Early Versus Delayed Surgery for Acute Cholecystitis

Pages with reference to book, From 210 To 213

S. A1-Khuwaitir (King Khalid University Hospital, Riyadh. Saudi Arabia.)

Abstract

Early or delayed surgery in acute cholecystitis remains a controversial issue. In. a retrospective study 46 patients with early cholecystectomy were compared with 54 having delayed surgery in respect of diffic'ulty of operation, incidence of complications, frequency of diagnostic errors and time spent in hospital. Age and Sex distribution and operative procedures were similar in the two groups. No significant differences were observed in post-operative morbidity and mortality rates, technical difficulty of cholecystectomy and diagnostic error rates in two groups. However, greater expertise is required to do cholecystectomy in acute cases. The most striking difference between the two groups was the time spent in hospital. The total hospital stay was 8.5 days more in the delayed, as compared with the early group. of choice provided the surgeon is familiar with theEarly cholecystéctomy is suggested as the treatment operation in acute cases.(JPMA 34 : 210, 1984).

Introduction

There are two forms of management for acute cholecystitis: (i) the traditional way in which conservative measures are followed two or three months later by elective choIecystectomy and (ii) the more aggressive, early cholecystectomy within seven days of admission. DuPlessis and Jersky,[1] advocated the traditional form of management (initial conservative treatment followed two to three months later by elective cholecystectomy) for three main reasons: a) uncertainty of diagnosis[2], b) the risks of emergency surgery, especially in old, obese and diabetic patients, c) the low mortality rate and complications of acute cholecystitis[3].

A more aggressive surgical approach[4,5] (early cholecystectomy within seven days of admission) has been favoured for the following reasons: a) the misdiagnosis rate is low, especially if the patient is observed for twenty-four to forty-eight hours,[6,7] b) other potentially dangerous conditions (i.e. perforated duodenal ulcer or high subhepatic appendicitis) misdiagnosed as acute cholecystitis are treated without delay,[4,8] c) the risks of complications such as perforated gall bladder are diminished,[9,10] d) dissection is easier during acute stage[11]

e) less time is spent in the hospital which means a lower hospital cost and shorter periods of working incapacity.[5,101,2] Controlled trials, from Sweden[5] and U.K.[10] suggest thai mortality and morbidity are similar in both the approaches.

Material and Methods

Between 1973- 1983, 1680 patients were admitted with acute abdominal pain in three hospitals of Riyadh. One thousand two hundred in Civil hospital (C.H), 400 in king Abdul Aziz University hospital (KAUB) and 80 in king Khalid University hospital (KKUH).

Of these, 120 were diagnosed as acute cholecystitis and only 100 cases were selected for the study. The criteria for selection were a) acute right upper quadrant abdominal pain with pyrexia (37.5^{o}C), trachycardia, abdominal tenderness, rebound tenderness and guarding in the right upper quadran±, b) neutrophil leucocytosis and normal serum amylase (to exclude acute. pancreatitis), c) the presence of

gall stones on ultrasound examination or plain abdominal X-ray and the absence of gas under the diaphragm (to exclude perforated duodenal ulcer). Intra. venous cholangiograms, done in few cases. There was no strict policy in the selection for early or delayed cholecystectomy. The form of treatment recommended was largely influenced by the availability of staff and beds. The early group included patients who had their operation within seven days of admission on a normal operating list after full assessment. Patients who had laparotomy and cholecystectomy as an emergency were excluded from this group.

The delayed group included patients who were admitted and treated initially with conservative measures (intravenous infusion, analgesics, antibiotics, ampicillin or cephalosporins, and gastric aspiration if necessary) for seven to ten days until the acute symptoms had subsided. Then they were discharged and readmitted for elective surgery within two to three months. The surgical procedures were more or less the same in both groups. Some patients had paramedian and others subcostal incisions. Per operative cholangiogram was performed as a routine unless technical difficulties were met. Exploration of the common bile duct was carried out whenever indicated.

Results

A total of 100 cases were selected for the study, of these 46 were included in the early and in the delayed group (Table I).

Table I Classification of the Selected Groups.

Hospital	Early Group of Patients		Delayed Group of Patients	
	No. Male	No. Female	No. Male	No.Female
C. H.	8	19	8	24
K.A.U.H.	6	10	4	11
K.K.U.H.	1	2	2	5
Subtotal	15	31	14	40
Total	46		54	

There was no significant difference in sex or age between the two groups. Relatively more females, however, had delayed surgery (Fig. 1).

AGE IN TWO GROUPS

FIGURE-I

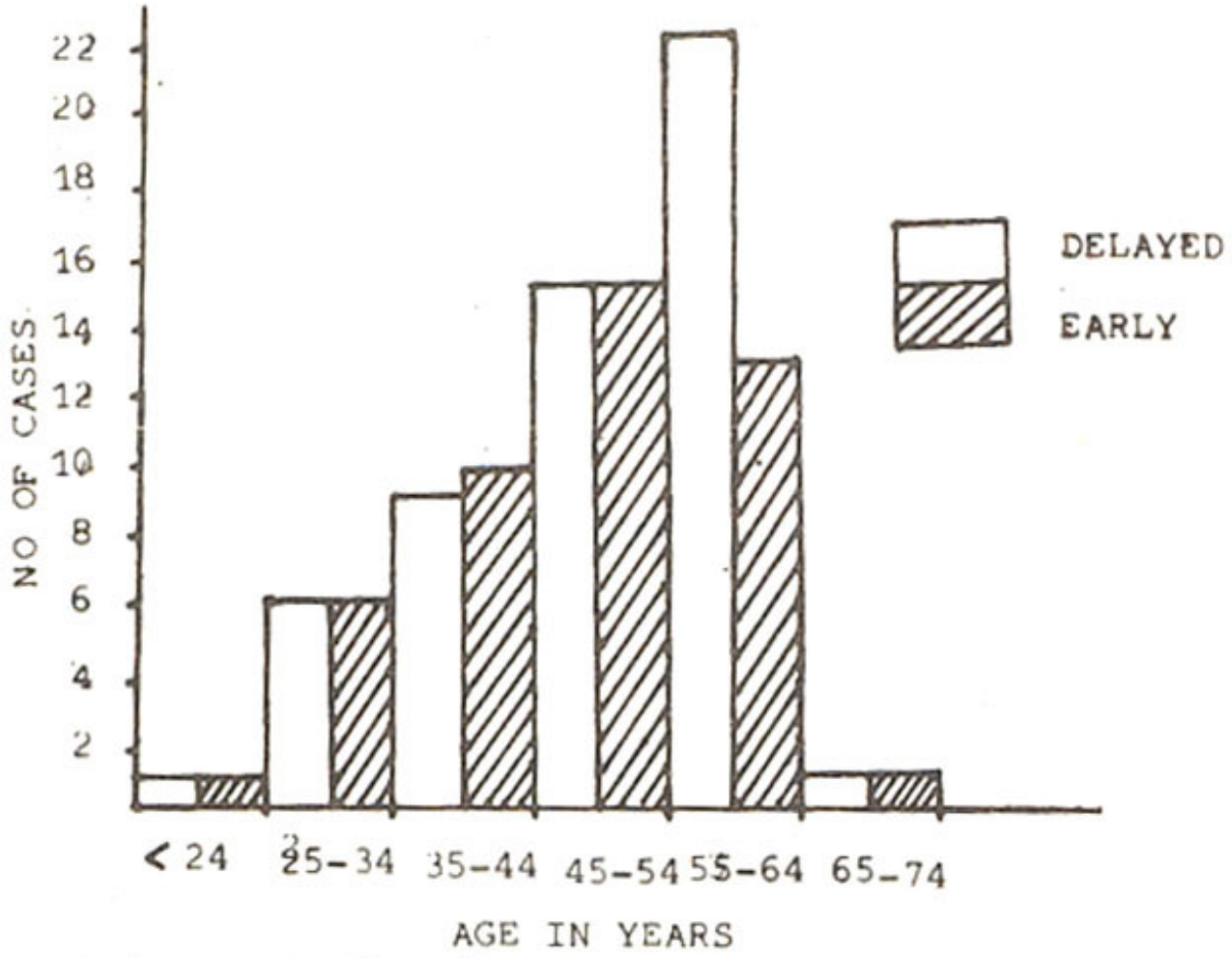

Fig. Age in Two Groups.

The operations were carried out by different surgical teams headed by the same consultant (S.A.K.) who attended about 75% of the operations in both series.

The surgical procedures included cholecystectomy, per operative cholangiogram (unless technical difficulties were met) and choledochotomy when indicated. Other procedures e.g. choledochoduodenostomy, were rarely indicated.

Table II

Operating Time in Early and Delayed Groups.

Operation	Early Group		Delayed Group	
	No. of Cases	Mean Time*	No. of Cases	Mean Time*
Cholecystectomy	28	60 + 22	41	55 + 20
Choledochotomy	15	90 + 34	9	95 + 30
Other Procedures	3	105 + 42	4	100 + 35

* = min + s.d.

Table II shows that there was no significant difference in the operating time in two groups.
The overall length of stay in the delayed group was 18.5 days as compared with 1.1 days in the early group (Table III).

Table III

Length of Hospital Stay.
(Mean stay in days)

Early	Early Cholecys-tectomy (46)	Delayed Cholecys-tectomy (54)	Difference
Initial Admission	--	9	9
Late Admission (pre op, op, post op)	10.1	9.5	Not Significant
Total	10.1	18.5	+ 8.5

The complicated cases in both groups had prolonged lengths of stay.
In the delayed group there were at least two hospital admissions compared to a single admission in the early group. Some of the patients in the delayed group were admitted about four times within a two to three month period.
There were no deaths in either group. Nine cases in the early group had complications as compared with eleven cases of the delayed group. Wound infection was somewhat more frequent in the early cholecystectomy group (4 casis) as compared to the delayed group (2 cases). Both patients responded to conservative treatment.

Table IV
Post-Operative Complications in Both Groups.

	Early Cholecystectomy	Delayed Cholecystectomy
Wound Infection (pus)	4	2
Intra-abdominal abcess	2	2
Ileus	1	1
Chest infection	1	3
Biliary fistula	O	2
D.V.T.	1	1
Deaths	0	0

Table IV summerizes the poe-operative complications in both groups.
Forty.six cases were treated by early operation. An incorrect diagnosis was made in one case (2%). This patient had perforated duodenal ulcer (there was no gas under the diaphragm and cholelethiasis was diagnosed on ultrasound). Exploration of the patient four days later for cholecystectomy showed a sealed perforated duodenal ulcer.
Fifty.four cases were treated by delayed cholecystectomy and misdiagnosis was made in one case (2%). This patient had carcinoma of the pancreas associated with gall stones.

Discussion

The only chance of finally settling the controversy concerning the best form of management of acute cholecystitis is a long term randomined controlled early and delayed surgical approach. We are aware of only two such controlled trials, one from Sweden[4] and the other from Finland[3] as well as an interim report from U.K[2] comparing the two forms of treatment. The retrospective study presented here has its limitation as to the validity of the data and the difficulties in selection of comparable groups. In this study, as in Van der Linden and Sunzel,[4] the post.operative mortality and morbidity showed no significant difference in either group, although wouhd infection was somewhat more frequent in the early group and biiary fistula was recorded only in the delayed group.

Also there was no significant diagnostic error in either group. With early surgical approach, other potentially dangerous conditions (i.e. perforated duodenal ulcer) misdiagnosed as acute cholecystitis are treated without delay.

Another controversy is the claimed technical difficulty of performing cholecystectomy during the acute phase. In the present study operating time and the incidence ‘of minor operative complications were equal in the two groups. Cholecycstectomy was possible in all patients in the early group, however familiarity with operations for acute cholecystitis is necessary.

The total hospital stay was eight and a half days more in the delayed group than in the early Surg. group. This difference, of course, is highly significant and was mainly due to the earlier admissions in the delayed group. Also, some of the patients in the delayed group were admitted three to four times during the three month visiting period. Early surgery in these cases is therefore more cost effective than delayed approach.

This study supports the view that early cholecystectomy performed by a surgeon thoroughly famffiar with this operation is the treatment of choice.

References

1. DuPlessis, DJ. and Jersky, J. The management of acute cholecystitis. Surg. Clin. North Am., 1973; 53 : 1071.
2. Halasz, N.A. Counterfeit cholecystitis. Am. J Surg., 1975; flO:189.
3. Effis, H. and Cronin, K. Bile peritonitis. Br. 3. Surg., 1960;48: 166.
4. Van der Linden, W. and Sunzel, H. Early versus . delayed operation for acute cholecystitis. Am. I., 1970; 120 : 7
5. Van der Linden, W. and Edlund, G. Early versus delayed cholecystectomy; the effect of a change in management. Br. 1., Surg., 1981; 681. 793.
6. Raine, P.A. and Gwin, A.A. Acute cholecystitis. Br.J. Surg., 1975;62 :697.
7. Essenhigh, D:M. Management of acute cholecystitis. Br. 3. Surg., 1966; 53 1032.
8. Payne, R.A. Evaluation of the management of acute cholecystitis. Br. 3. Surg., 1969; 56 200.
9. Gagic, N., Frey, C.F. and Gaines, R. Acute cholecystitis. Surg. Gynecol. Obstet., 1975; 140 868.
10. MacArthur, P., Chuschierl, A., Sells, R.A. et al. Controlled clinical trial comparing early with interval cholecystectomy for acute cholecystitis. Br. J. Surg., 1975; 62 850.
11 Smith, 3., Smith, R. and Sherlock, S. the gall bladder and bile ducts. Butterworths, 1964, pp. 108-18.
12. Sokhi, G.S. and Longland, C.J. Early and delayed operation in acute gall-stone disease. Br. 3. Surg., 1973;60: 937.