

## **A Dangerous Blood Clot Almost Took Her Life – Here’s How ‘Code PE’ Saved It**

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The first time Nicole McCleish felt the pain in her legs, she thought it was from walking her dog. The 33-year-old had just moved to Charlotte from Kansas City, and she’d been taking him out on new terrain.

“I thought, ‘I must be working those muscles really well,’” she laughs.

But before long, the pain got worse. The throbbing made it hard for her to sleep. And she started noticing red lines creeping up her legs. A visit to the doctor soon revealed the true diagnosis: deep vein thrombosis – blood clots deep in the veins of her legs.

Relieved to know what was causing the pain, Nicole began taking blood-thinning medicines. She started feeling better, and she thought the worst was behind her.

Home alone one day, Nicole suddenly passed out. When she woke up, she could barely breathe. She called 911 and was quickly transported to the emergency room at Carolinas Medical Center.

“A lady started asking me questions – and then I passed out,” she recalls. “That’s all I remember.”

A blood clot had broken loose and traveled to Nicole’s lungs, causing a dangerous blockage known as a pulmonary embolism (PE). With blood flow to her heart and lungs cut off, she went into shock – and then cardiac arrest.

“When she came in, she was alive, but barely,” says emergency medicine physician Daniel Troha, MD, who worked with a specialized team to care for Nicole. Fortunately, doctors and staff had a protocol developed specifically to handle severe pulmonary embolism cases: Code PE.

“Code PE alerts a team of different specialists – internal medicine, cardiologists, critical care and more – to come to the ER and work together to quickly decide the best course of action for a patient’s care,” says Dr. Troha, who led the development and launch of Code PE at Carolinas Medical Center in 2014.

“Pulmonary embolism affects your heart, your lungs, how your blood clots,” Dr. Troha says. “It’s really a multidisciplinary condition, so it needs a multidisciplinary team to treat it.”

The centerpiece of Code PE is a treatment algorithm Dr. Troha and other specialists spent a year developing. The step-by-step guide outlines different recommended treatments depending on the patient's condition.

"Pulmonary embolisms are complicated, and when a patient comes in with one, time is of the essence," says Dr. Troha. "With the algorithm, we did the hard work ahead of time – so we don't have to waste precious minutes when we really need it."

Springing into action, doctors gave Nicole clot-busting drugs to try and break up the clot. Between the medicine and CPR, they were able to get her heart going again – but her body was still in shock.

The medicine hadn't dissolved all of the blockage, so they moved on to the next step: an embolectomy, surgery in which doctors pull the blood clot directly out of the pulmonary artery.

Finally, they put Nicole on what's called ECMO, a machine that temporarily does the heart and lungs' job of pumping oxygen-rich blood through the body. After a few days, her own heart and lungs had recovered enough to take back over.

Nicole's doctors say hers was the most severe case of PE they'd seen. But thanks in part to Code PE, she got quick, life-saving care.

"The efficiency and speed of the team to get her definitive care absolutely saved her life," says Dr. Troha.

While she was fortunate to survive, her fight was far from over. Doctors diagnosed her with ovarian cancer, which they suspected may have caused her deep vein thrombosis, leading to the PE.

While continuing treatment to fight the cancer, Nicole has expressed gratitude for the fast-acting implementation of Code PE and acknowledges the excellent care she received at Carolinas Medical Center.

"Right now," she says simply, "I feel really good."