

Postoperative Bile Duct Stricture

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Purpose: Postoperative biliary stricture is rare, but can result in a dreadful condition unless it is properly treated. This study was undertaken to assess the clinical features of a postoperative biliary stricture and to evaluate the outcome of reconstructive methods according to the stricture locations and types.

Methods: From 1984 to 2001, 28 cases (M=16, F=12) of postoperative biliary stricture, which resulted from surgical injury and had subsequent reconstructive procedures performed in department of surgery of Seoul National University Hospital, during the period of 1984 to 2001, were retrospectively reviewed. Clinical features such as the symptom, type of surgery causing the stricture, laboratory finding, diagnostic modality, interval between the operation and symptoms and the type of stricture were reviewed and clinical outcomes of the reconstructive procedures were also analyzed. The mean follow-up period was 45.9 months (2-157).

Results: The most common symptoms of stricture was jaundice. 57.1% of patients showed symptoms within postoperative 6 months and 64.3% showed symptoms within 1 year. A cholecystectomy was most common surgical procedure that caused a postoperative biliary stricture. Bismuth type I was most common type of stricture (52.2%). Bilioenteric anastomosis (Roux-en Y hepaticojejunostomy) showed most excellent result among the many reconstructive methods. One case of an interventional balloon dilatation has maintained a good condition for 3 years after the procedure. The postoperative complications comprises bile leakage, a subphrenic abscess, an incisional hernia, an intrahepatic duct stone, recurrent pyogenic cholangitis. There were 2 cases of postoperative mortality.

Conclusion: Roux-en Y hepaticojejunostomy is considered to be the procedure of choice for a postoperative biliary stricture. An interventional balloon dilatation is expected to show good result with more cases and adequate indications. (*J Korean Surg Soc* 2003;64:63-71)

Key Words: Postoperative biliary stricture, Hepaticojejunostomy

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가
 , (I)
 , , , ,
 , 가 80% 가
 .(I-5)
 .(I)
 가 .(5,6) Bismuth
 0.2%
 0.3 0.6%
 가
 (5,7,8) 가
 (1,2,9-12)

가 350 IU/L 9 (32.1%)
 가 가 75% .
 가(10,000/mm³) 7
 24.1% .
 (percutaneous transhepatic cholangiography; PTC)가 12
 가 가 .
 3 ,
 T (路) 3 ,
 2 가 , HIDA ,
 (MRCP)
 2)
 가 16 57.1% 가 6
 1 18
 64.3% . 1 1
 (3.6%) 3 (10.7%) 5
 5 21
 60 (Fig. 1).
 3)
 , 2 ,
 ,
 가 8
 8

1984 2001 28
 . , ,
 , 가
 16 , 12 45.9
 (29 64) . , ,
 , ,
 ,
 2 157
 45.9 .
 14 (50%), 6
 , Ecchinococcal , ,
 , 1 .
 1)
 가 , ,
 가 (46.4%) , ,
 (21.4%) , ,
 Charcot's triad
 3 , ,
 가 12
 mg/dl 가 가 75.8%
 (: 30 115 IU/L) 115 IU/L
 , 350 IU/L 가 12 (42.9%) 가

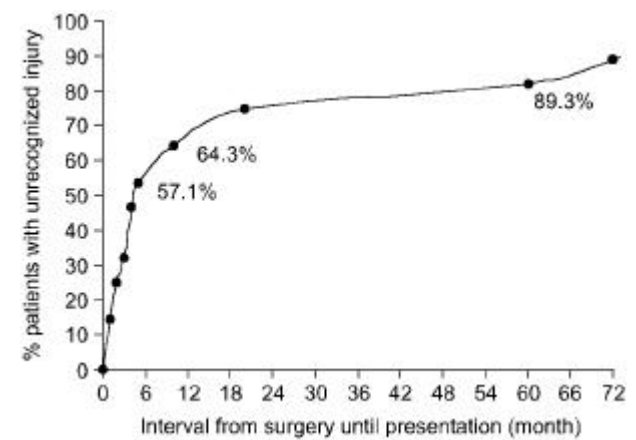


Fig. 1. The cumulative percentage of patients presenting symptoms with respect to the time since procedure at which the injury occurred.

T 가 6 , T 가 2 Oddi . T 23 Bismuth 가

6 4 T 2 Bismuth 1 가 2 cm

. T Oddi 12 (52.2%) 가 . 2 가 2 cm

6 (27.3%) . 3

1 1 , 4 가 가 5

- 1 , 2 가 . 5

- 1 , 2 가 . 5

2 , - 1 5

- 1 가 .

1 , (S5, S6, S7) 1 ,

1 , 1 (Table 1).

4)

- Excellent: , , ,
- Good: , ,
- Fair:
- Poor: 가

Table 1. Previous operative procedures

Name of the procedure	Primary	Secondary	Total
Simple cholecystectomy			
Open	5		5
Laparoscopic	3		3
CBD exploration			
With T-tube choledochotomy	4	2	6
With T-tube+sphincterotomy	1	1	2
Biliary-enteric anastomosis			
Cholecystojejunostomy	1		1
Hepaticojejunostomy	1	2	3
Choledochojejunostomy	1		1
Portojejunostomy		1	1
Bile duct end-to-end anastomosis	1		1
S5, S6, S7 segmentectomy	1		1
Transduodenal sphincterotomy		1	1
DPRHP*	1		1
Intraop. tube stenting		1	1
	19	9	28

*DPRHP = Duodenal preserving resection of the head of the pancreas.

(1)

① Bismuth (Table 2)

ㄱ) Bismuth 1 : 10

Roux-en Y 7 ,

1 ,

1 가

1 가 . Roux-en Y -

excellent 4 , good 2 , fair 1 .

fair

Foley catheter T (路) 3

2 Roux-en Y

excellent

1 T

(路) 3 T 1 , , 1 , 1

1 T 1 가 . 3 (clipping) 2 - 1 Roux-en-Y (portoenterostomy) T 2 - T B5, B6, B7, B8 가 Bake's dilator Roux-en Y T 23 30.5 □) Bismuth 5 : (2) : 1 3 T 5 가 Roux-en Y - 3 , Roux-en Y 1 en Y Roux- 가 - 4 1 en Y 1 4 가 (3) : 3 , 2 , 1 가 AST/ALT 가 가 가 3 . 1 (clip) , 1 2 가 . 2 55.5 1 ② - (Table (Table 4). 3);

Table 3. Treatments and outcome of reconstruction of previous bilioenteric anastomosis site stricture

Stricture site (n)	Treatment	Outcome			
		Excellent	Good	Fair	Poor
Hepaticojejunostomy (3)	Intraop. dilatation + T-tube	1			
	Intraop. tube stenting			1	
	Revision + T-tube	1			
Choledochojejunostomy (1)	Revision of anastomosis		1		
Cholecystojejunostomy (1)	Intraoperative dilatation				1

tion - -

Roux-en Y - 가 .

Pellegrini(26) 2

1.7 22% (25) 67% 7

(가) , , 가 , 가 20 90% .

가 가

Roux-en Y - Roux-en Y - 가 .

가 가

가 .

5 . 4

Roux-en Y - 1

. 1978 Molnar 가

Stockum T (路) - 4

Burhenne . Molnar Stockum - Roux-en Y - 가

Chartrand-Lefebvre (19)

.(7,10,14-17,19,27-29)

가

가

(7,15)

Citron(7) 4 , , 가 , 가

(zone) , - 가

가

Vogel(28)

가

가

가

1

T (路) 1984 2001 가

10 28 . 가

1990 . 64.3% 가 1

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