

Laparoscopy Better for Perforated Appendicitis

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Senior Editor

SANTA FE, N.M. — A review of discharge data from nearly 1.5 million appendectomies found average hospital charges in nonperforated appendicitis cases were nearly \$4,000 higher for laparoscopic procedures than for open procedures, despite similar lengths of stay.

Conversely, charges were comparable for both types of procedures in perforated cases, but hospital stays were 1 day shorter when surgery was done laparoscopically.

"These data indicate that laparoscopic appendectomy should be reserved for perforated appendicitis while open appendectomy should be performed in nonperforated appendicitis," David Lud-

'Laparoscopic appendectomy should be reserved for perforated appendicitis while open appendectomy should be performed in nonperforated appendicitis.'

low, a fourth-year medical student at the University of Utah, Salt Lake City, concluded in a presentation of the findings at the annual meeting of the Western Surgical Association.

Mr. Ludlow and senior author Dr. Raminder Nirula, a surgeon at the University of Utah Hospitals, conducted the retrospective cohort study of appendectomies in the U.S. National Inpatient Sample (NIS) from 2001 to 2005. Using ICD-9 diagnosis and procedure codes, they identified 598,384 laparoscopic procedures and 871,605 open procedures.

During the years studied, the number of laparoscopic procedures increased by 24% for nonperforated appendicitis and by 19% for perforated appendicitis, while the number of open appendectomies decreased. By 2005, the discharge data showed nonperforated appendicitis was more likely to be treated laparoscopically than by open surgery. Open appendectomy was still more common in perforated cases (fewer than 30,000 laparoscopic procedures vs. fewer than 25,000 open procedures).

While hospital charges throughout the study period increased for laparoscopic and open procedures, by 2005 they were similar in perforated cases at \$26,399 and \$25,368, respectively. For nonperforated appendicitis, however, laparoscopic procedures in 2005 averaged \$18,479 vs. \$14,828 for open appendectomy.

Lengths of stay in nonperforated cases were similar, at 1.7 days for laparoscopic procedures and 2.1 days for open procedures, Mr. Ludlow reported. In perforated cases, however, laparoscopic patients left the hospital after 4.2 days on average vs. 5.1 days after an open appendectomy.

The NIS database is large, includes all kinds of patients from all kinds of hospitals, and is able to stratify data by per-

forated vs. nonperforated appendicitis, Mr. Ludlow noted. The NIS does not, however, include data on readmissions, wound infections, intra-abdominal abscesses, or return to work.

Addressing these gaps, he cited single-institution studies that have shown similar readmission and wound infection rates for laparoscopic and open procedures, but higher abscess rates by 1%-4% and faster return to work by 1-4

days after laparoscopic appendectomy.

Dr. Fred Luchette of Loyola University Medical Center in Maywood, Ill., praised the research but questioned the recommendations made solely on the basis of evidence from discharge data. While hospital costs in nonperforated cases may be higher with laparoscopic procedures, the cost to society could be lower, he said, noting that such patients usually return to work sooner.

"Society costs vs. hospital costs—this is a philosophical question," Dr. Nirula responded, emphasizing that the study only addressed the growing concern over hospital costs.

As for why an open procedure with longer length of stay would not cost more in perforated appendectomy cases, Dr. Nirula concurred with an audience suggestion that the added cost of equipment for laparoscopy probably was a factor. ■



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