Impact of COVID-19 on Patients Undergoing Cholecystectomy

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INTRODUCTION

Cholecystectomy is one of the most commonly performed operations in the United States and worldwide. It is considered the gold-standard procedure for both emergent conditions such as acute cholecystitis and non-emergent conditions such as symptomatic cholelithiasis.[1] The COVID-19 pandemic has resulted in significant changes to daily medical operations, particularly to non-emergent elective surgical procedures. Considering the delays and cancellations of non-emergent cholecystectomies, we sought to characterize the impact of COVID-19 on patients undergoing these procedures at a single institution.

OBJECTIVE

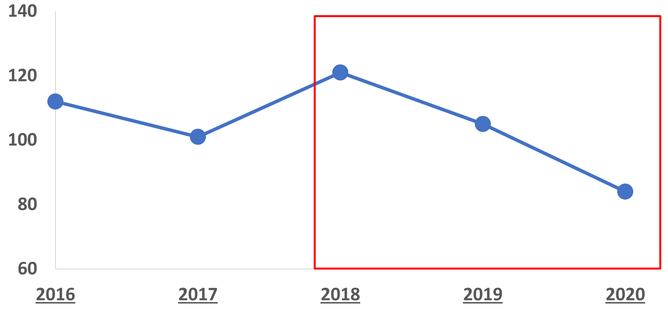
The purpose of this study was to review the impact of the COVID-19 pandemic on patients undergoing cholecystectomies during the year 2020 by comparing their preoperative diagnoses, surgical approaches, and surgical outcomes to their counterparts who underwent these surgeries in 2019.

METHODS

- **Study population:**
  - Patients presenting with symptomatic cholelithiasis (biliary colic), acute or chronic cholecystitis, gallstone pancreatitis, choledocholithiasis or any other gallbladder related pathologies
  - Patients who underwent a cholecystectomy as an index operation from 2016 through 2020.
- Cholecystectomy was defined as removal of the gallbladder through open, laparoscopic, or robot-assisted methods with or without use of intra-operative cholangiogram (either with ICG dye or with contrast media under fluoroscopy).
- Patients who met inclusion criteria were identified using the ORControl™ software.
- **Data** was collected on patient demographics, preoperative diagnoses, laboratory studies, imaging modality use, and consult placement for operations performed **between 2019 and 2020**. The postoperative course including length of stay, complications, and 30-day readmission rates were also examined.

RESULTS

- Fewer cholecystectomies were performed in 2020 compared to previous years.



- Comparing patients between 2019 and 2020,
  - In 2019, most common preoperative diagnoses were symptomatic cholelithiasis (50%), acute cholecystitis (22%), chronic cholecystitis (10%)
  - In 2020, symptomatic cholelithiasis was only 32%, followed by acute cholecystitis (27%), choledocholithiasis (10%), gallstone pancreatitis (8%)
- The median age of patients was similar but slightly younger in 2020 (58 vs 61-year-old).
- The rate of minimally invasive surgical (MIS) approach remained the same at 98% during the study period despite concerns of viral transmission through aerosolized CO_2 or surgical smoke produced during MIS.[2]
  - Conversion rates from laparoscopic to open remained similar between 2019 (4%) vs 2020 (5%) with no conversion from robotic approach.
- Same-day discharge rate was lower in 2020 compared to the rate in 2019 (26% vs 40%).
- The readmission rate within 30 days from the date of operation was similar between 2020 and 2019 (6% vs 5%).

	2019	2020
Number of patients	105	84
Median age (years)	61 (29 - 90)	58 (28 - 86)
MIS approaches	103 (98%)	82 (98%)
Laparoscopic	68 (65%)	55 (65%)
Robotic	32 (30%)	24 (29%)
Lap to open	3 (4%)	3 (5%)
Robotic to open	0	0
Same day discharge	42 (40%)	22 (26%)
30-day readmission	6 (6%)	4 (5%)

CONCLUSION

- The overall number of cholecystectomies performed was less in 2020 compared to previous years as expected due to COVID-19 pandemic consistent with findings in literature.[3]
- The COVID pandemic did not impact surgical approach intraoperatively.
- The same day discharge rate was lower in 2020 likely from increased severity of pathology, influenced by delayed procedures resulting in more complicated intra-op findings.

FUTURE DIRECTIONS

We will examine further the rate of same-day discharge in 2020 compared to previous years focusing on intra-operative variables and post-operative complications to validate our hypothesis of surgical delays and cancellations resulting in more complicated intraoperative findings.

REFERENCES

1. Chatterjee S, Bethineedi D. The surgeon's dilemma: Performing cholecystectomy during COVID-19 [published online ahead of print, 2021 Sep 21]. *Surgery*. 2021;S0039-6060(21)00886-2.
2. Tommaselli GA, Grange P, Ricketts CD, et al.. Intraoperative Measures to Reduce the Risk of COVID-19 Transmission During Minimally Invasive Procedures: A Systematic Review and Critical Appraisal of Societies' Recommendations. Surg Laparosc Endosc Percutan Tech. 2021 Jul 28;31(6):765-777
3. Mattingly AS, Rose L, Eddington HS, et al. Trends in US Surgical Procedures and Health Care System Response to Policies Curtailing Elective Surgical Operations During the COVID-19 Pandemic. *JAMA Netw Open*. 2021;4(12):e2138038.

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