

Appendicitis patients can safely leave hospital the same day of their operations

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Patients with acute appendicitis who undergo laparoscopic appendectomy (surgical remove of the appendix) do not experience higher rates of postoperative complications or costly readmissions when sent home on the same day of their operations compared with patients hospitalized overnight, according to study results published online as an "article in press" on the *Journal of the American College of Surgeons* website ahead of print publication.

Each year, more than 250,000 appendectomies are performed in the United States for acute appendicitis.^{1,2} Increasingly, more of these patients are being sent home directly from the recovery room, avoiding an overnight hospital stay.

"Advances in early recognition and treatment of the disease process and minimally invasive techniques have allowed for some of the inflammatory response and the trauma from surgical treatment to be lessened and recovery to be faster; as a result, patients can get back to their lives much sooner," said study principal investigator Armen Aboulian, MD, FACS, a colorectal surgeon at Kaiser Permanente, Woodland Hills, Calif. "Now up to 60 percent of non-perforated acute appendicitis patients at Kaiser Permanente are treated without an overnight stay," Dr. Aboulian said.

This decision is made at the discretion of the surgeon and treatment team. But the question has remained as to whether patients with a same-day discharge are more likely to return with complications and be readmitted.

To find out, researchers analyzed the medical records of 12,703 patients who underwent a laparoscopic appendectomy for non-perforated appendicitis at 14 Southern California Region Kaiser Permanente medical centers between 2010 and 2014. The cohort was composed of 6,710 patients who were discharged on the same day of their procedure and 5,993 patients who were

hospitalized overnight.

The Procedural and Anesthesia Scoring System is used for all patients who are discharged directly from the recovery room after any operation in all Southern California Kaiser Permanente Medical Centers. To be released, patients must have a score that is greater than 12; those with a score of 12 or less remain in the hospital at the same level of care.

For the study, researchers compared the patients discharged on the day of an operation with those hospitalized overnight. They found that the group discharged on the same day of an operation had similar return rates to emergency rooms or urgent care centers and an overall lower rate of readmission within 30 days when compared with those who were hospitalized overnight (2.2 percent versus 3.1 percent).

In both groups, postoperative rates of visits to the emergency room or radiology department for diagnostic or therapeutic imaging studies were statistically similar. Postoperative general surgery department visits were slightly higher in the hospitalized group (85 percent versus 81 percent). Factors such as older age, serious health problems, and a later procedure time (most surgeons would not discharge their patients from the recovery room late at night) increased the rate of overnight admissions.

"In general, recovery at home is preferred by most patients and sleeping in your own bed has benefits that are difficult to measure," Dr. Aboulian said. "At the same time, the goal of the study is not to rush the patients home, but rather, the importance of this study lies in the confirmation that discharge from the recovery room is safe and surgeons across the nation may consider it directly from the recovery room in the appropriate setting."

In addition, the study, which is the largest one on

this issue to date, showed that same day discharge translates into an average direct cost savings of \$348 per case within the Kaiser Permanente system. Recent studies have garnered attention that focus on non-operative management of [acute appendicitis](#), using antibiotics as the main mode of treatment. Often, those studies involve a brief hospitalization followed by discharge on antibiotics, Dr. Aboulian said. One of the main advantages of antibiotic treatment alone is the cost savings. However, if patients are sent home from the recovery room without an overnight stay, there could potentially be up to an annual health care savings of \$921,500,000 in the United States.

"This study is significant because it demonstrates that patients may be treated safely with surgery and discharged on the same day as the operation," Dr. Aboulian said. "Two hundred years ago, the diagnosis of appendicitis had more than a 60 percent mortality rate. Now these [patients](#) are treated and don't even have to spend the night in the hospital. Medical treatment for this disorder has come a long way."

More information: Same Day Discharge in Laparoscopic Acute Non-Perforated Appendectomy. *Journal of the American College of Surgeons*, 2016.

1. Cross W, Chandru Kowdley G. Laparoscopic appendectomy for acute appendicitis: a safe same-day surgery procedure? *Am Surg*. 2013;79(8):802-5.
2. Frazee RC, Abernathy SW, Davis M, Hendricks JC, Isbell TV, Regner JL, et al. Outpatient laparoscopic appendectomy should be the standard of care for uncomplicated appendicitis. *J Trauma Acute Care Surg*. 2014;76(1):79-82.

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