

Temporary blood clot filters may do more harm than good for bariatric surgery patients

May 29 2013

The temporary placement of umbrella-like, metal mesh filters in abdominal veins to stop potentially lethal blood clots from traveling to the lungs during and after weight loss surgery may actually increase the risk of death in morbidly obese patients, according to new Johns Hopkins research.

The study's findings, reported in the journal *JAMA Surgery*, suggest that more tried-and-true measures to prevent venous thromboembolism (VTE) and its deadlier cousin pulmonary embolism (PE)—such as a standard prophylactic dose of [blood](#) thinners, early ambulation, and use of leg compression devices—are best in these [patients](#).

The researchers also found that higher doses of blood thinners in [obese patients](#), a group at higher risk for developing clots, were no more effective than standard doses given to patients who weigh less.

"If you're undergoing minimally invasive bariatric [surgery](#), receive standard doses of blood thinners and get up and about as soon as possible after your operation, the chances of getting a blood clot are low," says study leader Daniel J. Brotman, M.D., an associate professor of medicine at the Johns Hopkins University School of Medicine and director of the hospitalist program at The Johns Hopkins Hospital. "And the evidence suggests that use of [filters](#) may do more harm than good."

The placement of filters in the inferior vena cava, the large vein that carries blood from the lower parts of the body to the heart, have become

more common in surgery since they no longer need to be implanted permanently, like stents used to open clogged coronary arteries. The filters can be removed after the risk of clots has passed. Patients who are obese and patients who have just undergone surgery are two categories of people at increased risk for developing potentially deadly clots, statistics show.

The filters are supposed to act as a [physical barrier](#) to keep clots that form in leg veins from breaking off and reaching the heart and lungs. They may still be indicated for some patients who are at increased bleeding risk and therefore cannot tolerate blood thinners.

The researchers reviewed previously published medical literature on the comparative effectiveness and safety of pharmacological and mechanical strategies to prevent VTE in bariatric patients. Then they reanalyzed the data from eight pharmacologic studies and five studies of filter placement. Comparing outcomes, they found that filters did not reduce the risk of deadly lung clots, and saw some evidence that they are associated with higher overall mortality in the patients.

"If filters helped, we could find no evidence of that," Brotman says. "The data suggest more patients are harmed than benefit from these devices."

Brotman says the risk of fatal blood clots in bariatric surgery patients is less than 1 percent. One reason may be that the operation is becoming less invasive, allowing patients to get up and walk around sooner after surgery, another way to prevent blood clots from forming, he says.

The Johns Hopkins team's analysis suggests that increasing blood thinner doses based on weight made no obvious difference in whether bariatric [surgery patients](#) developed clots. "I was a bit surprised by this, since we do use higher doses of blood thinning medications in larger patients

when we're treating clots, so one would think that larger patients would also require higher doses of these medications to prevent clots," says Brotman. "But if this was the case, we could not detect it."

Provided by Johns Hopkins University School of Medicine

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