ISSN: 2581 – 3633
PubMed - National Library of Medicine - ID: 101745081

International Journal of Medical Science and Advanced Clinical Research (IJMACR)

Available Online at:www.ijmacr.com

Volume – 8, Issue – 3, May - 2025, Page No.: 134 – 140

The Atypical Gallbladder: Surgical Encounters with Tuberculosis, Carcinoma, and Migrated Stent

[1]Surya Priya, Department of General Surgery, Sri Ramachandra Institute of Higher Education and Research, Chennai, India

[2]Kumaresh Pandian, Department of General Surgery, Sri Ramachandra Institute of Higher Education and Research, Chennai, India

[2]Surendran Paramsivam, Department of General Surgery, Sri Ramachandra Institute of Higher Education and Research, Chennai, India

[2]Rajasenthil V, Department of General Surgery, Sri Ramachandra Institute of Higher Education and Research, Chennai, India

[2]Gautham Gunasekaran, Department of General Surgery, Sri Ramachandra Institute of Higher Education and Research, Chennai, India

[1]Muthurenganathan PL, Department of General Surgery, Sri Ramachandra Institute of Higher Education and Research, Chennai, India

[3]Manish Marlecha, Department of General Surgery, Sri Ramachandra Institute of Higher Education and Research, Chennai, India

Corresponding Author: Surya Priya, Department of General Surgery, Sri Ramachandra Institute of Higher Education and Research, Chennai, India.

How to citation this article: Surya Priya, Kumaresh Pandian, Surendran Paramsivam, Rajasenthil V, Gautham Gunasekaran, Muthurenganathan PL, Manish Marlecha, "The Atypical Gallbladder: Surgical Encounters with Tuberculosis, Carcinoma, and Migrated Stent", IJMACR- May - 2025, Volume – 8, Issue - 3, P. No. 134 – 140.

Type of Publication: Case Repot

Conflicts of Interest: Nil

Abstract

Background: Gallbladder diseases, although frequently underestimated, can pose significant clinical challenges due to their varied etiologies, which encompass infectious processes, neoplastic conditions, and complications resulting from obstructive phenomena. Among these conditions, tuberculosis of the gallbladderis a rare but clinically significant diagnosis that presents unique diagnostic challenges and may lead to severe complications. Synchronous gallbladder and pancreatic cancer is extremely rare. To the best of our knowledge, 1.2 cases per 100,000 populations per year. Migrated stent within the gallbladder is rare but significant complication that can arise from improper

placement or migration. This abstract aims to investigate the complexities surrounding these three conditions.

Objective: The primary purpose of this study is to delineate the clinical presentations, diagnostic challenges, management strategies, and outcomes relevant to tuberculosis of the gallbladder, gallbladder carcinoma and migrated stent.

Case Discussion: Tuberculosis of the Gallbladder: A 83 year old female with history of Pott's spine treated on 2020 complaints of abdomen pain came to ER , CECT abdomen showed features of a calculus cholecystitis, taken up for laparoscopic cholecystectomy in which the final biopsy report revealed features of xanthogranulomatous changes.

Carcinoma of Gallbladder: A 54 year old female with no comorbids came to ER with complaints of abdomen pain more over the right hypochondriac with jaundice. MRCP showed thickening of fundus of Gallbladder with satellite lesion, hence proceeded with biopsy which showed features of metastatic carcinomatous deposits suggestive of a primary from pancreaticobiliary.

Migrated stent: A 32 year old male with past history of cholecystectomy came to OPD with complaints of abdomen pain, USG abdomen showed features of acute calculus cholecystitis. Hence taken up for laparoscopic cholecystetctomy. Intraoperatively, a pigtail stent was seen passing through the liver into gallbaldder.

Results

Tuberculosis of the Gallbladder: The occurrence of tuberculosis affecting the gallbladder is exceedingly rare. Diagnostic imaging modalities, such as ultrasound and computed tomography (CT), may reveal gallbladder wall thickening, which can mimic neoplastic processes.

Carcinoma Gallbladder: Gallbladder carcinoma is often identified incidentally during surgical procedures performed for presumed benign conditions. Imaging studies-including ultrasound, CT, and magnetic resonance imaging (MRI)-are instrumental in staging the disease. Surgical resection remains the primary curative approach.

Migrated Stent: The retention of a stent within the gallbladder is a rare but significant complication that can arise from improper placement or migration. Diagnosis typically involves imaging modalities like ultrasound or CT scans. Management options include endoscopic removal via ERCP, or surgical intervention for symptomatic patients. Complications may include cholecystitis, biliary obstruction, and infection.

Conclusion

The emergence of technology represents a significant advancement in the palliative management of biliary obstruction, providing timely symptom relief for patients impacted by both benign and malignant gallbladder conditions. Greater awareness and understanding of these clinical complexities will promote the development of enhanced management strategies, ultimately improving patient outcomes.

Keywords: pancreatic-biliary cancer, case-series, laparoscopic cholecystectomy, retained stent, cancer gallbladder, gallbladder tuberculosis

Introduction

Gallbladder diseases represent a diverse spectrum of conditions that pose significant challenges in clinical practice. Among these, tuberculosis of the gallbladder is an exceedingly rare but noteworthy diagnosis, often overlooked in the differential considerations for gallbladder pathology. This condition typically manifests with nonspecific symptoms and can mimic more common diseases, such as gallbladder carcinoma, complicating timely diagnosis and appropriate

management.[1] Gallbladder tuberculosis, in an endemic region, is a common infectious etiology affecting a rare organ. Gallbladder carcinoma, in contrast, is one of the more prevalent malignancies of the biliary system and is characterized by its aggressive nature and poor prognosis, often presenting at an advanced stage due to asymptomatic progression. The unique intersection between gallbladder tuberculosis and carcinoma highlights the need for heightened awareness among clinicians, as misdiagnosis can lead to delays in management and poor outcomes. Synchronously occurring double cancers in the bilio-pancreatic system are rare. Prognosis in such conditions depends on whether the simultaneous lesion is a metastasis or a synchronous one. Metastatic disease, lymph node extension, peri- neural invasion, and involvement of cystic duct have been shown to be associated with poor prognosis. Additionally, the complications associated with these conditions can necessitate advanced interventions such as stenting to alleviate obstructive symptoms. Migrated stents in the gallbladder following placement for biliary obstruction present their own set of challenges, as they can contribute to persistent infection, stone formation, and other complications, complicating the therapeutic landscape. This introduction aims to provide a comprehensive overview of gallbladder tuberculosis and carcinoma, the clinical implications of retained stents, and the importance of distinguishing between these conditions for effective patient management. By enhancing our understanding of these diseases and their intricate interactions, we can better navigate the complexities of diagnosis and treatment, ultimately improving patient outcomes.

Materials and Methods

This study constitutes a descriptive analysis of three distinct cases that illustrate the clinical management and outcomes associated with gallbladder tuberculosis, gallbladder carcinoma, and migrated stents within the gallbladder. The research was conducted in accordance with the ethical guidelines established by the institutional review board. The cases reviewed pertain to patients treated at Sri Ramachandra Institute Of Higher Education And Research, Chennai, India between December 2024 and May 2025. Selection criteria included confirmed diagnoses and documented clinical presentations that underscore the complexities surrounding gallbladder diseases. A retrospective review of patient records was performed to gather the following data: Symptoms observed at the time of presentation, which included abdominal pain, jaundice, and other pertinent findings. Modalities utilized for diagnosis included Contrast-Enhanced Computed Tomography (CECT) and Magnetic Resonance Cholangiopancreatography (MRCP) to assess gallbladder pathologies. Results from biopsies and subsequent histological analyses that confirmed the diagnoses were thoroughly documented. All relevant clinical data, imaging studies, and histopathological reports were subjected to detailed analysis to evaluate clinical presentations, potential complications, and management results for each case. This comprehensive analysis contributed to a greater understanding of the complexities inherent in these gallbladder pathologies. This study adhered strictly to ethical standards concerning the treatment of human subjects. Informed consent was procured from the patients for the utilization of their data for educational and research purposes, as applicable. This methodological approach facilitated an

in-depth examination of the clinical strategies employed in managing gallbladder tuberculosis, carcinoma, and migrated stents, ultimately informing tailored management strategies that enhance patient care and outcomes.

Results

Case 1

An 83-year-old female with a history of Pott's spine completed Anti-Tubercular Treatment on 2020 presented to the emergency department with acute abdominal pain, vomitting, fever for 2 days. Labs revealed Hemoglobin - 10.5mg/dl, Total counts - 12810cells/cumm, Polymorphs -90.7, Liver function test - Total bilirubin -1.98mg/dl, Direct bilirubin - 1.19md/dl. The diagnostic imaging via Contrast-Enhanced Computed Tomography (CECT) revealed Acute cholecystitis with contained perforation. No obvious radiodense calculi seen. The patient subsequently underwent laparoscopic cholecystectomy under general anesthesia. Intraoperative findings showed biliary peritonitis with perforated gallbladder, pus of 30 ml, frozen Calot's triangle. Patient was kept nil per oral, continuous ryles tube drainage for two days, followed by liquid diet which she tolerated well. Hence processed on soft solid diet. GeneXpert revealed MTB- detected. Histopathological analysis of the excised gallbladder tissue revealed xanthogranulomatous changes, which warranted further investigation into the possibility of gallbladder tuberculosis as a contributing factor. CT thorax showed no features of pulmonary tuberculosis. Upon obtaining pulmonologist opinion, she was started on ATT. Patient came for follow up, with no further discomfort.

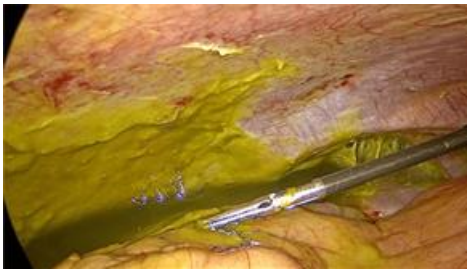

Figure 1: Case of contained gall bladder perforation with biliary peritonitis

Figure 2: Image showing sealed off perforation with frozen Calot’s triangle

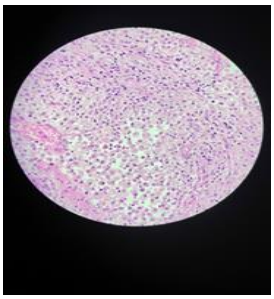

Figure 3: Histopathology showing Foamy macrophages; Hallmark features of xanthogranulomatous inflammation

Case 2

A 54-year-old female patient presented to OPD with right upper quadrant abdominal pain and yellowish discolouration of eyes, with constitutional symptoms of loss of weight and loss of appetite. Labs revealed Hemoglobin -10.5mg/dl, Total counts - 12490 cells/cumm. Polymorphs -70.7, Liver function test - Total bilirubin -8.99mg/dl, Direct bilirubin - 8.26 mg/dl. Magnetic Resonance Cholangiopancreatography (MRCP) demonstrated thickening of fundus of GB with lobulated lesion measuring 3.0 x 2.9 cm in the fundus of the Gall Bladder extending into the segment VB with

satellite lesion measuring 1.2 x 1.2 cm in segment V likely carcinoma Gall Bladder; Multiple enlarged Metastatic necrotic peripancreatic porta and precaval nodes . Serum CEA - 5.07ng/ml; Serum CA 19.9 - 22977(1 in 50 dilution) U/mL. PET CT showed FDG avid mural thickening at the fundus of gall, bladder with contiguous liver infiltration - suggestive of ge malignancy - for biopsy correlation periportal, para-aortic and left supraclavicular lymphadenopathy. Small FDG avid lesion in segment VIII of liver - suggestive of metastasis posterior mediastinal fdg avid deposits multiple small nodules in both lungs -- suggestive of metastasis. The patient underwent Ultrasound guided biopsy, and histopathological examination revealed features favour a metastatic carcinomatous deposit maybe suggestive of a primary from pancreaticobiliary with tutor cells positive for CK7,CK20,CK19,CEA. Negative for Glypican-3 and TTF 1 highlighting the critical importance of imaging in diagnosing malignancies of the biliary system. She was then planned for ERCP with Biliary SEMS, plastic stent deployed. Patient's symptomatic condition improved, hence she was planned palliative chemotherapy[2]. National Comprehensive Cancer Network has provided two options for GBC treatment: single-agent therapy, which is fluoropyrimidine or gemcitabine-based treatment, and multiagents regimen, which includes oxaliplatin, cisplatin, and capecitabine.

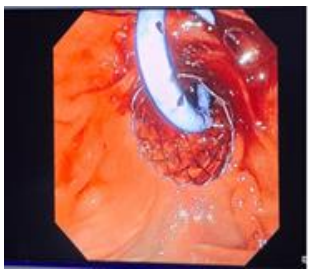

Figure 4: Case of gallbladder cancer intraoperative ercp-stent deployed

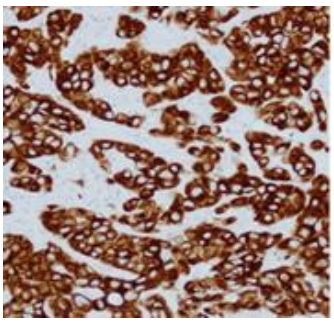

Figure 5: IHC SLIDE showing CK7 positive in tumour cells

Case 3

A 32-year-old male with a previous history of cholecystostomy, reported recurrent episodes of abdominal pain. An abdominal ultrasound indicated acute calculus cholecystitis. Labs showed total counts of 12,000 cells/cumm. During laparoscopic cholecystectomy, a migrated pigtail stent was discovered that had migrated to the gallbladder. Postoperative recovery was uneventful. The evaluation of all three cases underscored the diverse clinical presentations associated with gallbladder disease and the necessity for comprehensive diagnostic approaches.

The histopathological results further elucidated the varied nature of underlying pathologies, including the rare incidence of tuberculosis. Additionally, the identification and management of migrated stents in Case 3 illustrated the complications that can arise from prior surgical interventions, further emphasizing the need for thorough postoperative assessments.

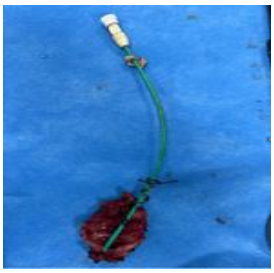

Figure 6: Image showing migrated stent found in gallbladder

Discussion

The cases presented in this study highlight the clinical complexities associated with gallbladder diseases, specifically focusing on gallbladder tuberculosis, gallbladder carcinoma, and issues related to retained stents. These scenarios underscore the importance of rigorous diagnostic evaluations and a nuanced understanding of the diverse pathologies that can affect the gallbladder.

1. Gallbladder Tuberculosis: The rarity of gallbladder tuberculosis, exemplified in Case 1, poses a significant challenge for clinicians. The presentation can closely mimic more common conditions, such as acalculus cholecystitis, which may lead to misdiagnosis and delayed treatment. Xanthogranulomatous changes, often mistaken for malignancy, necessitate careful histopathological examination to differentiate these conditions. This highlights the necessity for increased awareness among healthcare professionals regarding rare diseases, particularly in patients with a relevant medical history such as tuberculosis.
2. Synchronous Gallbladder Carcinoma and Pancreaticobiliary Carcinoma: The case of the 54-year-old female patient illustrates the aggressive nature of gallbladder carcinoma and the often late presentation of symptoms. Imaging techniques such as MRCP play a crucial role in the preliminary assessment, yet definitive diagnosis relies on histopathological evaluation. The findings from this case accentuate the need for vigilance in patients presenting with non-specific abdominal symptoms, particularly those that involve jaundice or biliary obstruction. The outcome of gallbladder carcinoma is poor, and the overall 5-year survival rate is less than 5%.[3] One of the known risk factors for gallbladder cancer is pancreaticobiliary maljunction, which is a congenital anomaly. This condition causes bile duct irritation from pancreatic juice and dysplastic changes in the bile duct mucosa. Pancreaticobiliary maljunction with or without bile duct dilatation is associated with carcinoma of the pancreaticobiliary tract.
3. Migrated Stents: The experience of the 32-year-old male patient showcases the complications associated with migrated stents following biliary interventions.[4] Foreign bodies like silk sutures, endo-clips, fish bone, retained T- tubes, plastic or metallic stents, etc. lead to biliary stasis leading to eventual stone formation. Such complications can lead to symptomatic distress, including pain and potential infection. The presence of a migrated stent in the gallbladder necessitates careful surgical exploration and management, emphasizing the importance of thorough postoperative assessments and follow-up care to prevent such occurrences. This also highlights the need for improved protocols around the management of stenting procedures in the context of gallbladder disease. Collectively, these cases underscore the value of a multidisciplinary approach in the management of gallbladder diseases. Collaboration among specialists in surgery, radiology, pathology, and infectious diseases is essential for accurate diagnosis and effective treatment planning. Continuous education and training for healthcare providers on the diverse presentations and underlying conditions of gallbladder pathologies can lead to improved patient outcomes. In conclusion, the complexity of gallbladder diseases, along with their varied clinical

presentations, necessitates a vigilant and informed approach from healthcare providers. Future studies should aim to further explore the diagnostic challenges and treatment protocols for these conditions, with particular emphasis on enhancing early detection and improving management strategies for patients with gallbladder tuberculosis, carcinoma, and retained stents.

Conclusions

This study presents a comprehensive analysis of three distinct cases of gallbladder diseases, highlighting the clinical challenges associated with gallbladder tuberculosis, gallbladder carcinoma, and complications related to retained stents. The diversity in presentations underscores the need for heightened awareness among clinicians regarding these conditions, particularly their potential to mimic one another and present with nonspecific symptoms. The findings emphasize the critical importance of employing advanced imaging modalities, such as CECT and MRCP, alongside thorough histopathological evaluations to ensure accurate diagnoses. Early detection remains paramount, especially in the context of gallbladder carcinoma, where delayed diagnosis can significantly affect patient prognosis. Additionally, the complications arising from migrated stents illustrate the necessity for meticulous postoperative care and follow-up. A multidisciplinary approach is essential for optimizing patient outcomes, as collaboration among various specialties enhances the potential for accurate diagnosis and effective treatment planning. In conclusion, this study underscores the complexities inherent in managing gallbladder diseases. By fostering an increased understanding of these conditions and their interactions, healthcare professionals can improve diagnostic accuracy, expedite treatment, and ultimately enhance patient care and outcomes. Future research should continue to explore these pathologies to further refine management strategies and address the existing gaps in knowledge and practice.

Acknowledgements

We would like to express our gratitude to all the healthcare professionals and researchers who contributed to the understanding and management of gallbladder diseases, particularly tuberculosis of the gallbladder and gallbladder carcinoma. Special thanks to the patients whose cases have provided valuable insights into these conditions. We also appreciate the support from our institutions and funding bodies that made this study possible. Your dedication to advancing medical knowledge and improving patient care is invaluable

References

1. Gallbladder tuberculosis camouflaging as gallbladder cancer - case series and review focussing on treatment. https:// doi.org/ 10.1177/ 2049936 116678589.
2. https://pmc.ncbi.nlm.nih.gov/articles/PMC4649107/.
3. https://pmc.ncbi.nlm.nih.gov/articles/PMC4202380/.
4. https://pubmed.ncbi.nlm.nih.gov/26500952/.