

CHOLECYSTECTOMY IN BIR HOSPITAL NEPAL[△]

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SUMMARY

Out of 500 cases of cholecystectomies done in the last three years, a random sample of 174 cases have been analysed and presented. The prevailing incidence of gall stones and its prevalence age and sexwise has been presented. The types of stones has been analysed macroscopically and result of some bile cultures and wound infection rate, incidence of carcinoma gall bladder and mortality rate has been presented. The incidence of common bile duct exploration and its result has been presented.

MATERIALS AND METHODS

The incidence of cholecystectomy has been rising from year to year and to-day the most common elective major abdominal operation in our hospital is cholecystectomy. Out of 500 cases

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operated in the last few years (12. 10. 1978-27. 11. 1981) only 174 cases are included in this study randomly. This study presents the sign and symptoms, age and sex distribution, available investigations, operative findings, types of stones in naked eye appearance, incidence of bile duct explorations and immediate post operative complications. The follow up of our patients have been nil either due to non-reporting by the patients themselves or poor maintenance of the records even if they presented. Every surgeon if asked might quote some cases which they have followed up sporadically.

AGE

The age incidence in the series is as follows:—

<u>Age in years</u>	<u>No. of cases</u>	<u>%</u>
0 - 5	0	0
6 - 10	1	0.57
11 - 20	8	4.59
21 - 30	43	24.71
31 - 40	51	29.34
41 - 50	43	24.71
51 - 60	19	10.91
61 - 70	5	2.84
71 - over		2.29

Youngest age 9 years.

Oldest age 78 years.

According to Brain et. al. cholelithiasis can occur at any age. The incidence of cholelithiasis is increasing and may require cholecystectomy and choledochostomy at the same time.

According to Illingworth et al gall stone have been reported in foetus and neonates thought to be pigmented stones due to haemolysis, however our lowest age was 9 years. The oldest in our series was 78 years though in other places even patients of over 90 years age have been operated for gall stones. The incidence of gall stones shows a maximum age incidence between 3rd and 4th decades in our series.

TABLE 2

SEX

The sex incidence is as follows:—

<u>Sex</u>	<u>No of cases</u>	<u>%</u>	<u>Female : Male ratio</u>
Female	145	83.54	5:1
Male	29	16.66	

TABLE 3

GEOGRAPHIC DISTRIBUTIONS

<u>Place</u>	<u>No. of cases</u>	<u>%</u>
Kathmandu Valley	144	82.75
Hills	13	7.47
Tarai	17	9.78

SYMPTOMATOLOGY

The main symptomatology as seen in acute cholecystitis has been almost the text book picture of biliary colic but in cold cases we have found that most of the patients complain of epigastric pain which confuse us with peptic ulcer. The relation to meals are not usually well marked. History of noticeable jaundice has been present in 44 cases only representing 25.28% of the 174 patients submitted to cholecystectomies. Gall bladder was palpable in 12 cases only.

INVESTIGATIONS

Routine investigations like total WBC count, differential counts, Hb% blood sugar, blood urea; stool, urine have been carried out in almost all cases. Any worm found in stool (Ascariasis, Giardiasis, and ameobiasis are fairly common in this part of world) were treated before operations.

In this series we could find the record of 25 patients who had serum cholesterol done and only two of them had value above normal (260 mg %, 280 mg %). Serum amylase done in a few cold cases have been within the normal limits. The Hb% of the operated cases were

mostly at the range of 10-11 gm%. Radiological findings on oral cholecystography show non functioning gall bladder in 94 cases (54.02%) translucent gall stones (representing as filling defect) in 74 cases (44.82%) and opaque gall stones in 2 cases (1.14%). Bile culture obtained at operation from 26 cases yielded no growth in 18 cases, E. Coli in 5 cases, Staphylococcus aureus in 2 cases and Klebsiella in 1 case. It is to be noted that anaerobic culture was not done.

OPERATIVE FINDINGS

Out of the 174 cases opened for cholecystectomies, 171 cholecystectomies were carried out, 3 could not have cholecystectomy done because of advanced carcinoma of gall bladder with secondaries. Out of 171 cases, 135 had gall stones, one with cholecysto-duodenal fistula, three along with carcinoma gall bladder, one case had cholecystectomy with transduodenal sphincteromy because of impacted stone in ampulla of Vater. One had cholecysto-duodenostomy due to undilated sphincter of Oddi, one case of carcinoma head of pancreas had choledochoduodenostomy with cholecystectomy. Four cases were operated for left over stones in common bile duct. In 29 cases records were not clear as to the cause of cholecystectomy, whether with a stone or calculus. Common bile duct were explored in 68 cases, out of which 49 cases contained stones, in rest of 19 cases the common bile ducts were dilated but did not yield any stones.

TABLE 4

TYPES OF STONES

Type of stone	No. of pt. with stones in gall bladder (135 cases)		No. of pt. with stones in common bile duct (49 cases)	
		%		%
Mixed	96	71.11	31	62.26
Cholesterol	31	22.96	10	20.40
Pigmented	6	4.44	2	4.08
Biliary mud	2	1.48	2	8.16
Not mentioned	-	-	4	8.16

Out of 135 cases with stones in gall bladder, 96 had mixed stones (71.11%), 31 had cholesterol stones (22.96%), 6 had pigmented stones (4.44%) and 2 had biliary mud (1.48%). Stone found in common bile duct shows 31 mixed stones (63.26%), 10 cholesterol stones (20.40%), 2 pigmented stones (4.08%) and the type of stones not specified in 4 cases (8.16%).

TABLE 5

COMPLICATIONS

The post operative complications that we came across were as follows:

	<u>No. of cases</u>	<u>%</u>
Wound infections	22	12.64
Post operative jaundice	1	0.57
Reactionary haemorrhage	2	1.14
Others (Pyrexia, UTI, Chest inf.)	5	2.87

Reactionary haemorrhage within few hours of operation was seen in 2 cases, one due to slipping of ligature from cystic artery, and one due to oozing from gall bladder bed. Post operative jaundice was seen in one case (cause unknown). Wound infections as proved by aerobic culture was found in 22 cases (12.64%). Pyrexia, Urinary tract infection, chest infection, and drug reaction occurred in 5 cases (2.87%). 2 cases died within a few days of operation, the rest 142 of the cases did not have any significant complications (81.60%).

TABLE 6

DURATION OF STAY IN HOSPITAL

<u>Duration of stay</u>	<u>No. of cases</u>	<u>%</u>
7 - 14 days	66	37.93
15 - 21 days	53	30.45
22 - over	55	31.60

DISCUSSION

The incidence of gall stones and gall bladder disease leading to cholecystectomy has increased in the last decade specially so, in the last five years. Cholecystectomy performed in this hospital for gall stones in the last five years has more than doubled as compared to the ten years between 1963-1974. In developed countries like U. K. incidence is said to be 10% of the population (Colin Mackay) and in Japan according to Nobuyoshi Ito, the incidence is 10% in adult Japanese population. According to the same author, the incidence of

cholesterol stones has increased recently in proportion to bilirubin, calcium stones. This he attributes to improved dietary intake in the Japanese population after II world war. In our population we have not found any improvement in the diet which could be accounted for the increased incidence of gall stones. It may be that people have become more health conscious, the availability of surgery has become more and there are more surgeons now in the hospitals, who have been performing biliary surgery.

The age incidence in our series shows the peak between 31-40 years, whereas in classical teaching it is said to be in forties. Our lowest age was 9 years and the highest age was 78 years (as shown in table I). The reason of not having many aged people undergoing the operations may be that because of ignorance and fear of operations they resign themselves to their fate easily as compared to people of developed countries.

The sex incidence in our series were 5 female to 2 male, which is slightly different than those quoted in more developed countries like U. K. where the ratio is 2.96:8 (Brain et al). We are unable to explain the cause of discrepancy. In our series, 82.7% cases came from Kathmandu Valley area, 7.47% from the hills and 9.78% from the tarai area. This is probably because of the fact that valley people are more educated and more health conscious and can approach the hospital easily.

As mentioned already facilities for investigations are very limited here and we may be missing some causes because oral cholecystogram is not a sure method of diagnosing cholelithiasis. Many people do not get repeated oral cholecystography done which may reveal gall bladder disease, not detected in early X-rays.

According to I. M. Rogers et al a normal cholecystogram may show abnormal picture after a delay of 5-11 years. According to same author, operation should be advised even in normal cholecystogram if the symptoms are sufficiently severe, namely typical biliary colic, jaundice etc.

It has been already said that we lack more modern facilities of diagnosing biliary diseases. We did not find any co-relation between serum cholesterol and gall stones in cases in which the investigations were done.

The incidence of mixed stones of 71.11% was highest followed by cholesterol stones

22.66%, pigmented stones 4.44% and biliary mud 1.48%. This is in accordance with other authors who also place the incidence of mixed stones at the highest level.

In 29 cases of cholecystectomies the indications for surgery could not be traced in the records, possibly a high percent of them might have been acalculus cholecystitis. Acalculus cholecystitis does exist, the stones may have been passed out in the biliary tree (I. M. Rogers et al). The gall bladder might have histological change not apparent at operation at one end and at other end of the scale it can even be gangrenous without stones (B.M.J. 17th Dec. 1967). According to M. H. Thompson et al acalculus cholecystitis is uncommon, it usually occurs in patients who are already ill, particularly those who have suffered from major trauma or surgery. Bacteria are sometimes found to be present in bile and they are almost always organism which are commensals or pathogens in human gut. They have also reported a case of acalculus cholecystitis due to staphylococcus aureus.

Our policy has been to open the common bile duct in the following circumstances:

1. Palpable stone in common bile duct.
2. Dilated common bile duct (if external diameter is more than 1cm).
3. Present or past history of jaundice.
4. Positive preoperative intravenous cholangiography.
5. Multiple small stones in gall bladder with wide cystic duct.

These indications tally with the standard indications but other indications like pancreatitis and history of biliary stone disease with empty gall bladder should also be considered.

On the basis of these indications, exploration of common bile duct was done in 58 cases (39.08%). Out of which 49 cases 72.05% yielded stones in common bile duct and rest were negative exploration. In the series of A. Schramak et al the percentage of positive choledochotomies have been 60%. The percentage of positive choledochotomies in our series could have been more if preoperative cholangiogram could be performed, though we admit that preoperative cholangiogram is not hundred percent confirmative either way. It is also known that the number of positive choledochotomies increase with the age of the patients and duration of the disease. According to A. Schramek et al between the age of 20-29 years, 8% had positive choledochotomies whereas at 80-89 years the incidence of positive choledochotomies was 70%. When the duration of the disease was upto one year, 47%, had positive

explorations and it rose to 60% when the duration of the disease was over 30 years. The exact number of cases with residual stones in common bile duct could not be ascertained due to lack of records. The reason for lack of records are (a) missing of T tube cholangiogram (b) the patients in private wards being allowed to take their investigations back. The incidence of the residual stones according to the literature are between 7-20%.

TABLE 7

Reference	% of overlooked stone (following cholecystectomies with choledochotomies)
Glenn 1952	7
Hicken et al 1956	20
Thomson 1956	11
Colcock and Liddle 1958	2
Bartlett and Dreyfuss 1960	4.2
Havard 1960	6.5
Colcock and Perey 1964	1.6
Larson et al 1966	3.1
Mc. Laughlin and Coe 1970	1
Mullen et al 1971	5.8
Hall et al 1973	14

The bile culture taken from removed gall bladder in 26 cases showed no growth in 18 cases, E. coli in 5 cases (19.23%) and staphylococcus aureus in 2 cases (7.69%) and Klebsiella in 1 case (3.85%). According to R. Nigel Peel et al (Table 8., 27 cases out of 110 yielded positive cultures and 2 of them had more than one organism in gall bladder.

TABLE 8

<u>Name of organism</u>	<u>No.</u>
E. Coli	8
Streptococcus faecalis	6
Staphylococcus Aureus	1
Staphylococcus epidermidis	2

	2
Micrococci	3
Enterobacter Spp.	1
Klebsiella pneumoniae	1
Bacteroids melaninogenicus	1
Compylobacter jejuni	1
Candida albicans	2
Bacillus Spp.	

In this series also *E. coli* is the commonest organism isolated as in our series. It is to be noted that we did not do anaerobic culture which could have yielded more growth of organism.

In spite of our routine prophylactic use of antibiotics (ampicillin, mostly) the wound infection rate as proved by aerobic culture only was 12.64%. But the incidence seems to be higher than this, if any minor purulent discharge from the wound during the hospital stay or in the immediate period following discharge from the hospital is taken into account. As in the series by others we accept that the wound infection rate is higher if common bile duct exploration and incidental appendicectomy is performed along with cholecystectomies.

The duration of hospital stay has been influenced sometimes by undue delay between admission and operation. Most of them had to stay because of wound infection.

The overall mortality rate in our series has been 1.14: which compares favourably with the series of other authors under the prevailing circumstances.

TABLE 9

Reference	Patient with cholecystectomies mortality %	Patient with cholecystectomies and choledochotomies mortality %
Bartlett and Waddell 1958	0.6	1.8
Colcock and Percy 1964	0.6	1.8
Wenkert and Robertson 1966	0.22	2.6
Glenn 1967	0.7	4.3
Mullen et al 1971	0.4	0.7
Kakos et al 1972	0.8	1.8

CONCLUSION

Cholecystectomy is the most common routine elective major abdominal operation now in this hospital. The incidence of gall stones seems to be rising. Commonest stone has been mixed stones followed by cholesterol stones and pigmented stones.

39% of the total cases subjected to the cholecystectomy required common bile duct exploration. The number of positive choledochotomies has been 72.05%. The incidence of gall stones in female are more than the male.

The age incidence is less in this series than taught in standard text books. The high incidence of carcinoma gall bladder is probably due to reluctance of the patient to submit for operation for long time.

Incidence of common bile duct exploration could have been reduced if preoperative cholangiogram could have been routinely performed. If modern facilities like ultra sound, scanning, percutaneous transhepatic cholangiography, CAT scan, endoscopicretrograde cholangio pancreatography were available early diagnosis and treatment would have been possible.

Inspire of routine prophylactic use of antibiotics wound infection rate have been substantially reduced because of environmental factors and circumstances prevailing around the patient during the post operative period.

Some advance has to be made as to the means of follow up of the treated cases.

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