

Nearly half of sarcoma surgeries done by nonsurgical oncology specialists

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Robert Canter

Orthopedic oncologists and surgical oncologists, who have been trained in the complex procedures required to remove sarcomas located deep in the muscles and other soft tissues of the limbs, conducted only 52 percent of these operations at 85 academic medical centers during a three year period, according to an analysis of national data by UC Davis researchers that is published online today in the *Journal of Surgical Oncology*.

The remaining 48 percent of these sarcoma surgeries were conducted by [general surgeons](#), plastic [surgeons](#) and [orthopedic surgeons](#), whose post-medical degree fellowship training did not emphasize the multi-disciplinary evaluation and surgical management of sarcomas and other cancers located deep in the soft tissue of the arms and legs, said Robert J. Canter, associate professor of surgery at UC Davis and first author of

the journal article.

The UC Davis study is the first to examine the overall frequency and distribution nationwide of the different surgical specialists who remove sarcomas and other deep-seated tumors in the soft tissue of patients' limbs.

"Our findings may have significant implications for the quality of care provided to patients who undergo surgery to resect, or remove, sarcomas in the deep soft tissue of the limbs," said Canter, a [surgical oncologist](#).

Canter explained that only orthopedic oncologists and surgical oncologists, but not general surgeons, plastic surgeons and orthopedic surgeons, have been trained in how to remove sarcomas from muscles and other soft tissue without leaving behind [cancerous cells](#) that could trigger another tumor. Studies have shown that achieving tumor-free margins improves the long-term survival of [cancer patients](#).

Patients whose sarcomas are not diagnosed until after the surgery often require a second operation to remove remaining [cancer cells](#), Canter said. A repeat operation puts the patient at risk again for surgical complications, he noted.

A sarcoma can be diagnosed before surgery by needle biopsy. However, because sarcomas are rare, many general surgeons, plastic surgeons and orthopedic surgeons may not consider that the tumor could be a sarcoma before operating on the patient, Canter said.

According to the American Cancer Society, about 11,410 new soft tissue sarcomas will be diagnosed and 4,390 Americans are expected to die of soft tissue sarcomas in 2013. About 50 percent of soft tissue sarcomas occur in the limbs.

Most tumors in muscles and other soft tissue are

sarcomas, said Canter. Approximately 50 percent of skin, did not differ significantly among general these sarcomas are at risk for spreading to other tissues in the body. surgeons, orthopedic surgeons, [plastic surgeons](#), surgical oncologists and orthopedic oncologists.

When the tumor is diagnosed as a sarcoma before the operation, the surgeon can carefully evaluate the cancer to determine whether radiation or chemotherapy will be needed to reduce the size of the tumor and whether a plastic surgeon or a vascular surgeon should be part of the surgical team. Canter said a patient's need for physical therapy or occupational therapy after the operation also is taken into consideration during the pre-surgical evaluation and planning period.

These considerations led both the U.S. National Comprehensive Cancer Network and European Society of Medical Oncology to develop guidelines recommending that surgeons with expertise and training in the management of soft tissue sarcomas should operate on patients with tumors that may be sarcomas.

The UC Davis researchers' analysis also revealed that 17% of these operations were performed during 2007 to 2009 by surgeons who conducted an average of only one or two of these surgeries each year. Previous studies have shown that better clinical outcomes result when the surgeon performs a greater volume of these specialized operations.

Canter and his collaborators determined that during 2007 to 2009 sarcoma surgeries were performed by 2,195 general surgeons, 1,979 general orthopedic surgeons, 792 plastic surgeons, 533 surgical oncologists and 83 orthopedic oncologists.

Adjusting for the number of physicians in the database, Canter and his collaborators determined that the mean number of deep soft tissue tumor removals from the extremities, including sarcomas, per specialty was: 9.4 percent for general surgeons, 7.7 percent for plastic surgeons, 26 percent by surgical oncologists, 30.8 percent by general orthopedic surgeons and 26 percent by orthopedic oncologists.

In contrast, the mean number of operations to remove soft tissue tumors that were not [sarcomas](#) and that were located subcutaneously, or under the

For their analysis, the researchers used the Faculty Practice Solution Center database administered by the University Health System Consortium and the Association of American Medical Colleges.

Because the database does not include information about clinical outcomes, Canter and his colleagues were unable to associate each surgical specialty to a rate of postsurgical complications or post-surgical survival.

More information: The *Journal of Surgical Oncology* paper is titled, "Extremity Soft Tissue Tumor Surgery by Surgical Specialty: A Comparison of Case Volume Among Oncology and Non-Oncology-Designated Surgeons."

Provided by UC Davis

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