ORIGINAL RESEARCH

International Journal of Surgery 11 (2013) 305–308

Contents lists available at SciVerse ScienceDirect

International Journal of Surgery

journal homepage: www.theijs.com

Original research

Combined cholecystectomy in gastric cancer surgery

Shuo-Lun Lai [a], Jyh-Chin Yang [b], Jin-Ming Wu [a], I-Rue Lai [a], Chiung-Nien Chen [a,*], Ming-Tsan Lin [a], Hong-Shiee Lai [a]

[a] Department of Surgery, National Taiwan University Hospital and National Taiwan University College of Medicine, No. 7, Chung-Shan S Road, Taipei, Taiwan
[b] Department of Internal Medicine, National Taiwan University Hospital and National Taiwan University College of Medicine, Taipei, Taiwan

ARTICLE INFO

Article history:
Received 2 November 2012
Received in revised form
5 February 2013
Accepted 9 February 2013
Available online 19 February 2013

Keywords:
Gastric cancer
Gastrectomy
Gallstone
Cholecystectomy

ABSTRACT

Background: Many studies have described the risk factors of gallstone formation in gastric cancer patients after gastrectomy, but few studies focus on the management of asymptomatic gallstones. Our goal is to examine the rationale of simultaneous cholecystectomy during gastric cancer surgery, and influence of surgical mortality, morbidity and overall survival after combined cholecystectomy and gastrectomy.
Methods: We retrospectively reviewed 445 gastric cancer patients and the gallbladders evaluated by abdominal ultrasound or computed tomography preoperatively and postoperatively. Clinicopathologic factors, including surgical morbidity, mortality and overall survival of combined surgery, were compared between patients receiving gastrectomy with simultaneous cholecystectomy and patients receiving gastrectomy only. We also evaluated the risk factors of gallstone formation after gastrectomy and the probability of subsequent cholecystectomy after gastrectomy in gastric cancer patients with or without asymptomatic gallstones.
Results: Of 445 gastric cancer patients, 52 (11.7%) patients had asymptomatic gallstones upon diagnosis of gastric cancer. Among patients with healthy gallbladders, 15.2% developed gallstones after gastrectomy. Men and older patients (age over 60) had significantly higher risk of gallstone formation. Rate of subsequent cholecystectomy in patients with and without preoperative asymptomatic gallstones was 30.8% and 4.5%, respectively ($p = 0.005$). The rates of mortality and morbidity were not significantly different between combined surgery (3.4%, 24.2%) and gastrectomy only (3.1%, 22%). There was also no significant difference in 5-year survival between combined surgery (61%) and gastrectomy only (63%) groups.
Conclusion: Combined cholecystectomy for asymptomatic gallstone in gastric cancer surgery may be considered. It was not associated with increased surgical morbidity or mortality, and had no significant effect on overall survival.
© 2013 Surgical Associates Ltd. Published by Elsevier Ltd. All rights reserved.

1. Introduction

Approximately 6% of patients undergoing upper GI surgery are expected to require cholecystectomy during follow-up.[1] Many reports suggest that gastrectomy increases the incidence of gallstone formation. The effect of truncal vagotomy, which may occur during resection of the stomach[2] and extensive lymph node dissection,[3] is thought to play an important role in the change of plasma cholecystokinin (CCK) concentration and gallbladder emptying, resulting in stone formation. Total gastrectomy with reconstruction such as Billroth II and Roux-en-Y, which exclude food passage through the duodenum, may cause higher risk of gallstone formation.[4]

Many studies have reported the risk factors of gallstone formation after gastric cancer surgery, but few focus on the incidence of asymptomatic gallstones in gastric cancer patients and the rationale for simultaneous cholecystectomy during gastric cancer surgery.[3,4] This study was conducted to identify the indications for cholecystectomy during gastric cancer surgery, evaluate the rate of subsequent cholecystectomy after gastrectomy in gastric cancer patients with or without asymptomatic gallstones, and assess the effects of simultaneous cholecystectomy on surgical mortality, morbidity, and oncological results of gastric cancer surgery.

2. Methods

The medical records of patients with gastric cancer receiving gastric resection at the National Taiwan University Hospital from January 1988 to December 1993 were collected retrospectively. Information obtained from medical records included age, sex, operative findings, operative method, operative time, peri-operative blood transfusion, length of hospital stay, and clinicopathologic factors of gastric cancer.

* Corresponding author. Tel.: +886 2 23123456x65094; fax: +886 2 33223579.
E-mail addresses: sauron_lai@hotmail.com (S.-L. Lai), cnchen@ntu.edu.tw (C.-N. Chen).

1743-9191/$ – see front matter © 2013 Surgical Associates Ltd. Published by Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.ijsu.2013.02.006

Preoperative gallstones were detected by abdominal sonography or computed tomography, which were done routinely for general preoperative evaluation of gastric cancer patients. Tumor location, depth of invasion, lymph node staging, stage grouping and surgical curability were also analyzed according to the rules of the Japanese Research Society for Gastric Cancer. Postoperative morbidity and mortality included events occurring within 30 days after the operation. Gallstones or cholecystitis occurring after discharge were classified as long-term complications.

We routinely followed the abdominal conditions of patients undergoing gastric cancer surgery by abdominal sonography or computed tomography at 3- to 6-month intervals.

Patients enrolled in the study were divided into "cholecystectomy" and "no cholecystectomy" groups. Comparisons of clinicopathologic factors between cholecystectomy and no cholecystectomy groups were made by using the chi-square test for dichotomous variables and the Wilcoxon rank sum test for variables with a continuous distribution. Estimated accumulative overall survival was made using the Kaplan–Meier method. *P* values of less than 0.05 were considered statistically significant.

3. Results

Between January 1988 and December 1993, 445 patients with gastric cancer underwent gastric resection at National Taiwan University Hospital. The mean age at the time of operation was 59.2 (26–87). There were 271(60.9%) men and 174(39.1%) women. Mean follow-up time was 5 years. 101 patients died of cancer recurrence or other medical problems. The remaining 167 patients were alive at the last follow-up.

3.1. Therapeutic flowchart of patients (Fig. 1)

Of the 445 patients, 58(13%) had concomitant cholecystectomy (cholecystectomy group) during gastric cancer surgery due to various reasons, and 387(87%) patients did not (no cholecystectomy group). Of the 58 patients in the "cholecystectomy" group, 41 patients had complete follow-up for more than two years and no biliary complications were recorded. Of the 387 patients in the "no cholecystectomy" group, 13 had asymptomatic gallstones at the time of receiving gastric cancer surgery. Of the remaining 374 patients with no gallstones, 197 patients completed follow-up workup, but 177 patients lost follow-up. Of the 197 patients who completed follow-up, 58(29.4%) patients eventually developed gallbladder disease after gastric resection.

3.2. Causes for concomitant cholecystectomy

Three reasons were identified for concomitant cholecystectomy during gastric cancer surgery in our series (Table 1). Of the 58 patients receiving concomitant cholecystectomy, 39(67.2%) were due to the presence of gallstones. 17(29.3%) patients received cholecystectomy due to potential cystic artery injury during aggressive lymph node dissection around the hepatoduodenal ligament. Injury of the cystic artery may occur during lymph node dissection if the lymphadenopathy extends to the distal hepatic artery. For safety, cholecystectomy was performed to prevent gallbladder ischemia or further complications. 2 (10.5%) patients had tumor involvement of the gallbladder. The "cholecystectomy" and "no cholecystectomy" groups were similar in terms of age, sex, peri-operative blood transfusion, operative time, and follow-up time (Table 2). Tumor location, surgical procedure and pathological stage of the two groups were also similar.

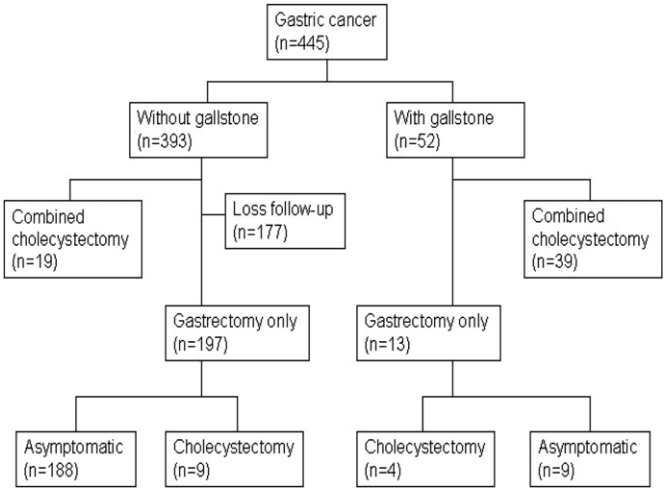

Fig. 1. Treatment of gastric cancer patients with/without gallstone.

Table 1
Causes for combined cholecystectomy during gastric cancer surgery.

Causes/tumor site	Antrum	Body	Cardia	Whole stomach	Total
Cholelithiasis	20	10	6	3	39(67.2%)
No cholelithiasis					19(32.8%)
Hepatoduodenal lymph node dissection	14	2	1		17(29.3%)
Tumor involvement	2				2(10.5%)
Total	36	12	7	3	58

3.3. Postoperative morbidity and mortality

There was no significant difference in postoperative mortality (3.4% vs. 3.1%), overall morbidity (24.2% vs. 22%), and 5-year survival rate (61% vs. 63%) between the cholecystectomy group and the no cholecystectomy group (Table 3).

3.4. Imaging finding after gastrectomy

30(15.2%) patients developed gallstones, 16(8.1%) developed gallbladder sludge, 12(6.1%) developed gallbladder polyps. In risk factor analysis, men and age over sixty years had a higher risk of developing gallbladder abnormalities after gastrectomy (Table 4).

3.5. Subsequent cholecystectomy after gastrectomy

There were 210 patients who received gastrectomy only and had regular follow-up. 9 of 197 (4.3%) patients without previous gallstones underwent cholecystectomy (Table 5), 3 of which occurred within 3 years after gastrectomy. 4 of 13(30.8%) patients with previous gallstones became symptomatic and underwent cholecystectomy within 3 years after gastrectomy. Frequent biliary colic and cholecystitis were the main reasons for subsequent cholecystectomy. All subsequent cholecystectomy was performed directly by the open method because of concerns of severe adhesion. No morbidity or mortality was mentioned after subsequent cholecystectomy. There was a significantly higher probability of subsequent cholecystectomy in patients with asymptomatic gallstones before gastrectomy than those with normal gallbladder (30.8% vs. 4.3%, $p = 0.005$).

4. Discussion

It has been reported that the incidence of gallstone formation increases after gastrectomy. However, Patel et al. reported that the incidence of symptomatic gallstones requiring cholecystectomy after laparoscopic Roux-en-Y gastric bypass is low.[5] Truncal vagotomy was believed to affect the secretion of cholecystokinin (CCK), which stimulates gallbladder contraction, and to delay

Download English Version:

https://daneshyari.com/en/article/4286336

Download Persian Version:

https://daneshyari.com/article/4286336

Daneshyari.com