

Research Shows that Lymph Node Sampling During Kidney Tumor Surgery Is Safe

Nicholas Cost, MD, hopes to use gathered data to establish guidelines for how best to sample lymph nodes during surgery for pediatric kidney cancer.

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A longstanding approach to surgeries for children with kidney tumors has been an abundance of caution.

While a growing body of evidence demonstrates that children who have extended lymph node sampling during surgery experience better outcomes, some have questioned whether removing more lymph nodes as part of the cancer staging is worth the risk of side effects such as lymphatic fluid leakage into the abdomen.

However, [recently published research](#) shows that pediatric patients who receive more extended lymph node sampling during surgery for Wilms tumor, and other types of pediatric renal tumors, do not experience any more post-surgical complications than children who don't.

"We've known that children who receive adequate lymph node sampling have better outcomes, but a longstanding hesitation has been, 'Is it safe to sample a larger number of lymph nodes?'" explains researcher [Nicholas Cost, MD](#), an associate professor of [urology](#) in the University of Colorado [Department of Surgery](#) and CU [Cancer Center](#) member. "In my practice, I haven't seen complications from it, but there hadn't been much research looking at outcomes. That absence of data allowed a very small number of anecdotes to drive practice, but now we have more data showing that lymph node sampling is safe for patients, so we can look more at its therapeutic benefits beyond just the diagnostic benefits.

Understanding outcomes

To understand outcomes following lymph node sampling during surgery to remove Wilms tumor, a type of kidney cancer that most often affects children ages 3 to 5, Cost and his co-researchers analyzed outcomes for 144 Colorado patients who had lymph node sampling at the time of surgery for kidney tumors between 2005 and 2019.

In analyzing the number of lymph nodes sampled and its influence on the odds of the child experiencing complications, the researchers found that there was no statistically significant difference in clinically significant complications between patients who underwent more extensive lymph node sampling than those who didn't. Of the small number of complications reported, small bowel obstruction was the most common in both groups.

Lymph node sampling can be an important factor in staging Wilms tumor, helping clinicians assess whether the cancer has spread beyond the tumor. "Just because lymph nodes don't look involved when we're performing surgery doesn't mean they're not," Cost says. "They could be microscopically involved and we have no way of knowing during surgery whether that's the case. The lymph nodes have to be looked at under a microscope."

Establishing a baseline

A goal of the research is to contribute data to standardizing surgical practice for Wilms tumor and other kidney cancer, Cost says. Though the international [Children's Oncology Group](#) has kidney tumor protocols that mandate lymph node sampling during surgery to remove kidney tumors, there have previously been no guidelines for practice – for example, establishing how many lymph nodes should be sampled.

"One of the reasons we focused on Wilms tumor in the research is because it drives a lot of decision making in pediatric renal cancer," Cost says. "We can achieve really good outcomes almost regardless of how advanced it is, but we really tailor treatment – which can include chemotherapy and radiation – and lower stages of the disease don't need as much of those therapies to achieve a high rate of cure."

"Lymph node sampling is really important for accurate staging, and staging guides treatment, so we need more consistency in how lymph node sampling is happening."

Oftentimes, removing a kidney that has a tumor in it means removing some lymph nodes that come along with it, "but we're encouraging people to also take lymph nodes from the areas just beyond where the kidney was, from the lymph node basins where we know the kidney should drain," Cost says. "That's another reason why it's important we establish guidelines for the number of lymph nodes to take, because you might sample one and it's not involved, but could the adjacent lymph node be involved? Logically, by sampling more lymph nodes, the staging becomes more reliable."

Further research will help establish these guidelines, Cost says, focusing on minimizing risk to patients while sampling a sufficient number of lymph nodes to help establish accurate staging.

"Nothing is risk-free, of course, but it's important that we have these data to help demonstrate that extending lymph node sampling is safe and to establish a baseline that can give surgeons comfort as they strive to obtain more lymph nodes," Cost says.

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