

# Researchers question implanting IVC filters on prophylactic basis before bariatric surgery

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Riyaz Bashir, M.D., FACC, RVT, Professor of Medicine at the Lewis Katz School of Medicine at Temple University and Director of Vascular and Endovascular Medicine at Temple University Hospital. Credit: Lewis Katz School of Medicine at Temple University

There are currently more than 200,000 bariatric surgeries being performed in the United States each year according to estimates from the American Society for Metabolic and Bariatric Surgery. Blood clotting is of particular concern during and after these procedures given that obesity and post-surgical immobility are risk factors for developing blood clots, including venous thromboembolism (VTE), which is a blood clot that starts in a vein—often in the deep veins of the leg, groin or arm. This type of VTE is known as deep vein thrombosis, or DVT. A venous clot can break off and travel to the lungs, causing a life-threatening condition called pulmonary embolism (PE). Inferior vena cava filters (IVCFs) are sometimes implanted prophylactically prior to bariatric surgery in an attempt to reduce post-surgical PE rates. IVCFs are small-basket-like devices made of wire that are inserted into the inferior vena cava, a large vein that returns blood

from the lower body to the heart and lungs, to catch the blood clots before they reach the lungs.

"The effectiveness of IVCF insertion prior to [bariatric surgery](#) for primary prophylaxis against PE is unknown and controversial, and is also considered off-label since it lies outside of the official recommendation by the U.S. Food and Drug Administration," said Riyaz Bashir, MD, FACC, RVT, Professor of Medicine at the Lewis Katz School of Medicine at Temple University (LKSOM) and Director of Vascular and Endovascular Medicine at Temple University Hospital.

Dr. Bashir led a research team that sought to compare the outcomes associated with [patients receiving prophylactic IVCFs](#) prior to bariatric surgery to those who did not receive IVCFs. The team's findings were published online June 17 by the journal *JACC: Cardiovascular Interventions*.

The research team used the National Inpatient Sample (NIS) database to identify obese patients who underwent bariatric surgery from January 2005 to September 2015. The outcomes associated with patients receiving prophylactic IVCFs prior to their bariatric surgery were compared to those who did not receive IVCFs.

Among the team's findings:

- 258,480 patients underwent bariatric surgery (representing a national estimate of 1,250,500 over the 11-year study period) and 1,047 (0.41%) of those had prophylactic IVCF implanted.
- Patients with prophylactic IVCFs compared to those without IVCFs had a significantly higher rate of the combined endpoint of in-hospital mortality or pulmonary embolism. (1.4% vs. 0.4%).

- Prophylactic IVCs were associated with higher rates of lower extremity or caval deep vein thrombosis (1.47% vs. 0.10%).
- Prophylactic IVCs were associated with higher length-of-stay (median 3 days vs. 2 days).
- Prophylactic IVCs were associated with higher hospital charges (median \$61,301 vs. \$36,097).

"Our results from this 11-year nationwide observational study suggest that attempting to safeguard bariatric surgery patients from PE-related morbidity and mortality with prophylactic IVCs is ineffective and should not be performed without further evidence supporting its use," added Dr. Bashir. "Research and development in other options such as pharmacologic [deep vein thrombosis](#) prophylaxis, mechanical lower extremity compression devices and early post-operative mobility strategies specifically targeted toward the needs of the obese surgical patients may be higher yielding endeavors for protection against VTE."

Provided by Temple University

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