International Surgery Journal
Tubachi P et al. Int Surg J. 2018 Oct;5(10):3346-3349
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: http://dx.doi.org/10.18203/2349-2902.isj20184086

Original Research Article

Gallbladder perforation: management in a tertiary care centre

Prashant Tubachi*, K. Sphurti Kamath, Mallikarjun Desai, Harsha Kodliwadmath

Department of Surgery, SDM medical college, Dharwad, Karnataka, India

Received: 28 July 2018
Accepted: 29 August 2018

***Correspondence:**
Dr. Prashant Tubachi,
E-mail: tubachi9@gmail.com

ABSTRACT

Background: Retrospective study in the management of perforated gallbladder and clinical outcome in a tertiary care centre.
Methods: Total of 583 patients underwent laparoscopic or open cholecystectomy between 2015 to 2017. Out of these eleven patients had perforated gallbladder (1.9%). Niemeier' classification used for gallbladder perforation. Both Ultrasonography and Abdominal computerized tomography was used in this study. The parameters like age, gender, method of management, diagnostic procedures, time between date of admission to time of surgery, surgical treatment, duration of hospital stay and post-operative morbidity were evaluated.
Results: Out of the eleven cases, eight patients were male and three were female. Nine patients were above the age of fifty years. According to Niemer classification, seven patients had type I perforation, three patients had type II perforation and one had type one perforation. Out of the eleven cases, eight were clinically diagnosed to be acute cholecystitis and three were clinically diagnosed to have peritonitis. The cases diagnosed to have peritonitis-underwent immediate intervention. The remaining eight cases were initially managed conservatively with intravenous antibiotics, imaging and workup was done, following which intervention was done.
Conclusions: Early diagnosis and emergency surgical treatment of gallbladder perforation with peritonitis is of crucial importance. If the patient is stable then intervention after optimising has better outcome. Abdominal computerized tomography for acute cholecystitis patients may contribute to the preoperative diagnosis of gallbladder perforation.

Keywords: Acute cholecystitis, Gallbladder perforation, Computer tomography in acute abdomen

INTRODUCTION

Cholecystitis is secondary to gallstones in 90- 95% cases.[1] Initially cholecystitis is an inflammatory process wherein gall bladder wall becomes grossly thickened. In severe cases, 5-10%, it leads to ischemia Gall stone disease is one of the most common problems affecting the digestive tract. Acute and necrosis of wall. Rarely this ischemic area perforates-resulting in a life-threatening condition. Early intervention was considered better in gallbladder perforation.

The main cause of gall bladder perforation is cholecystitis with or without cholelithiasis.[2] In old age spontaneous perforation of gall bladder can occur secondary to atherosclerosis, vasculitis or focal vasospasm.

Niemeier proposed a classification of gall bladder perforation type 1-acute free perforation into the peritoneal cavity, type 2-subacute perforation with pericholecystic abscess, type 3-chronic perforation with cholecystoenteric fistula.[3]

A definitive diagnosis is uncommon before surgery and this condition is associated with high mortality and morbidity. This study shows our clinical experience with cases of gall bladder perforation.

METHODS

Records of all patients diagnosed to have gall bladder perforation in our hospital- SDM Medical college hospital - a tertiary health care centre in Karnataka, India,between January 2015 to December 2017 were reviewed retrospectively.

Inclusion criteria

All patients with gall bladder perforation admitted to the hospital.

Exclusion criteria

Perforations due to trauma/ iatrogenic causes. Gall bladder malignancies and patients who discontinued treatment at the hospital against medical advice.

Eleven patients were included in the study after this. Both Ultrasonography and Abdominal computerized tomography was used in this study.

This study was an observational study. Details regarding the above-mentioned cases were collected from the hospital's medical records department.

The parameters like age, gender, method of management, diagnostic procedures, time between date of admission to time of surgery, surgical treatment, duration of hospital stay, and post-operative morbidity were evaluated.

RESULTS

Out of the eleven cases, eight patients were male and three were female. Nine patients were above the age of fifty years Nine out of eleven had associated comorbidities. Two were known hypertensives on medication, one was a known case of diabetes mellitus, four were both hypertensive and diabetic, one was a case of ischemic heart disease on medication and one was hepatitis B positive.

Table 1: Patient particulars, clinical diagnosis and method of management.

Age (years)	Gender	Clinical Diagnosis	Type of Perforation	Co-morbidities	Day of Definitive Therapy	Management
76	M	Acute cholecystitis	II	Hypertension, CVA, IHD	19	ERCP, Biliary sphincterotomy, OC
61	M	Acute cholecystiitis	I	Diabetes mellitus, Hypertension	2	OC
51	M	Acute cholecystitis	I	Diabetes mellitus, Hypertension	3	OC
78	F	Acute cholecystitis	II	Diabetes mellitus	-	Interval OC
73	M	Peritonitis	I	Hypertension Diabetes mellitus	1	Lap converted to OC
77	M	Acute cholecystitis	II	IHD	2	Lap, Cholecystectomy
60	M	Acute cholecystitis	I	Hypertension, Diabetes mellitus	2	Lap converted To OC
65	M	Acute cholecystitis	III	HBSAG	3	OC+, Segmental resection of transverse colon
62	F	Acute cholecystitis	I	-	2	Lap converted To OC
22	M	Peritonitis	I	-	1	Laparotomy, Cholecystectomy, CBD exploration, Choledochoduodenstomy
35	F	Peritonitis	I	Hypertension	1	Laparotomy Cholecystectomy, Choledochotomy Extraction of stones' T tube insertion

Out of the eleven cases, eight were clinically diagnosed to be acute cholecystitis and three were clinically diagnosed to have peritonitis. The cases diagnosed to have peritonitis- underwent immediate intervention. The remaining eight cases were initially managed conservatively with intravenous antibiotics, imaging and workup was done, following which intervention was done.

One underwent laparoscopic cholecystectomy, two underwent laparoscopic converted to open cholecystectomy, three underwent open cholecystectomy, one was planned for interval cholecystectomy and the eighth patient underwent open cholecystectomy with segmental resection and anastomosis of transverse colon. The results have been summarized in Table 1.

Out of the 3 cases with type II perforation-one was planned for interval cholecystectomy, one underwent laparoscopic cholecystectomy and the third patient initially underwent ERCP and biliary sphincterotomy followed by open cholecystectomy. Out of the seven cases with type 1 perforation-five were at the fundus, one at the neck of the gallbladder and one at the body of gall bladder.

Common bile duct exploration and T-tube placement was done in addition to cholecystectomy in two patients. Five out of eleven cases had elevated serum lipase levels. Seven cases had elevated total leukocyte count at the time of presentation.

The cases that were managed conservatively had hospital stay duration of less than ten days, whereas the ones that underwent operative intervention had hospital stay of more than ten days. Nine out of the eleven cases developed surgical site infection following the surgery. No hospital deaths occurred in these eleven cases.

DISCUSSION

In patients with acute cholecystitis, inflammation progresses causing ischemia and necrosis resulting in gall bladder perforation. Gall bladder fundus, the most distal part with regard to blood supply is the most common site of perforation.[4]

Gall bladder perforation is more frequent in male gender.[5,6] In present study, we found eight male patients with gall bladder perforation as compared to three females.

The most common type of perforation noted was type I-out of those the most common site of perforation was the fundus of the gall bladder. A similar study done in Manchester, UK concluded that the incidence of type I and type II perforations was equal.[7]

Early intervention was considered better in gallbladder perforation Most of the cases of gallbladder perforations are identified during surgery.[8,5] Uncomplicated cholecystitis is more common in females.[9]

The cases that presented with clinical symptoms and signs suggestive of peritonitis-underwent immediate surgical intervention.

The rest of the cases followed a sequence of conservative management, investigations- contrast enhanced CT imaging of abdomen and pelvis followed by surgical intervention-immediate or interval. Since the difficulties in diagnosis cause delay in treatment, higher morbidity and mortality rates are often encountered.[10] One case of perforated gall bladder was associated with cholecystocolonic fistula and underwent open cholecystectomy with segmental resection and anastomosis of transverse colon.

The surgery was performed three days following admission. The patient had no other comorbidities. So early intervention in a patient with peritonitis has better outcome. If the patient is stable hemodynamically then intervention after optimizing has showed better outcome in present study.

The limitations of this study are the retrospective nature and its small sample size.

CONCLUSION

Early diagnosis and emergency surgical treatment of gallbladder perforation with peritonitis is of crucial importance. If the patient is stable, then intervention after optimizing has better outcome. Abdominal computerized tomography for acute cholecystitis patients may contribute to the preoperative diagnosis of gallbladder perforation.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Schwartz's principles of surgery 10th edition Gall bladder and the extrahepatic biliary system, Thai H Pam. McGraw Hill Education; 2014;1309-1340.
2. Roslyn J, Busuttil RW. Perforation of the gallbladder: a frequently mismanaged condition. Am J Surg. 1979;137(3):307-12.
3. Niemeier OW. Acute Free Perforation of the Gall bladder. Ann Surg.1934;99:922-4.
4. Isch JH, Finneran JC, Nahrwold DL. Perforation of the gallbladder. Am J Gastroenterol. 1971;55:451-8.
5. Roslyn JJ. Risk factors for gall bladder perforation. Am J Gastroenterol. 1987;82:636-40.
6. Bedirli A. Factors effecting the complications in the natural history of acute cholecystitis. Hepatogastroenterol. 2001;48:1275-8.

7. Date RS. Gall bladder perforation: case series and systematic review. Int J Surg.2012;10:63-8.
8. Hayrullah, Dericiet. Diagnosis and treatment of gallbladder perforation. World J Gastroenterol. 2006;12(48);7832-6.
9. Glenn F. Acute cholecystitis. Surg Gynecol Obstet. 1976;143:56:60.
10. Menakuru SR, Kaman L, Behera A, Singh R, Katariya RN. Current management of gall bladder perforations. ANZ J Surg. 2004;74:843-6.

Cite this article as: Tubachi P, Kamath KS, Desai M, Kodliwadmath H. Gallbladder perforation: management in a tertiary care centre. Int Surg J 2018;5:3346-9.