STEPWISE MANAGEMENT OF POSTCHOLECYSTECTOMY PROBLEMS BY SURGERY AND ENDOSCOPY

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ABSTRACT

Background: *The term of postcholecystectomy syndrome (PCS) comprises a heterogeneous group of symptoms and signs in patients who have previously undergone cholecystectomy. Patients of PCS may present with abdominal pain, jaundice or dyspeptic symptoms, many of these complaints can be attributed to complications including bile duct injury, biliary leak, biliary fistula and retained stones. Late sequelae are bile duct strictures and secondary liver cirrhosis. A multidisciplinary approach between surgeons, radiologist and endoscopist offers the best chances for an initial diagnosis and therapeutic option.* ***The aim of this work****: is to study thoroughly and evaluate the different techniques, surgery, endoscopy and combined used for management of postcholecystectomy problems.* ***Patients and methods****: this is a descriptive study carried on 105 patients from the surgery department, and endoscopy unit of Assuit University Hospital from January 2010 - to July 2012.* ***Results:*** *most of our patients (97.1%) diagnosed in postoperative period and only 2.9% of injuries are recognized intraopertively. Sixty eight of 105 (64.7%) of patients has bile leakage, retaned stones and stricture was treated endoscopically. The remaining (35.3%) were treated surgically. Long-term follow-up revealed two cases (5.4%) with anastomatic stricture, which were managed by refashioning HJ with left ductal approach.* ***Conclusion:*** *(I) Minor bile duct injuries can be well treated by endoscopic techniques, (II) Major injuries of bile ducts require operative intervention after good and adequate preparation, (III) Raux-en-Y HJ is the gold standard operation for these major bile duct injuries*
Key words: *Postcholecystectomy syndrome (PCS).Open Cholecystectomy (OC). Laparoscopic cholecystectomy (LC). Iatrogenic Bile duct injury (IBDI) .Roux-en hepatico jejunostomy (HJ)*

INTRODUCTION

Laparoscopic cholecystectomy (LC), first introduced in France in 1987, has rapidly substituted open cholecystectomy (OC) for treatment of symptomatic cholelithiasis. In the United States, the number of laparoscopically performed cholecystectomies has rapidly grown over the last 15 years, and over 800,000 LC are now performed in the United States annually. (Nuzzo. et al, 2003).

In 1947, Womack and Crider first described PCS, defining it as the presence of related symptoms after cholecystectomy. (Connor S., Garden M, 2006)

Many of these complaints can be attributed to complications including bile duct injury, biliary leak, biliary fistula and retained bile duct stones. Late sequelae include bile duct strictures and secondary liver cirrhosis. With the number of cholecystectomies being performed increasing in the laparoscopic era the number of patients presenting with PCS is also likely to increase (Jauno S., et al., 2010).

The incidence of bile duct injuries with LC is approximately twice as high as that following open cholecystectomy. An overall incidence of 0.1% to 1.7% for minor bile duct injuries and 0.25% to 0.74% for major duct injuries has been reported in large series. Bile leaks comprise the commonest type of bile duct injury; however major duct injuries, including biliary strictures, fistulas, and complete or partial bile duct transection are also encountered. (Frilling A., et al, 2012)

Aim of the work

To study thoroughly and evaluate the different technique's, surgery, endoscopy or being combined, used for management postcholecystectomy problems.

PATIENTS AND METHODS

This is a descriptive study carried on 105 patients from the surgery department, and endoscopy unit of Assuit University Hospital from January 2010 to July 2012.

Inclusion criteria: Patients of both sexes who had iatrogenic injury to biliary tract during open and laparoscopic cholecystectomy.

Exclusion criteria: Patients of both sexes who had traumatic biliary injury or injury sustained during some other procedure has been excluded**.**

Pateint grouping

Patients were grouped into either surgical or endoscopic groups, based on the initial treatment undertaken at the Assuit University Hospital after the IBDI.

Ethical Aspects

A written consent was obtained from all patients and the study was approved by the Faculty of Medicine Ethical Committee

Statistical analysis

SPSS windows (version 16) software was used for analysis of our data as follow:

-Description of quantitive variables in the form of mean, standard deviation and range. Description of qualitative variables in form of frequency and percentage.

RESULTS

Demographic data

Age ranged from 18-75years with mean age of 40 ±10.42 years . seventy four of patients were females (70.5%) and 31 were male (29.5%).

Incidnce of BDI : only 10 patients out of 2160 cholecystectomies through two years (0.46%) were operated at Assuit University Hospital while the rest (95 patients) were referred from other centers**.**

Hospital referral

In this study 95 of patients (90.5%) get their IBDI at an outside Assuit University Hospital, compared to only 10 patients (9.5%) inside Assuit University Hospital.

Clinical presentation

The most common presentation postoperatively is bile leakage in 45 of patient (42.85%), followed by jaundice in 36 of patient (34. 3%) and Cholangitis in 13 patient (12.4%) as shown in table (1)

Time of presentation

only 3 patient discovered during operation (2.9%) and the rest(102) was discovered in postoperative period (97.1%) of them : the early presentations (within 1 month) are bile leakage, jaundice and biloma were noticed in 73.1%, while late presentations (after one month) are jaundice and Cholangitis were noticed in 24% of cases as presented in table(3).

Investigations

US finding in PCS patients revealed fluid collection at GB bed in 41%, dilated CBD and IHBR in 34.3%, echogenic shadow of stone in 13.3% and free intraperitoneal collection in 3.8 %. In table (2)

Endoscopic cholangiogram

Cholangiogram was done in 102 of patient. The main cholangiographic picture of patient of PCS show minor leakage in about 39 % from cystic duct , followed by arrest of dye in 23% , filling defect of stone shadow in (13.3%) , stricture above level of cystic duct in 8.6% and major leakage from transected CHD in 4.6% in table (4)

Percutaneous transhepatic cholangiogram

PTC was performed in 9 patients, 5 of them showed biliary stricture at the confluence of right and left hepatic ducts (Bismuth Type III). In the remaining, PTC showed complete CBD obstruction with variable lengths of common hepatic duct (3 cases Bismuth II and 1 case Bismuth I).

Endoscopic treatment

Endoscopic technique was used as a therapeutic modality in 68 of patients : 41 patients has minor biliary leakage on ERCP Cholangiogram treated by plastic Stent, removed after 3 months in 37 of them and completely free. Four patients need dilation and stenting due to stricture development but un fortunately 2 of them need surgery due to poor compliance with endoscopic stricture management protocol. and only 2 patients treated by Rendezvous technique.Patients with

modreate and major leakage (5 cases) underwent trial for endoscopic stent but not succeeded and treated by surgery. 14 patients had missed stone extracted by different techniques. In table (5)

Surgical treatment

Biliary reconstruction done in 37of patients, including intraoperative repair in 3 cases had partial injury of the anterior wall of CBD during operative time, they were repaired primarily by suturing with 3-0 Vicryl sutures after T – tube insertion through a separate incision in the CBD. Immediate repair were done in 10 cases by end-to-end ductal repairs on T tube . two cases treated urgentely by peritoneal lavage with intraabdominal drains .planned surgical approch was done in 18 cases by Roux-en-Y hepaticojejunostomy. And choledochoduodenostomy ,choledochithotomy were done in 2cases for each as presented in table (7).

Postoperative follow- up:

Postoperative mortality rate is 2 cases (5 .4 %) one case due to intra-abdominal bleeding and the other due to postoperative septicemia .Out of 37 pateints underwent different biliary reconstruction , only 2 patients developed stricture at hepaticojejunostomy stoma treated by refashioning of hepaticojejunostomy , and only 2 patients had biliary leakage from anastomatic line treated successfully by percutaneous drainage . Other complications presented in table (8) with mean value of the hospital stay was 7.1 day .

Endoscopic follow-up

In our study most of the patients treated by endoscopic approach were completely free 57% , some patients developed early complications as Pancreatitis , post-sphincterotomy bleeding and stenting migration in 2.9 % for each , and late complications as cholangitis related to stent occlusion in 4.4% treated by stent exchange and stricture recurred after 10 months in about 2.9 % and treated by dilation and restenting as show in table (6)

Outcome of endoscopic versus surgical treatment

Overall, treatment-related complications rate was significantly higher in the surgical group (37 % versus 16 % P _0.05) .In the endoscopic group mortality rate was 0% compared with 5.4 % of the surgical group (P _0.05). Recurrent stenosis was evidenced in (2.9 %) patients of the endoscopic group in (5.4 %) patients of the surgical group. Recurrent stenosis after endoscopic treatment developed earlier 10 months compared with surgical approach after 2 years; p =0.05). As show in in table(9)

Table (1): Clinical Presentations Of Postcholecystectomy Problems

Clinical Presentation	Frequency	Percent
Bile leakage	***45***	***42.9***
Jaundice	***36***	***34.3***
Cholangitis	***13***	***12.4***
Biloma	***4***	***3.8***
Abdominal pain	***4***	***3.8***
Biliary peritonitis	***3***	***2.9***
Total	***105***	***100.0***

Table (2): US finding

US Finding	Frequency	Percent
Normal CBD	***6***	***5.7***
Dilated CBD and IHBR	***36***	***34.3***
Fluid collection at GB bed	***45***	***41.9***
Echogenic shadow of stone	***14***	***13.3***
Free intraperitoneal bile collection (Biloma)	***4***	***3.8***

Table (3): Duration From Onset Till Presention

Onset of presentation	IOI	1w	2w	1m	1m-2m	2m-4m	4m-6m	6m-1y	1y- 2y	>2y	Total
bile leakage	***3***	***9***	***10***	***14***	***3***	***4***	***1***	-	***1***	-	***45***
Jaundice	-	***3***	***7***	***15***	***8***	-	-	***1***	-	***2***	***36***
Cholangitis	-	-	***1***	***10***	***1***	-	***1***	-	-	-	***13***
Biloma	-	-	***1***	***2***	***1***	-	-	-	-	-	***4***
Abdominal pain	-	-	-	***2***	***1***	-	-	***1***	-	-	***4***
Sepsis	-	-	-	***3***	-		-	-	-	-	***3***
Total	***3***	***12***	***19***	***46***	***14***	***4***	2	***2***	***1***	***2***	***105***

IOI =intraoperative injury

Table (4): Cholangiogram Finding

Cholangiogram finding	Frequency	Percent
Minor extravasation	***41***	***39.04***
Moderate and Major extravasation	***5***	***4.67***
Filling defect of stone shadow	***14***	***13.3***
Areset of dyes (ligation and procedures terminated	***25***	***23.8 2***
Stricture segments above level of cystic duct	***9***	***8.6***
Complete transected CBD	***5***	***4.8***
Normal	***3***	***2.9***
Total	***105***	***100***

Table (5): Endoscopic Management

Endoscopic Manipulation	Frequency	Percent
Leakage manipulation		
Sphincterotomy only		
minor leakage	41	60
Sphincterotomy and stent		
1- Moderate leakage	3	4.4
2-Marked leakage	2	2.9
Stone manipulation		
Stone extracted by balloon	8	11.76
Stone extracted by basket	3	4.4
Stone extracted by combined techniques	2	2.94
External lithotherapy	1	1.47
Fail of retrieval and only stent beside stone	2	2.94
Stricture manipulation		
Dilation and stenting		
10 Fr stent	1	1.4
11.5 Fr stent	2	2.9
12 Fr stent	1	1.4
Rendezvous technique	2	2.94
Total	**68**	**100**

Table (6) Endoscopic Outcome and Follow up

Follow up	Frequency	Percent
Early endoscopic complication		
- Pancreatitis	*2*	2.9
- Stenting migration	*2*	2.9
- post-sphincterotomy bleeding	*2*	2.9
Late endoscopic complication		
- Stent occlusion and cholangitis	*3*	4.4
-Stricture development		
- Further dilation and restenting	2	2.9
Over all complication rate 16%		
- Completely free	39	57
- Missed follow	18	26.5

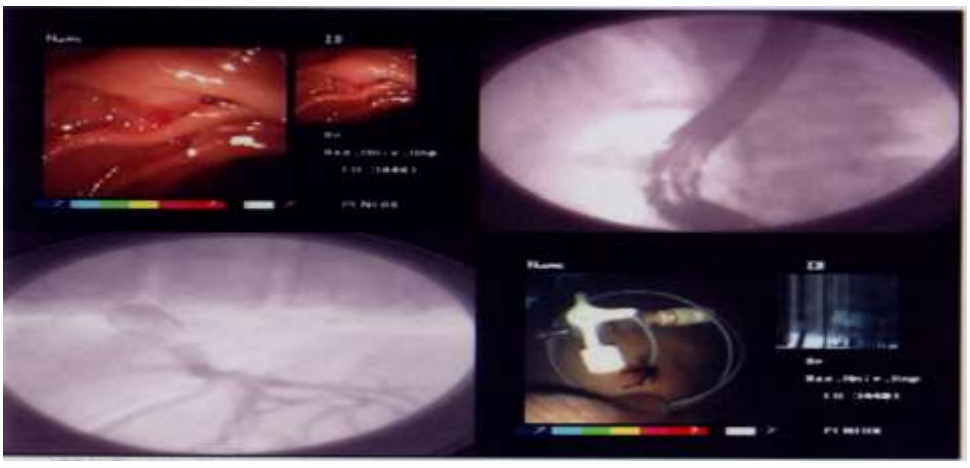


Fig (1) Show Rendezvous technique

Table (7): Surgical Intervention

Surgical intervention	Frequency	Percent
Hepaticojejunostomy	***18***	***48.6***
Choledochoduodenostomy	***2***	***5.4***
Choledochithotomy	***2***	***5.4***
Intra operative repair on T tube	***3***	***8.1***
Immediate reconstruction on T tube	***10***	***27***
Peritoneal lavage and IAD	***2***	***5.4***

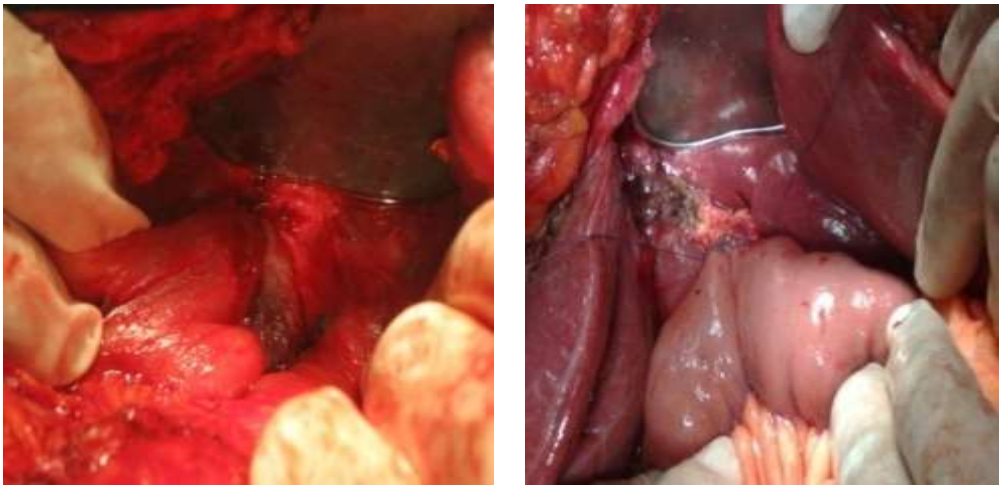
IAD = intraabdominal drains.

A **B**

Fig (2): (A) ROUX EN Y hepaticojuujnostomy for treatment of type E3 Strasburge IBD with transhepatic anastomatic silastic stent (B) postoperative PTC show good drainage

Table (8): Postoperative Follow up

Postoperative Outcomes	Number	Percent
Mortality	2	5.4
Morbidity		
-Free complication	15	40
-Wound infection	1	2.7
-Cholangitis	1	2.7
Anastomatic leak-	2	5.4
Biliary stricture-	2	5.4
Re-HJ-	2	5.4
Miscellaneous -	4	10.8
-lost to follow-up	6	16
Percutaneous drainage	2	5.4
Overall complication rate 37%		



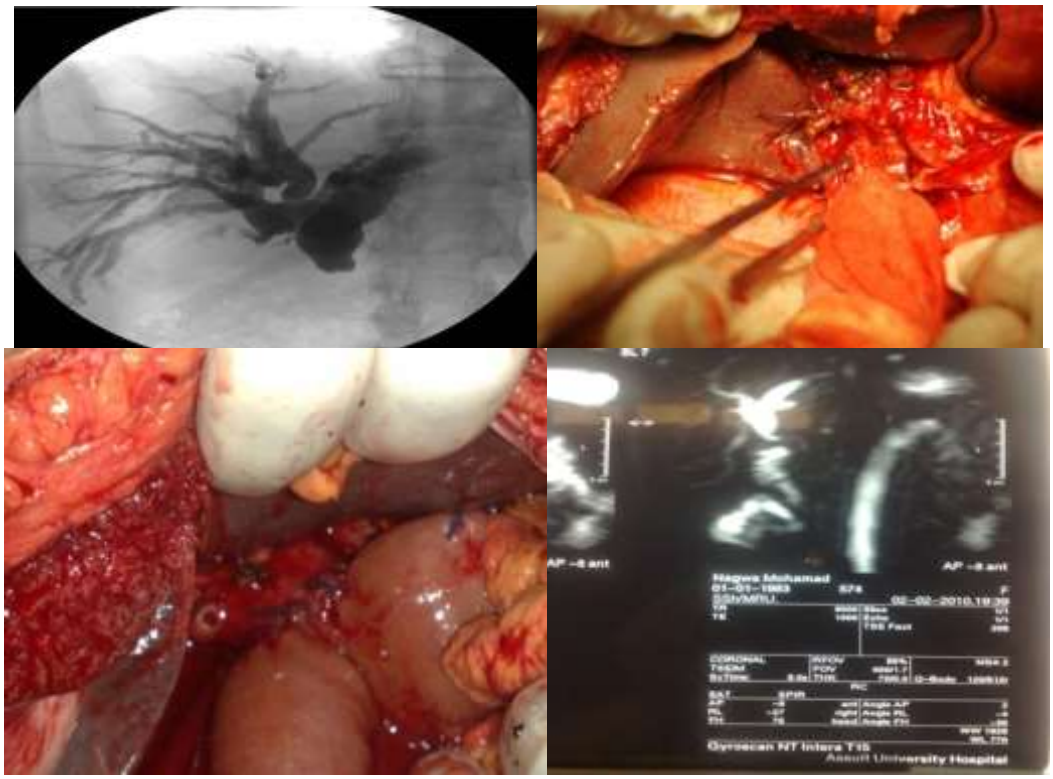
A **B**

Fig (6) A) developed stricture at hepaticojejunostomy stomal site (B) treated by refashioning hepaticojejunostomy.

Table (9): Outcome of Endoscopic Versus Surgical Treatment

	Endoscopic group N (68)	Surgical group N (37)	P value
Successful drainage	41/68	37/37	< 0.05
Procedure-related complication	16%	37%	< 0.05
Mortality	0 %	5.4%	< 0.05
-Recurrence of stenosis	2.9%	5.4%	< 0.05

A B



C **D**

Fig (7) (A)PTC show stricture at CHD ,(B)intraoperative photo show stricture at CHD ,C) hepaticojujnostomy (D) Recurrence of stenosis detected at MRCP

DISCUSSION

Postcholecystectomy problems represent challenging cases, where BDI is still a serious complications with a long-term morbidity, reduced survival, and impaired quality of life which is easier to prevent rather than to cure. (Jason k etal, 2005)

Incidence

In the current study total number of 105 patients had PCS were studied ,only 10 patients has IBDI (10/105 (9.5%) were operated in Assuit University Hospital out of 2160 patients over period of two years ,the incidence of bile duct injury was 0.46% (10/160) our incidence was comparable to the risk of bile duct injury after open cholecystectomy in a study conducted by Ghassemi, K etal 2006 which varies between 0.2 and 0.5%. The rest of our patients (95 patients, 90.5%) were referred to us from other centers

The incidence of postcholecystectomy problems was higher after conventional open cholecystectomy more than laparoscopic cholecystectomy .In contrary to the generally accepted higher incidence after laparoscopic cholecystectomy (0.2%) more than open cholecystectomy (0.1%), and usually laparoscopic bile duct injury tends to be more severe and high proximally and this may be attributed to the low incidence and affinity for laparoscopic procedures in Upper Egypt locality. Radown AA, 2009.

Age and sex

The mean age of the patients was 40 ±10,42 ranged from 18-75 years in comparison to mean age of 45.3 years with a range of 18 to 68 years that reported by Abdel –Rouf A, et al. 2010 in a study conducted between March 1994 and May 2008, with a total of 277 patients in Mansoura University .our results show that74 of patient were females (70.5%) and 31 were male (29.5%) with F /M ratio 70.5% / 29.5 , while F/M ratio was 58.5% / 41.5% in study conducted by Abdel –Rouf A, et al. 2010.

Time of detection

Most of our patients discovered at post operative period were (73.1 %) recognized in the early stage (within one month) and 24% of patients were recognized in the late stage (after one month) and only2.9% patients were diagnosed intraopertively .Other study by Radown AA 2009 shows that Presentations were early within 1 month postoperatively in 45.3% (96/210), or late after 1 month postoperatively in 54.7% (114/210).

Clinical picture of BDI

The most common clinical presentation in our study was bile leakage (42.85%), followed by obstructive jaundice (34. 3%) , Cholangitis (12.4%) , biloma (3.8%) , abdominal pain 3.8% , biliary peritonitis and biliary fistula (2.9%) which was more or less similar to results in Abdel –Rouf A, et al. 2010 study in which the most common presentation was bile leakage (44%) followed by obstructive jaundice (35%) , cholangitis(11%) and biloma (10%) .

Diagnostic work up

Abdominal US

Radiological imaging is extremely useful and is the preferred way to evaluate presence of bile duct injury. Abdominal ultrasound was done as a routine primary investigation in our study, were finding in PCS patients in our study revealed fluid collection at GB bed in 41%, dilated CBD and IHBR in 34.3%, echogenic shadow of stone in 13.3% and free intraperitoneal collection in 3.8 %. While Abdullah M 2011 reported that US revealed proximal biliary tree dilatation and disruption of continuity of the bile duct in 57.5% and abdominal collection due to bile leak in 30%**.**

Endoscopic cholangiogram

Preoperative cholangiographic delineation of the biliary anatomy is mandatory for an accurate preoperative classification of BDIs and to plan the operative strategy. (Aduna M, et al 2006).

In current study cholangiogram was done in 102 of patient. The main cholangiographic picture of patient with PCS showed minor leakage in 39 % from cystic duct , followed by arrest of dyes in 23% , filling defect of stone shadow in 13.3% , stricture above level of cystic duct in 8.6% , major leakage from transected CHD in 4.6% , and finally normal cholangiogram in 2.9%. Abdel –Rouf A, et al. 2010 revealed that bile duct injury diagnosed at ERCP was bile leakage in 64.2%, completely ligated CBD in 11.9 %, biliary stricture in 12.7% and normal cholangiogram in 11.2%.

A-Endoscopic management

1-Bile leakage

In the current study 46/68 (67%) patients of endoscopically managed patients had biliary leakage, 41 had minor bile leaks patients were

treated by endoscopic sphincterotomy only (41/46 =89 %). Endoscopically treated minor bile leaks has succeed rate 100% . Moderate leakage presented in 3 cases (6.5 %) patients treated with sphincterotomy and stent and major leakage in 2 cases (4. 3%). Only 1 patient of moderately and major leakage had surgical correction . The endoscopic succeess rate was 66% and 50% respectively compared to Wani, N. et al, 2010 study which concluded that endoscopic sphincterotomy only done in (19%), endoscopic stenting in combined sphincterotomy (25.8%), stenting only in (45.2%), and Sphincterotomy and NBD (9.7%). with succeed rate 96% for minor leakage .Another study by Dolay, K et al, 2010 who was treated low-grade leaks with sphincterotomy alone (91% success), and high-grade leaks with stenting with sphincterotomy (100% success).

2- Choledocholithiasis

In our study choledocholithiasis was treated by different endoscopic maneuver for 16 cases .Stone extracted by balloon in (8 /16cases 50%) Stone extracted by basket in 3 cases (3/16 18.75%) , by combined techniques in (2 /16 12.5%) and external lithotherapy (1/16 6.25%) .Failure of retrieval and only stent beside stone was done in 12.5 % . Such cases undergo choledocholithotomy. So the ERCP is efficient in treatment of postcholecystectomy choledocholithiasis with succees rate 87.5%.in compared to study by Gronroos, J. M. 2008 who found that postcholecystectomy choledocholithiasis was treated effectively in 92% patients. When removal of the stones was not possible, decompression of the biliary tract by implantation of the plastic stent was done in (8%).

3- Biliary stricture

Treatment of bile duct strictures are has tow goals. The first is to establish a larger lumen size, and the second is to avoid restenosis in the long term. In the current study biliary stricture occurs in 6/68 (9%), 4 patient treated by serial endoscopic dilatation and stenting for period of 24 months with only one has recurrent stricture after removal of stent and overall succees rate over (75 %) and stenosis rate 25% while Gronroos, J et al , 2008 followed 44 patients after endoscopic stenting for 9 years, reported 20% recurrence rate that occurred within 2 years of stent removal

Our succeed rate of endoscopic treatment was 75% which is higher than 35 % succees rate in the study done by Steven S. et al 2007 and those by Gronroos, J etal 2008 who had a success rate of 37 % and lower than Abdel – Rouf A, et al. 2010 who had successful rate in 82% of cases.

These differences in the succeed rate of management of postoperative biliary stricture could be explained as we and Abde-Rouf et al 2010 regarded the endoscopic success rate of stricture as successful stent insertion while Gronroos, J etal 2008 regarded the endoscopic succees rat of stricture complete no wasting of CBD caliber after 2 years**.**

There was difference in line curve of endoscopic management of biliary strictures as Redwan AA 2012 reported that increasing numbers of successful cases with an incidence of 60% at initial attempts of ERCP at 2000, reaching about 90%–95% in 2010

Endoscopic follow-up

In our study most of the patient of treated endoscopic approach were completely free 57% , some patients developed early complications as Pancreatitis , post-sphincterotomy bleeding and Stenting migration in 2.9 % for each , and late complications as cholangitis related to stent occlusion in 4.4% and stricture recurred after 10 month in about 2.9 % and treated by dilation and restenting compared to a study lambert M, et al 2012 found that ERCP showed a recurrence of stricture in 5 % ,Stricture recurred after 11 month.

Another study by Nichitailo, M et al ,2007 found that early complications (9%) after ERCP are usually directly procedure related, and consist of low grade fever, acute cholangitis, pancreatitis, and post-sphincterotomy bleeding. Late complications after stenting (11%) were stent dysfunction due to clogging with or without jaundice and overt cholangitis or stent dislodgement. Also. Ayman M, 2003 reported that bleeding at site of sphincterotomy occurred in 2 cases (6.4%). Stent occlusion occurred in 1 case (3.2%) and was treated by stent exchange. Failure of endoscopic management was recorded in 2 cases (6.4 %), due to completely transected CBD and surgical intervention was done.

B-Percutaneous transhepatic cholangiography (PTC)

PTC was performed in 9 cases (8.5 %) in our study: 5 of them showed biliary stricture

at the confluence of right and left hepatic ducts (Bismuth Type III) .In the remaining 4 cases PTC showed complete CBD obstruction with variable lengths of common hepatic duct (3 cases Bismuth I and 1 case Bismuth II) in comparison to Aduna M, et al 2006 who reported 10 out of 25 of cases has IBDI: Bismuth type III was the commonest type, followed by Bismuth type 2and type1

C-Surgical management

1-Intraoperative and immediate repair surgical

In our study 3 patients out of 37 patients surgically treated (3/37 = 8.1%) were discovered intraoperatively when the injuries were diagnosed by detection of a bile leak, They have partial injury of the anterior wall of CBD during operative time; it was repaired primarily by suturing with 3-0 Vicryl sutures after T – tube insertion through a separate incision in the CBD. Early repair done for 10 patients(10/37 = 27%) by end-to-end ductal repairs on T tube is compared to study by Lum, Y. et al 2006 , 200 cases of biliary injuries following open or laparoscopic cholecystectomy were studied; they showed that 30% of the lesions were discovered intraoperatively, seen during IOC, those managed intraoperatively by primary repair over tube . This is most probably due to the fact that this study was done in a center highly specialized in hepatobiliary diseases, and also since they have means of urgent referral to this center from other places. Quick transfer to center capable of and experienced in managing these injuries prevents delays in care and decreases the need for reoperations.

2-Urgent Planed surgical approach

In this study 2 out of 37 patients (5.4 %) had biliary peritonitis and treated by peritoneal lavage and intraabdominal drains, surgical repair was delayed for 6 weeks. To allows the inflammation in the right upper quadrant to subside prior to definitive reconstruction. In compared to a study by Lamberts, M, et al., 2012 only 2.5% of patients had biliary peritonitis and treated and by peritoneal lavage.

3-Planed surgical approach

In our study 37/105 patients (35%) underwent biliary reconstruction, including 18/37 cases (48%) by Roux-en-Y Hepaticojejunostomy, with anastomatic strictures in 2 patient 5.4% developed after 24 month in comparison to a study by Radwan AA 2009 found that 1 patient out of 18 developed anastomotic stricture and was treated by percutaneous manipulation and stenting .

Surgical follow up (Morbidity and mortality)

In the current study the most common surgical complications were wound infection (2.7 %) which compared to 3.1% at Abdulla M, 2011 study.The percent of anastomatic leakage in our study is 2.7% which is nearby to 3.1% at Jason K. et al 2005 study.

In the current study the postoperative biliary stricture was occured in 5.4 % of Pateints who managed by refashioning HJ which is compared to 2.5% of patients required surgical reintervetion (Refashioning) as a result of initial treatment failure or restenosis in study done by Ghassemi, K. et al 2006 and 3.1 % in Abdulla M , 2011 study .The postoperative mortality rate in our study is 5 .4 %, complications rate is 37% and complex reconstruction surgery achieved success in 89% of cases (16/ 18) compared to study by Diamantis T et al, 2005, the mortality rates from bilioenteric bypass operations is 7.3%, and complication rates approached 35%.These complex reconstructions achieved success in 95% of patients.

In our study overall treatment-related complications rate was significantly higher in the surgical group (37 % versus 16 % P- 0.05), in the endoscopic group mortality rate was 0% compared with 5.4 % of the surgical group (P - 0.05). Recurrent stenosis was evidenced in (2.9 %) patients of the endoscopic group and (5.4 %) in patients of the surgical group. Restenosis after endoscopic treatment developed before10 month compared with surgical approach 2 years; p =0.05). comparing to a study done by Adarsh C, 2006 found that a series of 35 surgically treated patients who were treated over an identical interval as 66 endoscopically treated biliary strictures Early complications were more common (p 0.05) in the surgical group (bleeding, bacteraemia, bile leakage), whereas late complications were more common in the endoscopic group (cholangitis, stent migration) . Recurrent stricture after occurred in 6 patients (17%) after a mean period of follow-up of 40 month after surgery. Recurrent stricture occurred in 8 patients (12%) after a mean follow-up of 3 month after stent removal.

Conclusion

A multidisciplinary approach between biliary endoscopist, surgeon and radiologist is required for managing patients in many phases

of treatment of BDI. Endoscopic management is relatively simple, reversible, and minimally invasive. Thus, endoscopic management should be an integral part of the therapeutic algorithm in the majority of patients with significant biliary tract injuries. However, the success of endoscopic therapy depends upon the type of injury. An attempt at endoscopic therapy does not preclude subsequent surgical intervention and endoscopic stenting should be seen as a possible definitive therapy and at least a bridge to surgery.

REFERENCES

-*Abdel-Raouf A, Hamdy E, El-Hanafy E, El-Ebidy G (2010): Endoscopic management of postoperative bile duct injuries: a single center experience. Saudi gastro journal 6(1):19-24. doi: 10.4103/1319-3767.58763.*

-*Adarsh Chaudhary (2006) Treatment of post-cholecystectomy bile duct strictures pushes or sidesteps? Indian Journal of Gastroenterology Vol 25. P 54 -58*

-*Aduna M, Larena JA, Martin D (2006): Bile duct leaks after laparoscopic cholecystectomy: Value of contrast-enhanced MRCP. Abdominal Imaging after laparoscopic cholecystectomy: a prospective follow-up analysis*

-*Ayman M. Hassanien (2003): Endoscopic management of biliary leakage after cholecystectomy. Initial study . Egyptian Journal of Surgery Vol. (22), No. (4), Oct., 2003*

-*Connor S, Garden OJ. (2006) Bile duct injury in the era of laparoscopic cholecystectomy. Br J Surg; 93:158–68*

-*Diamantis T, Tsigris C, Kiriakopoulos A, et al., (2005). Bile duct injuries associated with laparoscopic and open cholecystectomy: an 11-year experience in one institute. Surg Today; 35:841-45*

-*Dolay, K., A. Soylu and E. Aygun (2010). "The role of ERCP in the management of bile leakage: endoscopic Sphincterotomy versus biliary stenting." J Laparoendosc Adv Surg Tech A 20(5): 455-59.*

-*Frilling A ،Li J, Weber F (2012): Major bile duct injuries after laparoscopic gastrointestinal and liver diseases, 8th ed Philadelphia: 1419 –37 .*

-*Ghassemi, K. F. and J. N. Shah (2006). "Postoperative Bile Duct Injuries." Techniques in Gastrointestinal Endoscopy 8(2): 81-91*

-*Gronroos, J. M. (2008). "Endoscopic management of postcholecystectomy bile duct strictures." J Am Coll Surg 207(5): 786-787; author reply 87*

-*Jason K. Sicklick, Melissa S. Camp , Keith D. Lillemoe, Genevieve B. Melton, Charles J. Yeo , Kurtis A. Campbell ,.(2005) Surgical Management of Bile Duct Injuries Sustained During Laparoscopic Cholecystectomy Perioperative Results in 200 Patients . Ann Surg; 241: 786–95*

-*Jaunoo, SS. Mohandas, L.M. Almond. (2010) Postcholecystectomy syndrome (PCS) International Journal of Surgery 8 15–17*

-*Lamberts, M. P., M. Lugtenberg, M. M. Rovers, A. J. Roukema, J. P. Drenth, G. P. Westert and C. J. van Laarhoven (2012). "Persistent and de novo symptoms after cholecystectomy: a systematic review of cholecystectomy effectiveness." Surg Endosc*

-*Lum, Y. W., M. G. House, A. J. Hayanga and M. Schweitzer (2006). "Postcholecystectomy syndrome in the laparoscopic era." J Laparoendosc Adv Surg Tech A 16(5): 482-85.*

-*Mahmoud Abdallah (2011): Bile duct injuries associated with laparoscopic and open cholecystectomy : Signal center experience . Egyptian Journal of Surgery Vol. 30, No. 3, July 2011*

-*Nichitailo, M. E., A. V. Skums, V. P. Shkarban and A. I. Litvin (2007). "[Surgical treatment of the postcholecystectomy bile duct strictures and injuries]." Klin Khir(2-3): 21-25.*

-*Nuzzo G, Giuliante F, Giovannini I, et al., (2003). Bile duct injury during laparoscopic cholecystectomy results of an Italian National Survey on 56,591 cholecystectomies. Arch Surg; 140:986-92.*

-*Redwan, A. A.(2009) "Multidisciplinary approaches for management of postcholecystectomy problems (surgery, endoscopy, and percutaneous approaches)." Surg Laparosc Endosc Percutan Tech 19(6): 459-69.*

-*Redwan A.A (2012): complex postcholecystectomy biliary injuries: management with 10 year experience in major referral center .j laparoendoscopy .Adv surg A:2012 JUL 22:539-49*

-***S**teven S. Tsoraides, MPH, Amy I. Cha, and David L. Crawford,. (2007) Postcholecystectomy Biliary Symptoms .j surg; 11:96*

-***W**ani, N. A., N. A. Khan, A. I. Shah and A. Q. Khan (2010). "Post cholecystectomy syndrome. Saudi J Gastroenterol 16(4): 295-98.*

المعالجة التدرجية لمشاكل مابعد استئصال المرارة با ستخدام الجراحة والمنظار

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إن استئصال المرارة عن طريق الفتح او المنظار وسيلة مأمونة وفعالة لعلاج المرضى الذي يعانون من أعراض الحصوات في المرارة وعلى الرغم من أن المضاعفات المرارية تحدث مع كليهما إلا أنها كانت أكثر شيوعا مع بداية تعلم استئصال المرارة بالمنظار و تشمل تسرب السائل المراري من القناة المرارية نتيجة أستئصال المرارة ، إصابات القناة المرارية ، نزول حصوات في القناة المرارية بعد استئصال المرارة و التهاب البنكرياس الحاد . وتعتبر مضاعفات الإصابات المرارية هي الأكثر خطورة و قد أفادت الدراسات بأن أعلى معدل إصابات القناة المرارية يحدث نتيجة لاستئصال المرارة بالمنظار أكثر من الفتح الجراحي (٠.٦% ، ٠.٣ ٪) على التوالي كما أن هناك بعض الدراسات التي أبلغت عن تسري السائل المراري والتي قد تصل إلى ١١ ٪ بعد المنظار الجراحي ولذلك فان اختيار العلاج المناسب مهم جدا لأنه قد يجنب المريض مضاعفات خطيرة مثل التشمع ، و الفشل الكبدي والوفاة.

الهدف من هذا العمل: دراسة مستفيضة وتقييم التقنيات المختلفة (الجراحة والمناظير) والجمع بين الجراحة و المناظير لحل مشاكل ما بعد استئصال المرارة.

المرضى والأساليب: أجريت هذه الدراسة في مستشفيات جامعة أسيوط (قسم الجراحة ومركز مناظير الجهاز الهضمي والكيد) على المرضى من قسم الجراحة و وحدة المناظير وادرج في هذه الدراسة كل المرضى الذين يشكون من مشاكل ما بعد استئصال المرارة وتم عمل الاتي :

١-الموافقة على المشاركة في البحث
٢-أخذ تاريخ مفصل دقيق ٢-الفحص السريري الدقيق.
٤-الفحوصات اللازمة لتشخيص المشكلة على النحو التالي :
٥- اختبارات وظائف الكبد والموجات فوق الصوتية لجميع الحالات.
٦- التصوير بالرنين المغناطيسي لبعض الحالات.
٧-التصوير بالصبغة على القنوات المرارية لجميع الحالات بواسطة :
٨- عبر أنبوب حرف تي في الحالات التي عرضت مع أنبوب حرف تي في المريض.
٩- المنظار في معظم الحالات.

النهج الجراحي على النحو التالي:

١-ا لعمليات الجراحية العاجلة: في حالات التهاب البريتوني المراري بسبب تعفن الدم وتليف واسع النطاق ولذلك نكتفي بالغسل البريتوني والصرف والذي قد يكون فعال ، و لحسن الحظ قد نتمكن من اجراء عملية جراحية نهائية في بعض الحالات بواسطة إصلاح على أنوبة حرف تي أو عملية إصلاح أولي .

٢ - **العمليات الجراحية المخطط لها:** عادة ما يسبقها أشعة بالصبغة على القنوات المرارية تم القيام بها على النحو الأتي:

- تفتيت الحصوات وفك الربط مع أنبوب حرف تي إذا اكتشف الربط في وقت قريب جدا بعد العملية أو اجراء إصلاح أولي للإصابة.
- عملية تحويلة مع استخدام Roux- eny للإصابة المكتشفة في وقت متأخر ،أو عند وجود تضيق في القناة المرارية أو ان حالة المريض سيئة مع المنظار المتكرر والدعامة.

النهج بالمنظار وتم ذلك لمعظم الحالات التالية:

١- تسرب السائل المراري:وتم التعامل معه بواسطة شق عضلة القنوات المرارية في الحالات البسيطة والدعامة في الحالات الكبيرة
٢- التضيق المراري: وتم عمل التوسيع والدعامة.
٣-حصوات القنوات المراية : و تم علاجه بواسطة شق عضلة القنوات المرارية واستخراجها باستخدام سلة المنظار أو التفتيت

وفي هذه الدراسة تم تقييم ١٠٥ مرضى من الدين يعانون من إصابات القناة الصفراوية، ٧٤ منها من الإناث و ٣١ من الذكور حيث ترا وحت أعمارهم ما بين ١٨ -٧٥ سنة.

تم تشخيص ٣ مرضى اثناء اجراء الجراحة بينما تم تشخيص ١٠٢بعد العملية استئصال المرارة بعد فترة تتراوح من بضعة أيام إلى أكثر من سنتين. تم تقييم جميع المرضى من خلال أخذ التاريخ الدقيق والفحص السريري . وقد تم عمل الموجات فوق الصوتية في البطن لجميع المرضى. تم إجراء تنظير القنوات المرارية والبنكريا سية الارتجاعي بنجاح كأداة للتشخيص في ١٠١ وكان أيضا ناجحا في علاج ٦٨ من هذه الحالات. وخضع ٣٧ مريض لعمليات إصلاح جراحية لاصابات القنوات المرارية و كانت نتائجها على المدى القصير مرضية.