International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Gangrenous Cholecystitis Masquerading as Intestinal Obstruction, A Silent Killer

Dr. D. Ramesh [1], Dr. Goddanti Apoorva [2]

[1]Associate Professor, Upgraded Department of General Surgery, Osmania General Hospital, Hyderabad, Telangana State, India

[2]Postgraduate Resident, Upgraded Department of General Surgery, Osmania General Hospital, Hyderabad, Telangana State, India

Abstract: ***Gangrenous cholecystitis is a severe complication of acute cholecystitis, defined as necrosis of the gallbladder wall as a result of ischemia due to progressive vascular insufficiency. We present to you an unusual case of a 50 year old diabetic male who presented to the Emergency room with complaints of abdominal distension and obstipation for 8 days and on examination, his abdomen was tense with diffuse tenderness and sluggish bowel sounds. Routine blood workup and imaging was done-with lab parameters within normal range and Ultrasonography showing dilated small and large bowel loops with no transition point. Patient was managed conservatively initially, with a provisional diagnosis of Adynamic Intestinal obstruction, but deteriorated after 48 hours, following which he was scheduled for Exploratory Laparotomy-which revealed gangrenous gallbladder and significantly dilated small bowel loops with no mechanical cause of obstruction. This case therefore emphasizes the need for including gangrenous cholecystitis amongst the list of differentials for acute abdomen with normal lab values, and the course of management decided on a case-case basis.***

Keywords: Gangrenous cholecystitis, Adynamic Intestinal Obstruction, acute cholecystitis, asymptomatic gangrenous gallbladder

1. Introduction

Acute cholecystitis develops in 1 to 2 % of asymptomatic cholelithiasis, Gangrenous cholecystitis is a severe complication of acute cholecystitis [1]. A high index of suspicion is necessary for early diagnosis and treatment of gangrenous gallbladder. Studies show mortality of 22 % in patients who land up in sepsis as a sequelae of gangrenous cholecystitis and a complication rate of 16-25% is observed-Perforation and Peritonitis being the most grievous ones accounting for upto 10 % of complications [3].

The disease is commonly seen in Males; >50 years age; Dark skinned; Immunocompromised state and co-morbidities like Diabetes mellitus, Cardiovascular and Cerebrovascular diseases [1].

The present case is being presented because of its rarity as a cause of intestinal obstruction.

2. Case Presentation

A 50 year old male diabetic, presented to the ER with complaints of abdominal distension and obstipation for 8 days-diffuse colicky type pain, aggravated on food intake and relieved with enema. Patient was referred to our tertiary care center, in view of lack of improvement in symptoms.

History of one episode of non projectile, bilious vomiting, 4 days ago
No History of Blood in stools / Hematemesis / Fever / Jaundice
No History of Trauma
No History of similar complaints in the Past.
History of Left Hemiparesis, secondary to Cerebrovascular infarct present
Known case of Diabetes mellitus and Hypothyroidism-controlled with medication.
History of Coronary Artery Bypass Graft surgery-3 years ago

Smoker and Alcoholic, since 25 years

On Examinations, he was Afebrile with Pulse Rate of 100 per minute, Blood pressure of 140/90 mm of Hg and Per Abdomen-Tense, Diffuse tenderness present and no palpable mass, bowel sounds present. Per rectal examination was normal.

Routines	HB-13.2 g%
	WBC-10, 100 / mm3
	Platelets-2.9 lakh / mm3
	Serum Creat-0.70 mg/dl
	Serum K+-4.3 mmol/L
	Total Bilirubin-0.46 mg/dl*
	ALT-46 U/L*
	AST-47 U/L*
	ALP-148.84 U/L*
	Amylase-33 U/L
	Lipase-22 U/L
ABG	Lactate-10 mg/dL
	pO2-115 mmhg
	pH-7.43
	Hco3-28.3 mmol/l
	pCO2-31.9

Licensed Under Creative Commons Attribution CC BY

Imaging	**Ultrasonography:** Over distended gallbladder with sludge**.** Few dilated small bowel loops m/s 3.5 cm with to and fro peristalsis, and also dilated large bowel loops with minimal inter bowel free fluid. Suggestive of Intestinal Obstruction
	CT Plain Abdomen: Evidence of multiple dilated small and large bowel loops with multiple air fluid levels, largest diameter of Small bowel-4.2 cm; Large bowel-6.9 cm; Cecum-4 cm with no transition point. Gall bladder is over distended. No evidence of free fluid or air in peritoneal cavity. Suggestive of Adynamic Intestinal Obstruction.
Histopathology	Multiple sections studied from the cholecystectomy specimen show ischemic necrosis and thrombosed vessels. IMPRESSION-Features suggestive of gangrenous gallbladder.

*ALL THESE PARAMETERS ARE ESSENTIAL IN DIAGNOSIS OF CHOLECYSTITIS. WHICH UNUSUALLY WERE NORMAL IN THIS ATYPICAL CASE. (TOKYO CRITERIA 2018.)

Figure 1: Supine X Ray of Abdomen

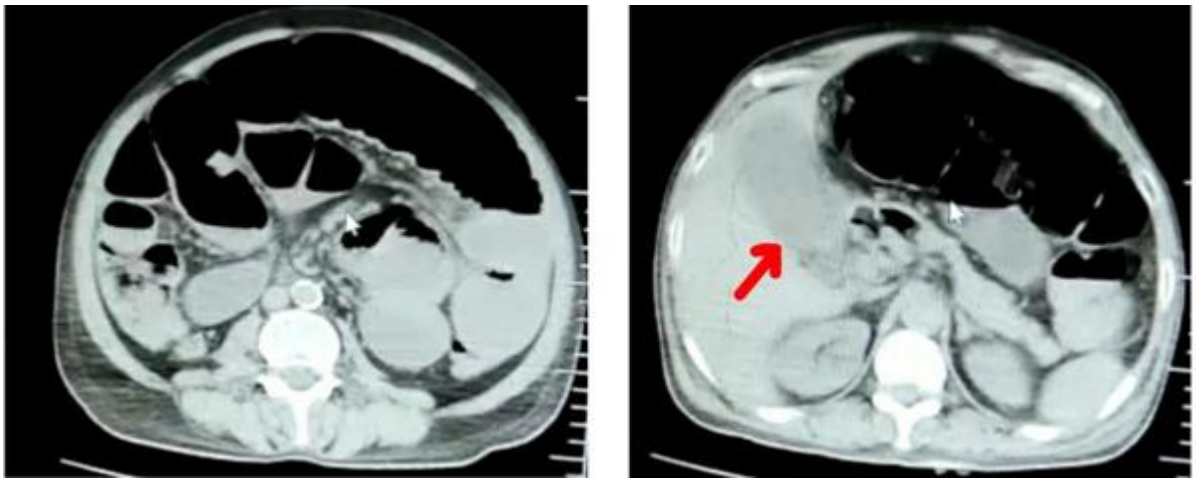

Figure 2: Dilated Small Bowel Loops and Overdistended Gallbladder

Initially the patient was managed conservatively for two days, by administering broad spectrum antibiotics, and flatus tube placement for adynamic intestinal obstruction. (fig 2) Patient had relief from abdominal distension but continued to show signs of toxemia such as tachycardia, and tachypnoea 48 hours after admission. On abdominal examination a vague ill-defined mass was palpated in right iliac fossa. Blood investigations still revealed parameters within normal range. Thus, the patient was planned for exploratory laparotomy.

Gangrenous gallbladder was incidentally discovered with inflamed omentum adherent to the gallbladder wall and with no other accompanying significant findings. (fig 3).

Patient underwent Total Cholecystectomy and total peritoneal lavage was done. Course in the ward was uneventful and the patient was discharged and followed up for 1 month.

Licensed Under Creative Commons Attribution CC BY

Figure 3: Intraoperative Picture Depicting Gangrenous Gallbladder

3. Discussion

Gangrenous cholecystitis is the inevitable progression of an acute cholecystitis in which infection, edema, bile stasis and ischaemia leads to gallbladder necrosis and eventually perforation. Incidence usually ranges from 2 to 29.6 % in older diabetics [1].

Intestinal obstruction is a very rare complication reported in Gangrenous cholecystitis, incidence almost less than 1 % and only in cases involving perforation and acute non gangrenous cholecystitis.
There is only (to the best of our knowledge) one single retrospective study, in the years of 1961 to 1989 [16], where the incidence of Intestinal obstruction at presentation in cases of Gangrenous gall bladders was 4 percent.

Pathologically, gangrenous change in acute cholecystitis is characterized by transmural acute inflammation and intramural abscess formation, secondary to obliteration of the cystic artery and/or sustained obstruction of the cystic duct [1, 2, 12]. The progression of the disease also depends on the time the patient seeks attention for his ailment. older individuals due to lack of awareness seek late admission which severely affects the prognosis [1, 2, 7].

Gangrenous cholecystitis is both a medical and surgical emergency if a physician can identify it in a timely manner. Studies show mortality of 22 % in patients who land up in sepsis as a sequelae of gangrenous cholecystitis and a complication rate of 16-25% is observed-Perforation and Peritonitis being the most grievous ones accounting for upto 10 % of complications [3].

High index of suspicion should be kept for the underlying risk factors as described by Contini et al (1) Age >51 years, WBC >15, 000 /mm3 (12), diabetes, Afro-American, elevated Total bilirubin, Serum ALT, AST, ALP and Lipase levels and Pericholecystic fluid [6, 3].

USG is the first line of investigation with sensitivity of 81 % to detect gangrenous changes in gallbladder (5). Gall bladder distension and increased wall thickness with lack of mural enhancement and periGB fluid collection is the most common finding [5]yet very non specific.

CT is the most specific modality with sensitivity of 94% to detect gangrenous cholecystitis [5, 8]. The features such as irregular protrusions in lumen, gas in wall or lumen (100%), irregulars or absent wall (97.6%) and abscess mural or periGB (96.6 %) are suggestive of gangrenous changes in gallbladder [4, 5]. However 28 % of patients had normal image findings [7], thus proving there is no single image modality specific for the pathology.

However presence of more than one of these findings, GB distension (short-axis diameter of ≥4 cm), Intra-luminal membranes, mural striation, absent, or decreased enhancement of GB wall suggests high probability of gangrenous change in setting of acute cholecystitis.

Complications of Gangrenous cholecystitis include:

1) Bacterial infections (Sepsis)-12%
2) Pulmonary complications, such as pleural effusion, ARDS etc-7%
3) GB Perforation and localAbscess formation.-6 %
4) Biliary enteric fistula-3 %
5) Gallstone ileus-less than 1 % (cause of mechanical small bowel obstruction-1 to 4 %)
6) Aggravation of pre-existing Medical illness and decompensation of the liver.

Our case report emphasizes this complication which can mask the original pathology that is Gangrenous cholecystitis. A high index of suspicion in elderly diabetics should lead to improved diagnostic accuracy of Gangrenous cholecystitis, thus reducing mortality and morbidity with early intervention.

4. Conclusion

Our case is unique due to its Atypical presentation of Gangrenous cholecystitis as Adynamic intestinal obstruction masquerading as the original pathology (fig 3). In Spite of its grave prognosis, its diagnosis can be elusive, both clinically and on laboratory investigation-justifying the title as silent killer. Thus pre operative assessment should be thorough in older diabetics, for early assessment and early surgical intervention whenever a patient presents with acute abdomen rather than just medical treatment alone. Mortality and Morbidity due to Gangrenous cholecystitis can be reduced if a high index of suspicion is maintained for each case presenting as Intestinal obstruction in elderly diabetic.

Acknowledgments

We sincerely appreciate the support given by Dr KARAN GUPTA (Postgraduate, M. S General Surgery) in completion of this article writing and Dr SHASHANKAR REDDY, (Postgraduate, M. S General Surgery) for intra operative assistance.

References

[1] S. Contini, D. Corradi, N. Busi, L. Alessandri, A. Pezzarossa, and C. Scarpignato, “Can gangrenous cholecystitis be prevented? A plea against a “wait and

Licensed Under Creative Commons Attribution CC BY

see" attitude, " *Journal of Clinical Gastroenterology*, vol.38, no.8, pp.710–716, 2004.
[2] Mentzer RM, Jr, Golden GT, Chandler JG, Horsley JS., 3rd A comparative appraisal of emphysematous cholecystitis. *Am J Surg.1*975; 129: 10–5.
[3] A. E. Falor, M. Zobel, A. Kaji, A. Neville, and C. de Virgilio, "Admission variables predictive of gangrenous cholecystitis, " *The American Surgeon*, vol.78, no.10, pp.1075–1078, 2012. View at:
[4] Y. Yamashita, T. Noritomi, N. Matsuoka et al., "Surgical treatment of acute cholecystitis, " *Masui*, vol.61, no.9, pp.944–952, 2012.
[5] G. L. Bennett, H. Rusinek, V. Lisi et al., "CT findings in acute gangrenous cholecystitis, " *The American Journal of Roentgenology*, vol.178, no.2, pp.275–281, 2002. View at:
[6] Tokyo Guidelines 2018: diagnostic criteria and severity grading of acute cholecystitis (with videos)
[7] D. R. H. Hunt and F. C. K. Chu, "Gangrenous cholecystitis in the laparoscopic era, " *Australian and New Zealand Journal of Surgery*, vol.70, no.6, pp.428–430, 2000. View at:
[8] J. A. Barakos, P. W. Ralls, S. A. Lapin et al., "Cholelithiasis: evaluation with CT, " *Radiology*, vol.162, no.2, pp.415–418, 1987. View at:
[9] Stefanidis D, Bingener J, Richards M, Schwesinger W, Dorman J, Sirinek K. Gangrenous cholecystitis in the decade before and after the introduction of laparoscopic cholecystectomy. *JSLS.2*005; 9 (2): 169–173.
[10] Stefanidis D, Sirinek KR, Bingener J. Gallbladder perforation: risk factors and outcome. *J Surg Res.2*006; 131 (2): 204–208.
[11] Merriam LT, Kanan SA, Dawes LG, Angelos P, Prystowsky PJB, Renge RV, et al. Gangrenous cholecystitis: analysis of risk factors and experience with laparoscopic cholecystectomy. *Surgery.1*999; 126 (4): 680–685.
[12] Fagan SP, Awad SS, Rahwan K, Hira K, Aoiki N, Itani KMF, et al. Prognostic factors for the development of gangrenous cholecystitis. *Am J Surg.2*003; 186 (5): 481– 485.
[13] Amara Jyothi Nidimusili, M. Chadi Alraies, Naseem Eisa, Abdul Hamid Alraiyes, Khaldoon Shaheen, "Leukocytosis of Unknown Origin: Gangrenous Cholecystitis", *Case Reports in Medicine*, vol.2013, Article ID 418014, 4 pages, 2013. https: //doi. org/10.1155/2013/418014
[14] Sureka B, Rastogi A, Mukund A, Thapar S, Bhadoria AS, Chattopadhyay T Gangrenous cholecystitis: Analysis of imaging findings in histopathologically confirmed cases. Indian J Radiol Imaging.2018 Jan-Mar; 28 (1): 49-54. doi: 10.4103/ijri. IJRI_421_16. PMID: 29692527; PMCID: PMC5894319.
[15] Girgin S, Gedik E, Taçyıldız IH, Akgün Y, Baç B, Uysal E. Factors affecting morbidity and mortality in gangrenous cholecystitis. *Acta Chir Belg.2*006; 106 (5): 545–549.
[16] Croley GG 2nd. Gangrenous cholecystitis: five patients with intestinal obstruction. Am Surg.1992 May; 58 (5): 284-92. PMID: 1622008.

Licensed Under Creative Commons Attribution CC BY