

## MANAGEMENT OF ASYMPTOMATIC CHOLELITHIASIS: COMPARATIVE EVALUATION BETWEEN EXPECTANT OBSERVATION AND SELECTIVE LAPAROSCOPIC CHOLECYSTECTOMY

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**Abstract:** Goal: To evaluate and compare the available evidence on management strategies for asymptomatic cholelithiasis, investigating the benefits, risks and challenges of expectant observation compared to cholecystectomy. Methodology: A bibliographic review was carried out using the PubMed database. Search terms included “Asymptomatic cholelithiasis” and “Conservative management,” among other relevant combinations. Nine articles were selected for detailed analysis. Results: The review pointed out that continuous monitoring of patients with asymptomatic cholelithiasis is essential due to the annual risk of developing serious complications. Selective laparoscopic cholecystectomy has been shown to be effective in high-risk subgroups of patients. An individualized approach is recommended in managing these patients, highlighting the need for additional research to refine clinical practices. Final considerations: It is crucial to prioritize continuous clinical monitoring and careful selection of patients for selective laparoscopic cholecystectomy.

**Keywords:** Cholelithiasis, Asymptomatic, Cholecystectomy.

## INTRODUCTION

With technological advances and the increasing use of imaging tests, diagnoses of asymptomatic cholelithiasis have become significantly more frequent, especially in cases of nonspecific abdominal complaints (Supe, 2011). Studies indicate that around 70% of individuals diagnosed with cholelithiasis remain asymptomatic throughout their lives. Differentiating between symptomatic and asymptomatic conditions is complex, as symptoms can be subtle or unclear (Fujita et al., 2021).

Risk factors for developing cholelithiasis include age over 40 years, female sex, obesity, Caucasian ethnicity, and history of multiple births. Other factors such as dyslipidemia,

eating habits, previous gastrointestinal surgeries and bariatric surgery are also relevant to the risk of this condition (Fujita et al., 2021). Cholelithiasis is commonly associated with symptoms such as pain in the upper quadrant of the abdomen, dyspepsia and biliary colic, the latter characterized by continuous pain of prolonged duration (Supe, 2011).

Before the advent of minimally invasive techniques, open cholecystectomy was frequently used in symptomatic patients or those with complications. However, the introduction of laparoscopic cholecystectomy, considered the gold standard in the treatment of cholelithiasis, has reignited debates about the most appropriate approach for asymptomatic patients. The discussion focuses especially on evaluating the advantages of performing cholecystectomy, considering that postoperative morbidity is reduced, but comparative mortality between expectant and surgical approaches remains (Supe, 2011).

This scenario presents a relevant clinical dilemma and highlights the need to review and synthesize current evidence on management strategies between expectant and surgical management, particularly cholecystectomy, in the management of asymptomatic cholelithiasis. The objective of this literature review is, therefore, to investigate the most effective practices and the evidence that supports each approach, seeking to guide clinical decisions based on a careful analysis of the available treatment options.

## METHODOLOGY

This narrative bibliographic review was designed following the PICO methodology, adapted to include: Population or research problem (patients with asymptomatic cholelithiasis), Intervention (cholecystectomy surgery), Comparison (expectant observation), and Outcome (effectiveness of approaches).

The guiding question defined was: “What is the most effective approach for asymptomatic cholelithiasis: expectant observation or cholecystectomy surgery?”

The search for relevant literature was carried out in the PubMed - MEDLINE (Medical Literature Analysis and Retrieval System Online) database, using the terms “Asymptomatic cholelithiasis” and “Conservative management”, combined with the Boolean operators “AND”, “OR”, and “NOT”. This initial search strategy identified 28 articles.

The stipulated inclusion criteria were articles in English, published between 2007 and 2024, which discussed the topics of interest, including reviews, meta-analyses, and observational studies, all available in full. The exclusion criteria removed duplicate articles, publications only in summary format, and those that did not directly address the proposed question or that did not meet the other inclusion criteria.

After thoroughly applying the inclusion and exclusion criteria, the number of articles was reduced to 6. These were selected to form the study’s analysis base, available in the PubMed database. This methodology allowed for a detailed and comparative analysis between expectant observation and surgical intervention in the management of asymptomatic cholelithiasis, providing an informed view on the effectiveness of approaches based on current scientific evidence.

## DISCUSSION

### STRATEGY FOR MONITORING AND ASSESSMENT OF ASYMPTOMATIC CHOLELITHIASIS OVER TIME

It is crucial to emphasize that individuals diagnosed with asymptomatic cholelithiasis have a 1-3% annual risk of developing severe symptoms or complications, such as acute cholecystitis, cholangitis and acute pancreatitis. Often, before these complications arise, the patient may experience milder symptoms or episodes of biliary pain. Therefore, continuous clinical monitoring of these patients has proven to be a beneficial practice (Fujita et al., 2021).

Fujita et al. (2021) also point out that, according to recent studies, in a ten-year follow-up, around 22% of patients with asymptomatic cholelithiasis who did not undergo surgery developed clinical manifestations or complications resulting from the condition. Furthermore, it is noteworthy that age is a factor that can increase the likelihood of developing symptoms related to cholelithiasis.

According to Supe (2011), certain comorbidities in patients with asymptomatic cholelithiasis can increase the risk of them becoming symptomatic. In this context, the decision between conservative treatment and prophylactic cholecystectomy must be based on a careful analysis of risks and benefits, aiming at therapeutic efficacy. It is important to highlight that laparoscopic cholecystectomy, due to its safety and technological advances that have significantly reduced associated morbidity and mortality, is only performed in patients whose clinical conditions justify the procedure.

Sen and Turkçapar (2023) mention the conservative treatment applied to patients undergoing bariatric surgery due to obesity, highlighting the increase in cholesterol

secretion in bile due to rapid postoperative weight loss. It was observed that only 2.4% of patients developed symptoms or complications related to cholelithiasis in a period of 17 months of post-surgery follow-up.

Kao, Flowers, and Flun (2005) discuss the management of asymptomatic cholelithiasis in patients undergoing solid organ transplants, which may include both prophylactic cholecystectomy (pre- or post-transplant) and expectant management. It is noteworthy the absence of a standardized guideline for treatment after the incidental detection of gallstones.

Therefore, considering current evidence and practices, expectant management with regular clinical follow-up emerges as a favorable cost-effective strategy for global public health. This conservative treatment, compared to prophylactic cholecystectomy, is considered more appropriate for the therapeutic management of patients with asymptomatic cholelithiasis. However, prophylactic cholecystectomy must be reserved for specific cases, such as in patients with hemolytic disorders, where the risk of complications is increased (Supe, 2011).

### **EVALUATION OF SURGICAL PROCEDURES FOR GALLBLADDER REMOVAL IN PATIENTS WITH ASYMPTOMATIC CHOLELITHIASIS**

The diagnosis of asymptomatic cholelithiasis has become more frequent, attributed to the increased use of abdominal ultrasound in the evaluation of patients with nonspecific abdominal symptoms. It is estimated that between 10 to 20% of the population in Western countries has gallstones, with approximately 50 to 70% of these individuals being asymptomatic at the time of diagnosis. The central concern in the management of asymptomatic cholelithiasis is the potential

development of serious complications, such as necrotizing pancreatitis or acute suppurative cholangitis. However, studies indicate that the transition to a symptomatic form of the disease occurs in only 10% to 25% of cases. Thus, the management of incidental gallstones represents a significant challenge due to the paucity of robust evidence supporting the benefits of cholecystectomy in these patients (Sakorafas; Milingos; Peros, 2007). Surgical treatment options for patients with asymptomatic cholelithiasis include laparoscopic cholecystectomy, considered the gold standard due to its safety and effectiveness. The laparoscopic technique offers significant advantages compared to the open approach, such as shorter hospital stays, reduced need for postoperative analgesia, better aesthetic results, rapid resumption of daily activities and lower risk of long-term complications such as hernia incisional. However, it may be necessary to convert to open cholecystectomy in cases where laparoscopic surgery is unfeasible for reasons such as extensive peritoneal adhesions from previous surgeries or difficulties in identifying essential anatomical structures (Sakorafas; Milingos; Peros, 2007).

In relation to asymptomatic cholelithiasis, therapeutic alternatives vary between expectant management and cholecystectomy, preferably laparoscopic. Most studies suggest that elective cholecystectomy is not indicated for asymptomatic patients, although some argue in favor of this practice due to the safety and effectiveness of the procedure. However, this approach can lead to excessive medicalization, contradicting the principles of quaternary prevention that aim to protect patients from unnecessary interventions (Sakorafas; Milingos; Peros, 2007).

Selective laparoscopic cholecystectomy constitutes a strategic approach in the management of asymptomatic cholelithiasis,

particularly applied to subgroups of patients at higher risk of becoming symptomatic or developing complications. There are specific criteria for selecting patients in this aspect, including the risk of malignancy, evidenced by the presence of gallstones associated with gallbladder polyps, calcified gallbladder (“porcelain” gallbladder) with a diameter of 1 cm, belonging to ethnic groups or residence in regions with a high prevalence of gallbladder cancer associated with gallstones — such as American Indians, Mexican Americans, and populations from Colombia, Chile, Bolivia, and New Zealand Maori. Other indications include the presence of large gallstones ( $\geq 3$  cm), asymptomatic cholelithiasis concomitant with choledocholithiasis, patients undergoing transplantation (before or during the procedure) and chronic hemolytic conditions, such as sickle cell anemia (Sakorafas; Milingos; Peros, 2007).

Specifically, patients undergoing kidney or pancreas transplants who present with incidental gallstones are generally advised to follow a conservative approach, as recommended by Kao, Flowers, and Flun (2005). However, the situation differs for patients undergoing heart transplantation, in whom post-transplant prophylactic cholecystectomy is associated with a reduced risk of mortality due to biliary complications.

There are also relative indications for selective cholecystectomy, such as in patients with a life expectancy of more than 20 years, stones from 2 cm to less than 3 mm in diameter, patent cystic duct, non-functioning gallbladder, diabetes mellitus and vague dyspeptic symptoms in the presence of gallstones. Furthermore, the presence of stones in the common bile duct in patients with asymptomatic cholelithiasis significantly increases the risk of serious complications (up to 50%), reinforcing the indication for selective cholecystectomy. This

intervention is also considered for patients residing in remote areas, far from adequate medical facilities, where the management of potential complications could be problematic (Sakorafas; Milingos; Peros, 2007).

Studies also discuss incidental concomitant cholecystectomy during other abdominal operations, which may be contraindicated in specific situations, such as the presence of prosthetic material. Despite the lack of consensus, cholecystectomy during procedures such as laparoscopic sleeve gastrectomy is generally advised against due to the increased risk of gallstone formation and prolonged operative time (Sen; Turkçapar, 2023).

Cholecystectomy may be considered in specific situations during the treatment of patients with midgut carcinoid tumors, particularly in those undergoing therapy with somatostatin analogues. These medications are associated with adverse effects such as gallbladder dysfunction, gallstone formation, and cholecystitis. However, prophylactic cholecystectomy is not recommended unless the patient is already scheduled for a laparotomy. The indication for cholecystectomy becomes more emphatic if the patient has liver metastases and is scheduled for procedures such as ablation or embolization of the hepatic artery, situations in which removal of the gallbladder can reduce the risk of serious biliary complications (Norlén et al., 2010).

## FINAL CONSIDERATIONS

Considering the risks associated with asymptomatic cholelithiasis and the potential development of serious complications such as acute cholecystitis, cholangitis and acute pancreatitis, it is essential to adopt management strategies that balance the benefits and risks of surgical interventions. Selective laparoscopic cholecystectomy is a strategic option for

patients with specific risk criteria, such as large gallstones or choledocholithiasis, offering faster postoperative recovery and less morbidity. For asymptomatic low-risk patients, expectant management with regular clinical monitoring may be more appropriate, avoiding the risks of surgery when benefits

are not evident. The decision on the management of asymptomatic cholelithiasis must be individualized, considering a detailed analysis of the risk factors and benefits of each therapeutic approach, and taken together with the patient to ensure the best clinical outcomes and quality of life in the long term.

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