Ulutas Med J 2022;8(2):79-81
DOI: 10.5455/umj.20220223101341

ORIGINAL ARTICLE OPEN ACCESS

Management of Acute Cholecystitis in COVID-19

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Introduction: The COVID-19 pandemic has affected the Turkish National Health System on many different levels, causing a complete reorganization of surgical services. The study analyzed the management of acute cholecystitis.
Materials and Methods: We analyzed all patients admitted to our Emergency Department for Acute cholecystitis between February 1, 2020, and December 31, 2021, and graded each case according to the 2018 Tokyo Guidelines. All patients were tested for SARS-CoV-2 positivity and received initial conservative treatment. We focused on patients who underwent cholecystectomy during the acute phase of the pandemic and subsequent disease.
Results: The mean age of our patients was 56 (range: 38-79), male patients were 20 (43%) and female patients were 26 (57%). Patients were classified according to TG-18: 11 grade I, 20 grade II, and 15 grade III.
6 patients tested positive for SARS-CoV-2 and were admitted to the Internal Medicine COVID ward, where they were treated conservatively (antibiotics, fluid resuscitation, and bowel rest). This procedure improved the clinical picture and the patient was discharged 5 days after the nasopharyngeal swab test was negative. In SARS-CoV-2 negative patients, complete resolution of AC was achieved with antibiotic therapy alone in 30 of 40 cases (75%). Laparoscopic cholecystectomy (LC) was performed in 5 patients (12%) with low surgical risk (ASA 1-2) after the first antibiotic treatment. Emergency cholecystectomy was performed in 6 patients (13%) from SARS-CoV-2 negative patients, according to the severity of TG-18 AC.
Conclusion: Percutaneous gallbladder drainage was shown to be an effective and safe treatment during the SARS-CoV-2 epidemic. Although many centers had to prefer non-surgical methods in the treatment of acute cholecystitis, we did not turn to alternative treatments because there was no emergency surgery restriction in our hospital. This approach has allowed us to precisely treat patients, thus helping to reduce the burden on the healthcare system.
Keywords: COVID-19, acute cholecystitis, cholecystectomy

Introduction

Globally, there were 85.929.428 confirmed COVID-19 in January 2021, including 1.876.100 deaths, reported to WHO (1, 2). The first Turkish case has been notified on the 11th of March 2020. After that, the infection rapidly spread throughout Turkey and we are currently counting a total of over 12 million confirmed cases with over 80000 deaths (2). Among Turkish regions, a large concentration of COVID-19 patients was in Istanbul and surrounding provinces. our Emergency Department (ED) has been quickly re-adapted to face the incoming crisis. The majority of human and economic resources were allocated for the symptomatic patients' care in the ED. The activity of the

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Received: Feb 5, 2022 **Accepted**: May 3, 2022
Published: June 9, 2022

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The Ulutas Medical Journal © 2022

different surgical specialties was temporarily reorganized by incorporating the urgent and oncologic cases of all surgical branches into one single common ward. Although there was no disruption in health services during the pandemic, there was a significant decrease in elective surgery due to restrictions (3, 4)

In our study, we retrospectively analyzed our treatment strategy for acute cholecystitis (AC) and how it was affected during the COVID-19 pandemic in our hospital.

Materials and Methods

We obtained the medical records of all patients diagnosed with Acute Cholecystitis (AC) admitted to the hospital between January 1, 2017, January 31, 2020, February 1, 2020, and December 31, 2021. We rated the severity of each AC according to the 2018 Tokyo Guideline (TG-18) (3). We also estimated the risk of SARS-CoV-2 infection by taking a history of COVID-19 symptomatology and possible contact with infected cases. In addition, all patients were tested for SARS-CoV-2 with a nasopharyngeal swab. Regarding the standard indications provided by the Tokyo Guideline, we presented COVID as a variant due to force majeure: In the case of SARS-CoV-2 positivity, patients were admitted to wards reserved for COVID and treated conservatively. Otherwise, if the naso-pharyngeal swabs are negative, we chose the conservative strategy or surgery according to the Tokyo 2018 approach.

Cholecystectomy according to TG-18 was recommended when antibiotic therapy failed. Finally, bedside percutaneous cholecystostomy (PC) was planned as an alternative for patients who did not benefit from antibiotic therapy but were thought to be unsuitable for surgery. Emergency cholecystectomy was performed in gallbladder perforation.

Results

In the initial phase of the COVID-19 pandemic, we observed 46 patients presenting to the emergency room for AC. The mean age of our patients was 56 (range: 38-79), male patients were 20 (43%) and female patients were 26 (57%). Patients were classified according to TG-18: 11 grade I, 20 grade II, and 15 grade III.

Six patients tested positive for SARS-CoV-2 and were admitted to the Internal Medicine COVID ward, where they were treated conservatively (antibiotics, fluid resuscitation, and bowel rest). This procedure improved the clinical picture and the patient was discharged 5 days after the nasopharyngeal swab test was negative. In SARS-CoV-2 negatives, complete resolution of AC was achieved with antibiotic therapy alone in 30 of 40 (75%). Laparoscopic cholecystectomy (LC) was performed in 5 patients (12%) with low surgical risk (ASA 1-2) after the first antibiotic treatment. Emergency cholecystectomy was performed in 6 patients (13%) from SARS-CoV-2 negative patients, according to the severity of TG-18 AC. The success rate of emergency cholecystectomy was 75% and the mean hospital stay after the procedure was 7 days (± 2 days). 2 patients, the patient was followed up in the emergency intensive care unit due to a persistent septic condition after surgery. One of the 1 patient who underwent cholecystectomy experienced a sudden complication (transient parietal hemorrhage) requiring conservative treatment (blood transfusion and endovenous tranexamic acid infusion). Due to the development of cholecystitis and cholangitis, 12 patients (30%) required readmission after medical treatment; patients were treated conservatively

Discussion

The first acute phase of the SARS-CoV-2 epidemic (February-April 2020) had an impact on elective and emergency surgical care around the world. Preliminary Chinese data reported that asymptomatic COVID-19-positive patients undergoing early surgery develop pneumonia with an increased global death rate and adverse clinical outcomes (4). For this

reason, most elective surgeries, those requiring intensive care support, were postponed.

Our surgery departments were completely reorganized: Emergency and oncological cases of all surgical branches (general, vascular, ear nose and throat, maxillofacial surgery, urology, and thoracic surgery) were gathered into a single surgical service. Final surgery was postponed while chamber offered neoadjuvant treatments to oncological patients at high risk for COVID-19 complications (the elderly with many comorbidities). Initially, there was a lack of evidence and guidelines regarding the management of patients presenting to the emergency with acute surgical pathologies. On the other hand, some surgical associations only later released their position statements.

The Royal College of Surgeons Guidelines for General Surgery (BIGSG) on COVID-19 stated that this should be followed during the COVID-19 pandemic where non-surgical management is possible (such as early appendicitis and acute cholecystitis) (5). BIGSG recommended either nonsurgical treatment or the use of a percutaneous cholecystostomy tube for the treatment of acute biliary disease (6). We performed laparoscopic cholecystectomy because we have a suitable operating room instead of performing wig-like cholecystectomy. Thus, we reduced relapses by treating patients definitively.

Conclusion

Percutaneous gallbladder drainage is an effective and safe treatment and has therefore gained increasing relevance during the SARS-CoV-2 epidemic. Although many centers had to prefer non-surgical methods in the treatment of acute cholecystitis, we did not turn to alternative treatments because there was no emergency surgery restriction in our hospital. This approach has allowed us to precisely treat patients, thus helping to reduce the burden on the healthcare system.

Conflict of Interest

The author declares no conflict of interest.

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How to cite?
Mehmet Burak Dal. Management of Acute Cholecystitis in COVID-19. Ulutas Med J. 2022;8(2):79-81
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