ROBOTIC-ASSISTED CHOLECYSTECTOMY IN AN ACUTE CARE SETTING: A BETTER OPERATION?

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- Background: Laparoscopic cholecystectomy (LC) has long been the standard of care for acute cholecystitis with well-established outcomes, but patients with higher acuity and surgical comorbidity remain challenging populations with potentially higher complication rates. The popularity of robotic-assisted cholecystectomy continues to grow. The enhanced optics and wristed instrumentation potentially provides improved technical capability and may result in lower intraoperative complication rates and conversion to open cholecystectomy in patients admitted with acute cholecystitis.

- Methods: From March 2012 to October 2020, a total of 586 patients with acute cholecystitis underwent robotic-assisted cholecystectomy by one surgeon at three institutions. All patients were identified as having acute cholecystitis based on clinical presentation, laboratory studies and imaging. A retrospective review was performed for these patients, noting the outcomes and complications of the procedure.

- Results: The 586 patients had a mean age of 61.9 years (range, 19-98). Mean preoperative body mass index (BMI) was 38.4 kg/m2 (range, 24.8-80.4). 100% of patients were categorized as having acute cholecystitis. Sixteen (2.7%) patients were diagnosed with acalculous cholecystitis. 178 patients (34.6%) had prior history of major abdominal surgery. The incidence of common bile injury was 0.0%. The incidence of bile leak was 0.0%. Eight patients (1.3%) required percutaneous drainage of an intraabdominal abscess within one month of surgery. No patients required conversion to open cholecystectomy (0.0%)

- Conclusion: Robotic assisted cholecystectomy in patients with acute cholecystitis resulted in improved patient outcomes when compared to traditional complication rates for LC. Laparoscopic cholecystectomy is the most common abdominal surgical procedure in the U.S. with approximately 750,000 performed annually. Statistically, complication rates for bile leak, common bile duct injury and conversion to open cholecystectomy remain relatively low for patients with acute cholecystitis undergoing LC, but the overall volume still affects thousands of individual patients annually. The technical advantages conferred by the 3D Hi-definition visual system and endowrist instrumentation allows for a better visualized, more precise means of performing cholecystectomy in patients with difficult exposure and access due to acute inflammatory state and/or the presence of surgical comorbidity. Larger prospective studies are needed to further substantiate these findings.