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**Note: Video and photos available for download: <http://bit.ly/20rAOzN>**

## **WHAT A PAIN: THORACIC OUTLET SYNDROME OFTEN NEEDS SURGERY TO FIX**

COLUMBUS, Ohio – Shoulder and arm pain come with the territory for some athletes and certain occupations like hair stylists, mechanics, even office workers.

However, experts at [The Ohio State University Wexner Medical Center](#) say the pain and tingling could stem from a more serious condition called thoracic outlet syndrome (TOS). This occurs when the vein, artery or nerves that run between the collarbone and first rib get compressed. In severe cases, it can cause large, dangerous blood clots.

[Dr. Patrick Vaccaro](#), chief of the [Division of Vascular Diseases and Surgery](#), says people may have TOS for years and not realize it's the cause of their pain.

"There are a wide range of symptoms and many causes to consider with upper extremity pain, so TOS can be missed or take a while to diagnose," said Vaccaro, who is also a vascular surgeon.

The disorder can present a few ways, depending on what's getting compressed. A squeezed nerve will cause numbness, tingling and weakness in the arm and fingers. If there's discoloration and swelling, it's likely the subclavian vein that's involved and causing blood to clot. Someone with injury to the subclavian artery may have a cool arm with a weaker pulse and will feel fatigue with repetitive motions. Rarely, they can develop blood clots that break away and travel to the fingers.

Sandy Niehaus, 21, of Cincinnati, Ohio, is an avid tennis player. When her arm suddenly swelled, she found out she had TOS – and probably had it for some time.

"They found a blood clot going from the middle of my forearm to the middle of my chest. I just thought I strained a muscle. I had no idea it was as serious as a blood clot," Niehaus said.

Vaccaro said most TOS patients need surgery to open up the thoracic outlet by removing a section of the first rib. Only about one-third of patients with neurologic TOS can get relief from physical therapy alone.

"It's a tricky area to operate, where important nerves and blood vessels are tightly compacted. You want to preserve and not injure them," Vaccaro said. "But it's a wonderful thing when a patient comes out of surgery and can already notice a difference. For some, it's life changing because it's the first time they remember not being in pain."

Thoracic outlet syndrome is most commonly seen in athletes such as swimmers, pitchers, tennis players, volleyball players and weight lifters who make repetitive motions that stress the shoulder. Those with poor posture and desk workers who turn their head while typing can also cause muscle changes that can compress the nerves and blood vessels.

Vaccaro said his team treats about one case per week and the numbers are increasing among young people. He said athletes specialize in competitive sports at younger ages and that can contribute to repetitive use injuries such as TOS.

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