

LAPAROSCOPIC APPENDECTOMY IN THE SETTING OF PURULENT PERITONITIS. DOES IT PRECLUDE A LAPAROSCOPIC APPROACH? A FIVE-YEAR SINGLE CENTER EXPERIENCE

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ABSTRACT

INTRODUCTION: Acute appendicitis is among the most frequent surgical emergencies, and timely management is essential to avoid complications such as perforation, purulent peritonitis, and sepsis. Laparoscopic appendectomy has become the standard operative technique, offering reduced pain, shorter hospitalization, and lower wound morbidity. Whether purulent peritonitis should be regarded as a contraindication to laparoscopy remains controversial.

OBJECTIVE: The Objective of the study is to evaluate the efficacy and safety of a laparoscopic-first approach in patients presenting with complicated appendicitis characterized by purulent peritonitis and sepsis, and to determine whether purulence should preclude laparoscopy.

MATERIALS AND METHODS: A retrospective cohort study of 200 patients undergoing laparoscopic appendectomy was conducted over a five-year period. 90 patients (45%) had complicated appendicitis with purulent peritonitis, confirmed radiologically or intraoperatively. Outcomes analyzed included conversion to open surgery, operative duration, intra-abdominal abscess (IAA), surgical-site infection (SSI), and postoperative length of stay (LOS). Indications for conversion were categorized as dense adhesions, inability to identify the appendiceal base, or uncontrolled bleeding.

RESULTS: Out of 200 patients, 90 were complicated and 110 uncomplicated. Mean age was 26.5 years (16–72) vs. 28 years (17–65) respectively. Conversion occurred in 17/90 complicated cases (18.9%), including two partial cecectomies due to base rupture, compared with 7/110 uncomplicated cases (6.3%) (OR 3.43; p=0.008). Mean operative time was longer in complicated cases (130 vs. 78 minutes; p<0.0001). SSI occurred in 5/90 (5.6%) vs. 1/110 (0.9%) (OR 6.41; p=0.092). IAA developed in 3/90 (3.3%) vs. 1/110 (0.9%) (OR 3.76; p=0.33). LOS was significantly longer in complicated cases (5.2 vs. 2.9 days; p<0.0001).

CONCLUSION: Laparoscopic appendectomy is safe and feasible for patients with purulent peritonitis. Although operative time and conversion rates are higher, SSI and IAA are not significantly increased. Purulent peritonitis alone should not be considered a contraindication to initiating a laparoscopic-first strategy in centers with adequate surgical expertise.

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INTRODUCTION

Acute appendicitis is among the most frequent surgical emergencies, and timely management is essential to avoid complications such as perforation, purulent peritonitis, and sepsis. Laparoscopic appendectomy has become the standard operative technique, offering reduced pain, shorter hospitalization, and lower wound morbidity. Whether purulent peritonitis should be regarded as a contraindication to laparoscopy remains controversial.

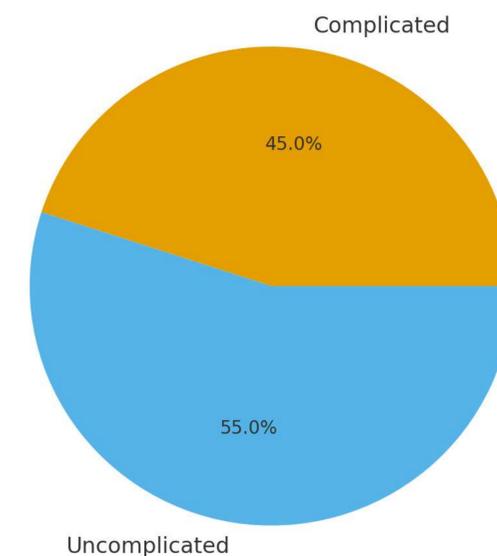
METHODS AND MATERIALS

- ❖ A retrospective cohort study of 200 patients undergoing laparoscopic appendectomy was conducted of a five-year period
- ❖ 90 patients (45%) had complicated appendicitis with purulent peritonitis, confirmed radiologically or intraoperatively
- ❖ Outcomes analyzed included:
 - Conversion to open
 - Operative duration
 - Intra-abdominal abscess (IAA)
 - Surgical site infection (SSI)
 - Post-operative length of stay (LOS)

RESULTS

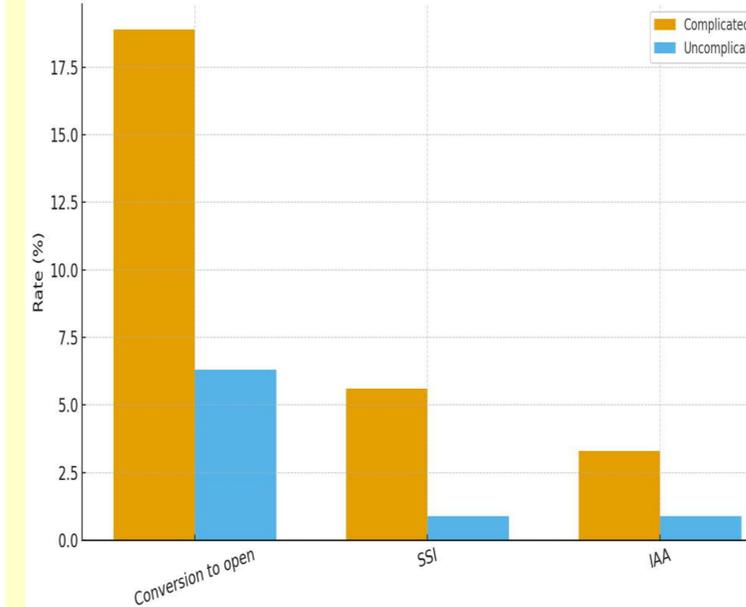
A total of 200 patients underwent laparoscopic appendectomy over the five-year period, of whom 90 (45%) had complicated appendicitis with purulent peritonitis and 110 (55%) had uncomplicated appendicitis. Mean age was 26.5 (16-72) in the complicated group and 28 years (17-65) in the uncomplicated group. Conversion to open surgery occurred in 17/90 complicated case (18.9%) - including two partial cecectomies for base rupture—versus 7/110 uncomplicated cases (6.3%) (OR 3.43; p=0.008). Mean operative time was significantly longer in complicated cases (130 vs 78 minutes; p<0.0001)

Distribution of Appendicitis Cases (N=200)



Postoperative surgical-site infection (SSI) occurred in 5/90 (5.6%) complicated versus 1/110 (0.9%) uncomplicated cases (OR 6.41; P=0.092), while intra-abdominal abscess (IAA) developed in 3/90 (3.3%) versus 1/110 (0.9%) (OR 3.76; p=0.33). Although numerically higher in complicated appendicitis, both SSI and IAA differences were not statistically significant. Length of stay was significantly longer in complicated cases (5.2 vs 2.9 days; p<0.0001).

Postoperative Outcomes by Group



DISCUSSION

Acute appendicitis with purulent peritonitis has been considered a relative contraindication to laparoscopy due to fears of inadequate lavage and higher abscess risk. In this five-year single-center series, a laparoscopic-first approach led to longer operative times and an 18,9% conversion rate, but no significant increase in intra-abdominal abscess or surgical-site infection versus uncomplicated cases. Although limited by its retrospective design and lack of a primary open-surgery control group, this study supports that purulent peritonitis alone should not preclude laparoscopy. Instead, a laparoscopic-first strategy with vigilant technique and a low-threshold for conversion is safe in experienced centers.

CONCLUSION

Laparoscopic appendectomy is safe and feasible for patients with purulent peritonitis. Although operative time and conversion rates are higher, SSI and IAA are not significantly increased. Thus, purulent peritonitis should not be a contraindication to initiating laparoscopy.

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