

Outpatient laparoscopic appendectomy is feasible in a public county hospital

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Laparoscopic surgical procedures have many benefits over traditional open operations, like decreased length of stay at the hospital, less postoperative pain for patients, and earlier resumption of an oral diet. As a result, many laparoscopic procedures have been transitioned to outpatient ones. In the first study of its kind, a research team at a large, urban public safety net hospital found that outpatient laparoscopic appendectomy (surgical removal of the appendix) is safe for patients and results in shorter hospital stays and decreased health care costs, according to study results published as an ["article in press"](#) on the *Journal of the American College of Surgeons* website ahead of print publication. Those in the outpatient group were also satisfied with the outpatient protocol, survey results showed.

Within the last few years, research findings from hospitals exploring the feasibility of outpatient laparoscopic appendectomy have been published, but senior study author Glenn Ault, MD, FACS, said he had not seen any from an urban safety net hospital system. Dr. Ault is the chief of service for the division of colorectal surgery at LAC+USC Medical Center, Los Angeles, Calif., where this study was conducted. It is a county teaching hospital that principally takes care of an underserved population, study authors wrote.

"We work in an environment of limited resources, so we're always trying to think about how to deliver care with the resources we have. There are a lot of challenges we have in our patient population," Dr. Ault said. The team wanted to find out if the outpatient treatment strategy would

succeed without worsening outcomes or satisfaction by using a well-defined protocol and giving clear instructions to patients.

From 2014-2016, all patients age 18 and older who underwent laparoscopic appendectomy for acute, uncomplicated appendicitis were enrolled in the study, Dr. Ault explained. During its first year, researchers documented standard baseline perioperative practice for the control group. All data was collected prospectively. Researchers then introduced a protocol for patients who met strict intraoperative and discharge criteria to be discharged from the post-anesthesia care unit (PACU). Discharge criteria included normal vital signs; adequate pain control; ability to urinate, ambulate, and tolerate oral intake; and an assessment by a physician that the patient was stable for discharge. After a transition period of one month, data was collected for one year from the outpatient group. The two groups were analyzed for differences in demographics, length of stay, nursing transitions, complications, readmissions, and patient satisfaction. Results from 351 patients were analyzed comparing 178 in the inpatient (control) group with 173 in the outpatient group.

Dr. Ault noted that patients were given information about the study, and they were told they could go home from the PACU if the intraoperative findings confirmed the diagnosis of uncomplicated appendicitis. If the appendix was ruptured or gangrenous, or if the patients didn't meet discharge criteria, they understood they would require hospital admission for further observation. Patients scheduled a postoperative clinic follow-up appointment and were asked to provide a phone number to be contacted for a postoperative survey. Dr. Ault said the survey was a major strength of this study, as he had not seen any other studies that took patient satisfaction data into account.

Of the 173 people in the outpatient group, 113 (65 percent) went home. The rest did not go home for reasons including lack of transportation,

not passing discharge criteria, concern for intraoperative findings, other medical conditions, and homelessness. Researchers found that the outpatient group had statistically significant older patients (age 36 vs. 32), shorter operative time (69 minutes vs. 83 minutes), longer time in the PACU (242 minutes vs. 141 minutes), fewer nursing transitions (four vs. six), and shorter postoperative length of stay (nine hours vs. 19 hours).

Authors wrote there was no difference in complications, post-discharge ER visits, or readmissions. No one in the outpatient group who was sent home from the PACU had postoperative complications or required readmission. Satisfaction survey responses from both groups showed no statistically significant difference, and the median response scores of both groups were the same.

Study authors were not able to calculate cost savings for this protocol because the hospital operates under a Medicaid waiver instead of billing for each specific charge, Dr. Ault explained. However, they cited previous literature that estimates a day of hospitalization at \$1,900.

Survey questions to the outpatient group asking if they were satisfied with the protocol and if they would want it again yielded positive reviews, the study authors wrote. "We wanted to make sure the [patients](#) felt they were receiving appropriate care and nothing was missed in the process," Dr. Ault said.

He added that the results of this study have changed the practice at his hospital—outpatient laparoscopic appendectomy is now the norm.

"The main message is that we need to continually look for efficiencies and cost savings in a health care environment that is going to become increasingly restrictive," Dr. Ault said. "We have to look for ways to be efficient with the resources that we have."

Provided by American College of Surgeons

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