

Subcostal Gridiron Incision for Biliary Surgery

Pages with reference to book, From 7 To 9

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Abstract

This retrospective study audited all the extrahepatic biliary operations performed through a subcostal muscle splitting incision between January, 1979 and June, 1995. Of the 400 patients subjected to biliary surgery 340 (85%) were females and 60 (15%) males. One hundred and eighty (45%) patients presented with symptoms of acute and 220 (55%) with chronic cholecystitis. Most (95%) of the operations were performed electively. Simple cholecystectomy was performed in 320 (80%) patients and 72 (18%) had common bile duct exploration for stones. Of these 67 had choledochoduodenostomy and 5 a polythene tube drainage of common bile duct. The overall morbidity of the procedure was 13.5% of which 3.5% were procedure related complications and 10.0% general complications. Only two deaths occurred during the study giving a mortality of 0.5%. This technique has greatly reduced the hospital stay, the amount of blood loss during operation and post operative pain. No patient had incisional hernia or wound dehiscence and all the patients were back to work early. The results of this study suggest that this incision may be used with advantage elsewhere (JPMA 46:7, 1996).

Introduction

Several incisions have been described for biliary surgery. Of them the most commonly used are right paramedian and Kocker's subcostal incision. Improvements have been made in the technique which enable procedures to be performed through smaller incisions and minimal trauma¹. Laparoscopic surgery and mini laparotomy cholecystectomy are the recent advances but these procedures need surgical expertise, special equipments and proper case selection.

Biliary operations are one of the most frequently performed surgical procedures on the upper abdomen in Pakistan. A rapid and safe approach to the biliary tract which causes minimal post operative discomfort and early discharge from hospital are features of importance in a country where a rapid surgical turnover is the biliary tract is described which may reduce both the length of operation and the amount of bleeding which is, normally encountered in biliary surgery.

Patients and Methods

All the records of 400 patients having undergone extra-hepatic biliary surgery through a muscle splitting incision, between 1979 and 1995, were studied. Investigations performed, pre-operative state of health, operation notes, post-operative medications and complications and their condition at discharge was reviewed. All patients attended the out-patient clinic after 4 weeks of operation. Majority (70%) of them had responded and their complaints were noted.

The subcostal Gridiron incision was performed under general anaesthesia with muscle relaxation. A 3-4 inch right subcostal incision was made one and half inch below the subcostal margin proceeding laterally from the outer border of the right rectus sheath. The skin edges were retracted and the external oblique was divided along the line of fibres. The internal oblique and transversus abdominus were split in the line of their fibres. The peritoneum was opened transversely and deep retractors used to aid exposure.

Closure of the incision was by continuous 2'0 chromic catgut suture for the peritoneum. Internal

oblique and transversus abdominus were approximated with interrupted Chromic catgut sutures followed by interrupted catgut closure of external oblique aponeurosis.

Results

Of the 400 cases, 340 (85%) were female and 60 (15%) males. The mean age was 52 years and 18% were over 65 years. One hundred and eighty (45%) presented with symptoms of acute and 220 (55%) with chronic cholecystitis. Almost all the cases were operated electively. 380 (95%) patients had cholecystectomies during the same hospital stay.

Three hundred and twenty (80%) had simple cholecystectomy and 72 (18%) cholecystectomy with CBD exploration. Of these choledochoduodenostomy was performed in 67 and polythene tube was inserted for biliary drainage after exploration in cases. Choledochoduodenostomy for carcinoma head of pancreas was done in 8 patients. No difficulties were encountered when choledochotomy or choledochoduodenostomy was required, a procedure which is being increasingly used in jaundiced patients with choledocholithiasis or obstructive jaundice due to any other cause.

During the study lateral border of rectus required forceful retraction in 50 (12.5%) patients and in 10 the rectus muscle had to be divided. Assessment of blood loss at operation indicated losses of between 40-280 ml. Duration of stay after operation ranged 3-20 days (mean 5.2 days).

The post-operative complications noted during the study were wound sepsis in 4 (1%) cases, 2 after choledochoduodenostomy and 2 after exploration of CBD and insertion of polythene tube, haematoma of the wound in 6 (1.5%) patients which rapidly resolved without further intervention, 4 patients had re-exploration, the first two with sub-hepatic abscesses requiring drainage. Two patients developed biliary leak requiring drainage. No difficulties were faced using the original incision for reoperation. None of the patients operated upon, developed dehiscence of the wound or incisional hernia. All this gives a procedure related morbidity of 3.5%.

The general morbidity noted was 10% (40 complications) which included 20 cases of lower respiratory tract infection, 10 cases of atelectasis, one of cardiac arrhythmia, one of ventricular fibrillation, one of angina pectoris, 2 of urinary tract infection and two cases of urinary retention. The combined general and procedure related morbidity was 13.5%.

Only two deaths occurred during the study, both due to myocardial infarction, 3 and 7 days respectively after the operation giving an overall mortality of 0.5%.

Discussion

The surgical removal of the gall bladder has been the gold standard for the treatment of symptomatic gall stones². The standard Kocker's incision is usually preferred to paramedian approach because the exposure is placed directly over the gallbladder. Furthermore, the subcostal incision heals more rapidly and with less discomfort probably because it is in the line of the normal skin crease³. This incision is preferred because of lower incidence of pulmonary and abdominal complications' and less pain than vertical paramedian incisions⁴.

Surgical wound does contribute to morbidity and mortality. therefore, attempts have been made to make the trauma minimal. First mini-laparotomy cholecystectomy was introduced and then the laparoscopic method. The results of mini-lap cholecystectomy were so good that it can be compared even to the laparoscopic surgery².

The present procedure has further decreased the morbidity and mortality with the mortality in this study being 0.5% as compared to 1.2% in muscle cutting open procedure⁵. This is better because in muscle

cutting there may be considerable bleeding from the Cut edges. a complication which is time consuming and potentially dangerous. In this study, the ease of access that a subcostal incision affords was combined with One in which bleeding is reduced to minimum. An additional advantage of this technique is that-intercostal nerve damage is minimal. Most patients requiring biliary operations in this unit have a wide costal angle which makes this procedure particularly suitable.

This technique is suitable for cholecystectomy, choledochotomy and choledochoduodenostomy. The approach is usually without complications and wound sepsis occurred in patients having bile duct surgery. because the bile is commonly infected⁶. The duration of hospital stay has also been reduced using the muscle splitting incision as compared with aKocker's incision.

In view of the satisfactory results this technique could have a wider application in biliary tract surgery. The direct approach, combined with minimal bleeding and few post-operative complications, makes this an ideal procedure for cholecystectomy or choledochotomy.

References

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