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A Retrospective Study on Post-Cholecystectomy Syndrome Following Minimally Invasive Surgery

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Abstract: ***Background: Laparoscopic cholecystectomy has become the gold standard for treating symptomatic gallstones. However, a subset of patients continues to experience post - cholecystectomy syndrome (PCS), a condition characterized by persistent abdominal symptoms following gallbladder removal. Objective: To analyze the incidence, clinical presentation, and possible etiological factors of PCS following minimally invasive surgery. Methods: A retrospective observational study was conducted on 200 patients who underwent laparoscopic cholecystectomy from January 2020 to December 2023. Data was collected from hospital records and follow - up visits. Patients presenting with PCS symptoms at 6 months or more postoperatively were included for evaluation. Results: Of the 200 patients, 28 (14%) developed PCS. The most common symptoms were dyspepsia (46.4%), upper abdominal pain (32.1%), and bloating (21.4%). The majority of cases (71.4%) occurred within the first year post - surgery. Common etiologies included biliary dyskinesia (25%), retained common bile duct stones (21.4%), and sphincter of Oddi dysfunction (17.8%). Ultrasonography and MRCP were instrumental in diagnosis. Medical management was effective in 67.8% of the cases, while 32.1% required endoscopic or surgical intervention. Conclusion: PCS remains a significant postoperative concern even after minimally invasive surgery. Early identification and management of underlying causes can reduce long - term morbidity. Further prospective studies are recommended to refine diagnostic protocols and preventive strategies.***

Keywords: Post - cholecystectomy syndrome, laparoscopic cholecystectomy, biliary dyskinesia, sphincter of Oddi dysfunction, minimally invasive surgery.

1. Introduction

Cholelithiasis is a common biliary disorder, and laparoscopic cholecystectomy is the preferred surgical approach due to its reduced postoperative morbidity and faster recovery. However, a subset of patients experiences persistent symptoms postoperatively, commonly referred to as post - cholecystectomy syndrome (PCS), which includes a wide array of gastrointestinal and biliary complaints.

2. Objectives

This study aims to:

- Evaluate the prevalence of PCS after minimally invasive surgery.
- Identify common clinical features and etiologies.
- Assess the outcomes of various management strategies.

3. Materials and Methods

- Design: Retrospective observational study.
- Sample Size: 200 patients.
- Duration: January 2020 to December 2023.
- Inclusion Criteria: Patients undergoing laparoscopic cholecystectomy with follow - up of at least 6 months.
- Exclusion Criteria: Open surgeries, patients with incomplete records, or pre - existing gastrointestinal diseases.

Data was extracted from patient files, operative notes, and follow - up records. PCS was defined based on persistent symptoms attributable to biliary or upper gastrointestinal causes after surgery.

4. Results

- Incidence of PCS: 14% (28 out of 200 patients).
- Age Distribution: Mean age was 42.6 ± 10.3 years.
- Gender: Female predominance (64.3%).

Symptoms:

- Dyspepsia: 46.4%
- Upper abdominal pain: 32.1%
- Bloating/flatulence: 21.4%

Onset:

- Within 6 months: 53.5%
- 6–12 months: 17.9%
- > 1 year: 28.6%

Etiological Factors:

- Biliary dyskinesia: 25%
- Retained CBD stones: 21.4%
- Sphincter of Oddi dysfunction: 17.8%
- Gastritis/GERD: 14.3%
- Idiopathic: 21.4%

Management Outcomes:

- Medical therapy: 67.8%
- ERCP with sphincterotomy or stone removal: 21.4%
- Surgical re - intervention: 10.7%

5. Discussion

PCS is multifactorial, often involving biliary, gastrointestinal, or psychosomatic components. This study highlights the relatively high prevalence even after minimally invasive approaches. The predominant symptom—dyspepsia—often

overlaps with non - biliary gastrointestinal disorders, complicating diagnosis. Diagnostic imaging (MRCP, USG) and functional studies (HIDA scan) are crucial.

6. Conclusion

Despite advancements in minimally invasive techniques, PCS remains a challenge. A thorough evaluation protocol and early intervention can significantly improve patient outcomes. A standardized approach involving gastroenterologists and surgeons is key to optimal management.

7. Recommendations

- Routine postoperative follow - up for at least 1 year.
- Use of MRCP in symptomatic cases.
- Multidisciplinary approach for complex PCS.

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