Improving outcomes after laparoscopic appendectomy: a population-based, 12-year trend analysis of 7446 patients

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OBJECTIVE
Laparoscopic appendectomy for acute appendicitis has become increasingly used over the past decade. The objective of this trend analysis is to assess whether clinical outcomes after laparoscopic appendectomy have improved over the past 12 years.

METHODS
This analysis is based on the prospective database of the Swiss Association of Laparoscopic and Thoracoscopic Surgery. All patients undergoing emergency laparoscopic appendectomy for acute appendicitis from 1995 to 2006 were included. The following outcomes were assessed for each of the 12 years: conversion rates, intraoperative complications, surgical postoperative complications, general postoperative complications, rate of reoperations, and length of hospital stay. Unadjusted and risk-adjusted multivariable analyses were performed. Statistical significance was set at a level of P < 0.05. All statistical tests were 2-sided.

RESULTS
Data from 7446 patients undergoing laparoscopic appendectomy for acute appendicitis were prospectively collected. Over the period of observation, the conversion rate decreased significantly from 2.2% to 1.2% (P(trend) < 0.001), as did intraoperative complications (from 3.1% to 0.7%; P(trend) < 0.001), surgical postoperative complications (from 6.1% to 1.9%; P(trend) < 0.001), general postoperative complications (from 4.9% to 1.5%; P(trend) < 0.001), and rates of reoperations (from 3.4% to 0.7%; P(trend) < 0.001). Average postoperative length of hospital stay also significantly decreased from 4.9 to 3.5 days (P(trend) < 0.001).

CONCLUSIONS
Our investigation provides compelling evidence that intraoperative complications, surgical and general postoperative complications, conversion rates, rates of reoperations, and average length of hospital stay have significantly decreased over the past decade in patients undergoing surgery for acute appendicitis. The present trend analysis is the first one in the literature...
encompassing more than a decade and reporting clinical outcomes after laparoscopic appendectomy for acute appendicitis, which represents an important quality control.

type: journal paper/review (English)
date of publishing: 2-2011
journal title: Ann Surg (253/2)
ISSN electronic: 1528-1140
pages: 309-13