte technique places stents in the main artery and the side branch, overlapping them in the main vessel before the branch forks, akin to pants legs that meet at the seat. The DK crush technique extends a small piece of the branch stent into the main artery, where it is squeezed against the [main artery](#)'s wall. This approach introduces two points where the balloons used in [stenting](#) inflate in the artery and connect for a "double kiss."

Bifurcation lesions are Y-shaped trouble spots, which account for about 15 percent of lesions treated with coronary stents. Bifurcation lesions present technical problems associated with higher rates of recurrent blockage at the treated site known as restenosis and lower rates of long-term favorable outcome. High morbidity and mortality are connected with a subset called unprotected left main coronary artery (ULMCA) disease. Approximately two-thirds of significant ULMCA disease involves the distal bifurcations. Such lesions magnify the challenge for the interventional cardiologist, who threads balloon-tipped [catheters](#) and stents through major arterial pathways and then must veer off to reach these smaller side channels. The best treatment for this lesion type has been a matter of debate.

"Angiographic follow-up at eight months found 12 cases of in-stent [restenosis](#) in the side branch with DK crush and 22 with culotte [6.8 percent vs. 12.6 percent]," said Jun-Jie Zhang, MD, an interventional cardiologist in the cardiovascular department of Nanjing First Hospital, Nanjing Medical University, in Nanjing, China. "Thus, we have to say that DK crush is superior to culotte stenting."

The multicenter study randomly assigned patients with ULMCA distal bifurcation lesions to treatment with DK crush (210 patients) or culotte (209 patients) stenting. At one year, major adverse cardiac events occurred in 6.2 percent of the DK crush patients and 16.3 percent of the culotte patients. The culotte approach had markedly higher rates of repeat intervention at the target lesion and the target vessel: 6.7 percent target lesion vs. 2.4 percent, and 10.5 percent target vessel vs. 4.3 percent. Clotting at the stent site was low in both groups.

"Although this trial did not include a bypass surgery group to contrast with the stenting techniques, the promising results achieved by DK crush were comparable with those after [coronary artery bypass](#)," Dr. Zhang said.

The study will extend clinical follow-up for participating [patients](#) to five years, and further research through the DKCRUSH-V study is ongoing.

Provided by American College of Cardiology

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