

Review Article

Surgical Strategies for Gallbladder Disease in Cirrhotic Patients: A Comparison of Open versus Laparoscopic Cholecystectomy

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Author's Contribution

¹ Conception of study

¹ Experimentation/Study Conduction

¹ Analysis/Interpretation/Discussion

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In Pakistan, chronic liver disease is a serious health issue. Hepatitis B and C viruses are the most frequent causes prevalent in Pakistan. One study indicates that 4.3% of people have hepatitis B surface antigen seropositive status and 6% have hepatitis C antibody seropositive status. As a result, the number of people who eventually have cirrhosis rises.¹ Patients with cirrhosis may develop gallstones because of hemolysis, enlarged spleen, decreased biliary acidity, decreased gall bladder function, metabolic liver disease, and increased secretion of unconjugated bilirubin because of increased viral hepatitis and chronic liver disease. Due to this, the number of patients requiring surgery who have cirrhosis and symptomatic gallstones has grown.²⁻⁵ The frequency of gallstones in liver cirrhosis patients is at least twice that among the general population, ranging between 25 and 30 percent, and it often appears following a prolonged period of cirrhosis. Cholecystectomy

is thus the most typical surgical technique used on patients with cirrhosis but with known complications such as post-operative hemorrhage, liver failure, renal failure, infection after surgery, and poor wound closure.⁶⁻⁸ Patients with cirrhosis and symptomatic gallstone disease also were reluctant to have elective cholecystectomy due to the higher risks. As a result, there was a consensus that only those with symptomatic gallstone surgery are recommended.^{9,12-18}

One of the key factors in determining the best course of treatment, i.e., whether to opt for open cholecystectomy or laparoscopic cholecystectomy, is the severity of cirrhosis, which is determined using the Child-Pugh classification.⁹ The conventional therapy for symptomatic gallstones before the development of laparoscopy was open cholecystectomy, which had disastrous postoperative consequences. The advent of less invasive surgery has made cholecystectomy a technique that even patients with cirrhosis may undergo. The Child-Pugh class is a major factor in postoperative complications, with class C patients experiencing the highest levels of these problems.¹⁷

According to a study by Francesca et al., for patients with symptomatic gallbladder lithiasis and severe liver cirrhosis, especially Child-Pugh (C-P) score A and B; laparoscopic cholecystectomy (LC) is regarded as a safe, gold-standard surgery.¹⁰ The topic of whether cirrhotic patients could benefit from this less intrusive technique has come up since the advent of LC. It is commonly recognized that in comparison to open cholecystectomy, laparoscopic surgery (LC) enables noncirrhotic patients to experience shorter hospital stays and operating periods, quicker postoperative rehabilitation, fewer wound problems, and lower overall expenses.¹⁹⁻²² In 2003, Puggioni and Wong²² carried out a meta-analysis comprising studies of patients with cirrhosis who underwent laparoscopic cholecystectomy. They concluded that there are several benefits of using the laparoscopic technique for cholecystectomy, including less blood loss, a faster recovery period, and shorter hospital stays. On the contrary, compared to non-cirrhotic patients, cirrhotic patients had a greater index of conversion to open surgery, longer operation times, more severe bleeding, and higher morbidity rates, even though LC is a safe technique. Similarly, according to some findings in 2023, LC is considered a realistic and generally safe treatment option for cirrhotic patients who have symptomatic gallstones. Even yet, compared to individuals without cirrhosis, the surgery is still extremely challenging and complex, and it is associated with a large morbidity,

particularly bleeding complications.^{23,24}

A study finding by El-Awadi et al. has verified that, for most patients with Child classes A and B and symptomatic gallstone disease, LC is a safe surgical technique. The benefits of LC include shorter anesthesia and surgical times, shorter hospital stays, less blood loss, and fewer problems during and after surgery. The process is still rather intricate and challenging, which is associated with a higher rate of morbidity than in individuals without cirrhosis. But to get these benefits for individuals suffering from cirrhosis, this treatment should only be carried out by a skilled laparoscopic surgeon.²⁵ In addition to that the study by Currò et al. found that patients with acute cholecystitis who had Child-Pugh grade C cirrhosis were able to benefit from such as the implantation of a percutaneous cholecystostomy tube; because of its increased safety and relatively low morbidity, this technique has been thought of for several years as the treatment of choice for reducing infectious complications and alleviating the symptoms of acute cholecystitis¹⁸.

Hence concluding that an elective LC being the safest of all should be considered for every patient with Child class A and B cirrhosis having symptomatic gallstone provided that the procedure is performed by a highly skilled laparoscopic surgeon and for those patients with Child class C cirrhosis and other treatment approaches such as implantation of a percutaneous cholecystostomy tube should be opted.

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