A New Way To Predict Post-Op Blood Clot Risk

Patients undergoing plastic or reconstructive surgery should receive a risk assessment before their procedure to predict whether they'll develop potentially fatal blood clots in the legs or lungs, according to research at the University of Michigan Medical School. Researchers also found that one in nine patients at highest risk based on that assessment will develop clots if not given clot-preventing medications after surgery.

Published in the November 2010 J*ournal of the American College of Surgeons*, the study evaluated the Caprini Risk Assessment Model, a standard measurement tool used to assess the likelihood a patient will develop dangerous clots in the deep veins of the legs or lungs after surgery. While all patients admitted to UM for surgery receive a Caprini risk assessment, it is not standard practice among plastic surgeons nationwide.

"Our data demonstrates that the Caprini Risk Assessment Model is a useful and effective tool for predicting how likely a patient is to develop venous thromboembolism (VTE) after plastic surgery," says Christopher J. Pannucci, M.D., M.S., resident in the UM Section of Plastic and Reconstructive Surgery, and the study's lead author. Because past studies have shown that some plastic and reconstructive surgery patients are at high risk for developing clots and only about 50 percent of surgeons administer clot-preventing medications after surgery, Pannucci and fellow researchers sought to specifically validate whether the Caprini model was an effective tool for predicting risk and whether administering clot-preventing medications after surgery can reduce their risk.

"We found that the higher a patient's Caprini score, the more likely the patient is to develop blood clots after surgery. We also found that patients with the highest scores were at disproportionately greater risk for developing clots if no clot-preventing medications were administered within 60 days after surgery," Pannucci says.

For the study, researchers reviewed medical record data from 1,126 patients who had plastic or reconstructive surgery and who received no clot-preventing medicines after surgery. Some findings include:

- The Caprini Risk Assessment tool is effective in predicting which plastic and reconstructive surgery patients will develop VTE.
- Patients with a Caprini score greater than eight are at disproportionately higher risk for developing late VTE. One in nine of these patients can expect to have an event if no clot-preventing medication is given within 60 days after the surgery. "We used to think people developed blood clots while still on the operating table," Pannucci says. "But we showed that patients with

lower risk scores tend to develop VTEs within two weeks after surgery, while patients with higher risk scores continue to be at risk 20, 40 and even 60 days after their operation."

- The most common risk factors for developing blood clots after surgery are age, obesity, surgery duration, pregnancy or oral contraceptive use, cancer, personal or family history of clots, and when a person's blood clots easier than most due to genetically abnormal clotting factors.

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