The great tonsil dilemma: Is routine analysis of pediatric tonsillectomy specimens worth the money?

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Without fanfare, hundreds of thousands of children surrender their tonsils to a surgeon's scalpel each year, usually to alleviate recurring infections and obstructive sleep problems. Most of the time, the snipped tonsils are sent to a pathologist, who looks for evidence of more serious medical problems, like unsuspected cancer.

But this common practice may not be cost-effective because those additional examinations rarely lead to the discovery of hidden disease, a new University of Michigan Heath System analysis shows.

The approximately $35 million spent nationwide on such examinations each year might have more impact if spent elsewhere in the healthcare system, says the study's senior author, Marc C. Thorne, M.D., M.P.H., assistant professor of otolaryngology at the U-M Medical School.

"The question is: How do we make rational use of our heath care dollars?" asks Thorne. "It's a matter both of economics and of societal values."

The findings, published online ahead of print publication in the journal *Otolaryngology–Head and Neck Surgery*, are but a single example from the larger, ongoing debate about how to best conserve resources, create efficiencies and lower the cost of health care.

Pathologists examine tonsillectomy specimens in two ways: a visual, or "gross," examination and microscopy. Microscopic examination is nearly three times more expensive than visual inspection.

Forty-two percent of specimens receive gross analysis, 38 percent are examined under the microscope and 20 percent are discarded without examination, according to a 2001 survey of American Academy of Otolaryngology members.

To determine the effectiveness of each practice, Thorne and his colleagues pored over data from 5,235 tonsillectomies conducted at U-M between 1996 and 2008.

A pathologist performed a visual examination in 4,186 of those cases – and zero cases of additional disease were identified. Meanwhile, the collective cost of those examinations is roughly $150,000.

"Looking grossly might seem like next best alternative to the expense of putting every specimen under the microscope," Thorne says. "But it may be the worst of both worlds – the data show you're unlikely to find anything, but you're still incurring significant expense."

While better at identifying disease, microscopic examination also turned up few unsuspected problems. The incidence is so low that the researchers estimated over $750,000 would need to be spent for every case of lymphoma found.

Out of 1,066 microscopic examinations, 18 cases of disease were found, all of which were suspected before surgery – either because a patient was known to be at higher risk because they had previously received an organ transplant or a surgeon noticed something suspicious and requested additional scrutiny.

No one is suggesting that discovering hidden cancers and other diseases isn't important, Thorne says. The question is what we might be giving up elsewhere in order to find those rare cases.

Part of the problem is a disconnect between the service and the payment. For a parent with insurance, there might be no additional out-of-pocket cost to have their child's tonsil's examined under a microscope. But as a society we have to balance those individual desires with the burden on the overall system, Thorne explains.

"If we're going to make a rational decision – say, 'I don't care how much it costs, missing a lymphoma in a child is unacceptable' – then we should be doing microscopy all the time. If we're just doing gross analysis, we're still spending a lot of money, yet we know we're unlikely to find anything that way."

Still, routine analysis has some non-clinical benefits, such as its use in training pathologists, the authors note.

Jonathan McHugh, M.D., an assistant professor of pathology at U-M Medical School and one of the study's authors, says some pathologists may be resistant to change because they think of themselves as the last line of defense.

"In this instance, I think the data shows we haven't been that valuable in that role," McHugh says.

More information: "Pathologic Evaluation of Routine Pediatric Tonsillectomy Specimens Analysis of Cost-Effectiveness," Otolaryngology–Head and Neck Surgery, published online Jan. 31, 2011.