

Prophylactic Cholecystectomy with Gastric Bypass Operation: Incidence of Gallbladder Disease

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Background: Morbid obesity is one of the major risk factors for gallbladder disease, and this risk is even greater following rapid weight loss. Because of this, prophylactic cholecystectomy has been offered to our patients undergoing the transected silastic ring vertical Roux-en-Y gastric bypass (TSRVRYGBP). A study was undertaken to determine the incidence of pathologic gallbladders in patients undergoing this prophylactic cholecystectomy.

Method: The records of all patients who underwent TSRVRYGBP from June 1999 through December 2000 were reviewed. Pathologic findings of the gallbladder were documented as cholelithiasis, cholecystitis, cholesterolosis, polyps or normal.

Results: 761 patients underwent the operation. 178 patients (23%) had cholecystectomy before the surgery. 154 (20%) had gallstones documented by ultrasound and had cholecystectomy at the time of the surgery. 324 of the 429 patients with negative preoperative findings by ultrasound had pathologic evidence of gallbladder disease.

Conclusion: Because of the high incidence of gallbladder disease even with negative preoperative findings in morbidly obese patients and the lack of significant morbidity with cholecystectomy in experienced hands, routine cholecystectomy at the time of the weight loss operation is justified.

Key words: Morbid obesity, bariatric surgery, cholecystectomy, cholecystitis, gastric bypass

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Introduction

Gallbladder disease is one of the most frequent obesity-related illnesses, and it is well known that obesity is a major risk factor for the development of gallstones.¹ Parity, the use of contraceptives, hormonal, reproductive, dietary, genetic, ethnic influences, ileal disease, alcohol intake and rapid weight loss are factors that are known to increase the risk of developing biliary disease.¹⁻⁵ In light of these risk factors, morbidly obese persons undergoing surgery for weight reduction comprise a population at extremely increased risk for development of biliary disease. The frequency of preoperative cholecystectomy and intraoperative cholecystectomy for gallstones at the time of weight reduction surgery is between 28 and 45%.⁶⁻⁹ The incidence of post-operative gallbladder disease after jejunio-ileal bypass has been reported to be from 5 to 36% and after gastric bypass to be from 2.8 to 36%.^{10,11} The incidence of pathologic gallbladders as determined by pathologic evaluation of gallbladders removed routinely, concurrent to a weight loss operation, has been reported to be from 60 to 95%. In our experience of more than 1,000 concurrent cholecystectomies for documented gallbladder disease in more than 8,000 weight reduction operations, we have not had any morbidity such as ductal injury, jaundice or bile peritonitis with concurrent cholecystectomy. We also documented a 3% incidence of cholecystectomy after weight reduction surgery. In a few cases, the patients presented with an acute abdomen, septic and did require pro-

longed hospital care. In light of the high correlation between morbid obesity and gallbladder disease and the absence of morbidity with concurrent cholecystectomy, we decided on concurrent prophylactic cholecystectomy with all weight reduction operations, starting June 1st, 1999. A review of the data that has been maintained prospectively was done to determine the incidence of gallbladder disease in patients undergoing weight loss surgery and to see if it is safe, cost-effective and justified.

Methods

The records of all patients who had weight loss surgery at our Center between June 1st, 1999 and December 31st, 2000 were reviewed to determine the incidence of gallbladder disease. The operations were performed at three different hospitals. Neither the radiologists nor the pathologists at any of the hospitals were aware of our policy of routine concurrent prophylactic cholecystectomy. The patients were offered concurrent cholecystectomy, whether the preoperative gallbladder evaluation was positive or not. The patients with normal preoperative gallbladder findings had to sign a consent requesting prophylactic cholecystectomy because of the high correlation between gallbladder disease and morbid obesity and the increased incidence with rapid weight loss. The surgical operation performed was the transected silastic ring vertical Roux-en-Y gastric bypass (TSRVRYGBP) with a temporary gastrostomy and a gastrostomy site marker (Figure 1).^{12,13}

Results

TSRVRYGBP was performed in 761 patients between June 1st, 1999 and December 31st, 2000. The operations were primary in 674 and secondary in 87 operations (Table 1). Prior cholecystectomy had been performed in 178 of these patients. Positive gallbladder disease was found preoperatively in 154, most of them gallstone. Negative ultrasound findings were present in 429 before surgery; 105 of these had no pathology or a read-

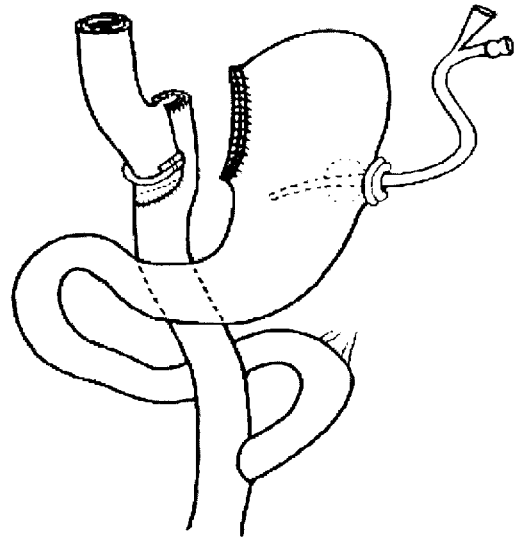


Figure 1. The transected silastic ring vertical Roux-en-Y gastric bypass (TSRVRYGBP) with jejunal interposition, a gastrostomy and gastrostomy site marker.

ing of normal gallbladder by the pathologist (Figure 2). Pathologic findings that included cholelithiasis, cholecystitis, cholesterosis, adenoma and combinations thereof were present in 324 (Table 2). Most of the patients were white female with private insurance coverage (Table 3). The cholecystectomy added on the average 15 minutes to the operative time. The only peri-operative complication was oozing from the liver bed that necessitated drainage in 27 patients. There were two patients with transient hyperbilirubinaemia with jaundice that resolved spontaneously. There have been no late complications attributable to the concurrent cholecystectomy.

Table 1. Bariatric operations June 1999 - December 2000

Type of Bariatric Surgery	All patients		Negative USG* findings	
	No.	(%)	No.	(%)
Primary				
TSRVRYGBP	674	88.57	402	93.71
Secondary				
TSRVRYGBP	34	4.47	17	3.96
Revision operation	53	6.96	10	2.33
Total	761	100.00	429	100.00

*USG=ultrasound of gallbladder

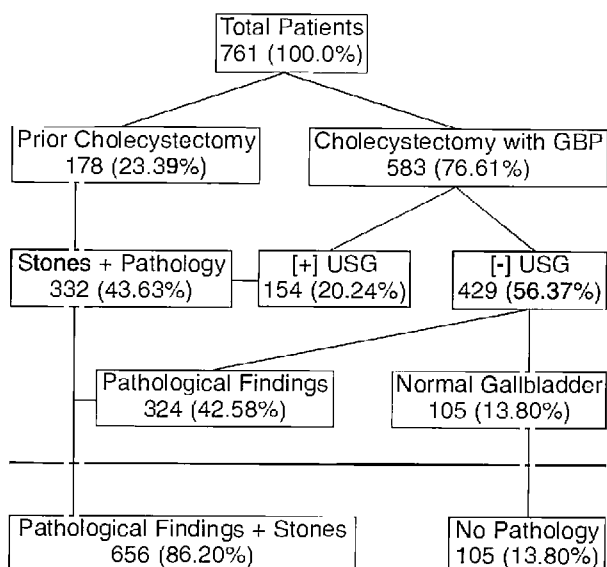


Figure 2. Incidence of gallbladder disease in morbidly obese patients undergoing bariatric operation. USG=ultrasound of gallbladder.

Discussion

The incidence of gallbladder pathology in this series is 86.2 %. This confirms the high correlation between morbid obesity and gallbladder disease as reported by others.^{1,2,10} Fifty-three (12.35%) of the patients with negative ultrasound findings had cholelithiasis. This again corroborates the reports by others of the high incidence of false negative ultrasound readings in this group of patients.¹⁴ In

Table 2. Pathological findings in patients with negative USG*

Pathological findings with neg USG	No.	(%)
Cholecystitis	165	50.93
Cholesterolosis	69	21.30
Cholecystitis and Cholesterolosis	35	10.80
Cholecystitis and Cholelithiasis	30	9.26
Cholelithiasis	14	4.32
Cholecystitis and Cholesterolosis and Cholelithiasis	6	1.85
Cholesterolosis and Cholelithiasis	3	0.93
Cholecystitis and Adenoma	2	0.62
Carcinoma of Gallbladder	0	0.00
Normal Gallbladder	105	32.41
Total Patients	324	100.00

*USG=ultrasound of gallbladder

Table 3. Patient profile

No. of patients		761 (100.0%)
Sex	F	666 (87.52%)
	M	95 (12.48%)
Race	White	487 (61.77%)
	Black	212 (31.00%)
	Hispanic	48 (5.36%)
	Other	14 (1.84%)
Payment	Private insurance	510 (67.02%)
	Medicare/medical	149 (19.58%)
	Self-pay	102 (13.40%)
Av. age (yrs)		41.53 ± 10.9*
Av. height (cm)		166.80 ± 8.8*
Av. initial weight (kg)		138.52 ± 35.8*
Av. BMI (kg/m ²)		49.53 ± 10.9*
Av. percent ideal weight (%)		221.53 ± 48.5*

*Standard deviation, SD

this series, 429 patients would have been at exposure for future symptomatic gallbladder disease. As it is, none of them is at exposure after the prophylactic cholecystectomy with no morbidity. Our experience dictates that 3% of these would have required subsequent cholecystectomy for symptomatic disease. Other reports place this rate at between 20 and 40 %. It is apparent from this study and many other published reports that the incidence of gallbladder disease in patients undergoing weight loss surgery is so high, the risk of subsequent symptomatic disease is significant, and the morbidity of concurrent cholecystectomy is so low that prophylactic simultaneous cholecystectomy is warranted. If this is accepted widely, then there may be the added savings of the elimination of preoperative gallbladder ultrasound examinations in the evaluation of patients for weight loss operations.

Conclusion

The incidence of gallbladder disease with negative preoperative findings is high enough in morbidly obese patients to warrant routine cholecystectomy at the time of weight loss operations.

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