

PATTERN OF GALLBLADDER DISEASES IN AN ACADEMIC HOSPITAL – TWO YEARS STUDY

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Abstract:

Objective: To determine the incidence of gallstone disease in relation to the other disease of the gall bladder.

Design: To study all the patients admitted with suspected gall bladder diseases.

Setting: Mymensingh Medical College Hospital.

Main outcome measure: Age and sex standardised incidence of categorical gall bladder diseases and distribution on the basis of clinical manifestation and investigative findings.

Result: Commonest gall bladder disease was found to be gallstone which constituted 86.29% of total. Other conditions were found to be rare. All these diseases had characteristic pattern. The investigative technique required for diagnosis is ultrasonography of hepatobiliary system and pancreas.

Conclusion: The incidence and pattern of gall bladder disease are as such that most if not all can be managed satisfactorily in a peripheral setting where sophisticated techniques like computed tomography, magnetic resonance imaging, percutaneous transhepatic cholangiography, endoscopic retrograde cholangiopancreatography are not available.

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Introduction

The History of the gall bladder diseases was known to the history of Medical Science since 1317 when a stone in the gall bladder was first observed by SILVIATICUS & the carcinoma of the gall bladder was first described by STOLL in 1771. The epidemiology of gallbladder first diseases has changed a lot.

Gall bladder disease, which is mostly gall stone disease becoming a major surgical problem in the world and in our country also. Gall bladder cancer is the most common biliary tract malignancy. Calcification of the gall bladder wall is reported to be associated with gall bladder cancer. Now a days in almost every Hospital amongst the routine surgery gall bladder disease tops the list and the number is increasing day by day. But in the near past the picture was not like that and the gall bladder

diseases were not so prevalent. Patient suffering from cholecystitis with cholelithiasis are usually obese, fertile and have a good appetite for food. Fatty food or sucrose rich diets with low fibre contents are the most likely foodstuff and estrogen replacement therapy to enhance the chances of gallstones as has been proved by many previous studies.

Again it is no more a disease of the middle aged obese ladies of affluent class, rather now a days we are getting patients in all age groups with significant number in second and third decades coming from all classes though female preponderance is still there.

Every case is evaluated both clinically, laboratory and radiological investigations.

Research has gone a long way to find the cause of factors that lead to their formation. Even now

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queries are still in the minds of scientists as they hypothesize and continue research. The high incidence of hospital admission of gall bladder diseases admitted to hospital to carry out a study and to investigate these cases.

Removing gall bladder is fairly a big deal. About 1/3rd of a millions are removed annually. Mortality is relatively low.

Most patients benefit from cholecystectomy but symptoms develop in 15-20% of cases after cholecystectomy (Judd 1925, Weir & Snell 1935, Maedonald 1943, Mock 1953).

The common disorders of the extra hepatic biliary tract giving rise to post cholecystectomy symptoms are; retained common duct stone, cystic duct remnant with inflammation or stone (Hicken et al 1947, Ganlock and Hurwith 1951) or neuromas arising from the original operation (Womeck & Crider 1947, Troppoli & Cella 1953) and stenosis of sphincter of oddi.

Aims and Objectives:

Gallbladder diseases are becoming a major surgical problem throughout the world and in our country too. Now a days in almost every hospital amongst the schedule surgery, gallbladder disease tops the list and the number is increasing day by day. But in the near past, the picture was different and the gallbladder diseases was not so prevalent in hospital settings.

This study is carried out to know the incidence of gallstone disease in relation to the other diseases of the gallbladder in a hospital settings.

Materials and methods

In total 715 cases have been studied who were admitted into the Mymensingh Medical College, Hospital during the period of 2 years from July 2001 to July 2007.

On admission, a detailed clinical history was taken including his/her age, sex, occupation, residence, dietary habit, family history, personal history and symptoms.

Each patient was asked about the history of past illness relevant to this disease. Systematic clinical examination was carried out to elicit the physical signs, investigations,

carried out to establish the diagnosis.’ Appropriate surgical approach was made and operative findings were compiled and these are shown in different tables in the text.

Results and Observation

Out of the 715 cases in this series age ranges from 12 years to 70 years. Maximum incidence was noted in between 21-30 years age group. Mean age was 38.60. The youngest patient was an unmarried school girl and a widow of 68 years at its upper limit. Both were female patient.

Among 715 patients 553 cases in this series were female and only 162 cases were male. In this series 248 cases comes from low socioeconomic group, 373 cases from average socioeconomic group and 94 cases from well off family. In this study 229 patients got pain in the right upper quadrant of abdomen associated with dyspepsia, 181 patients got only pain in the right upper quadrant of abdomen, 189 patients got pain in the right upper quadrant of abdomen associated with vomiting, 78 patients got pain in the right upper quadrant of abdomen associated with fever, 15 patients got pain in the right upper quadrant of abdomen associated with cough, weakness and asymptomatic gallstones were in 23 cases. About physical findings, tenderness in the right upper quadrant was present in 528 cases, gallbladder palpable in 81 cases, liver palpable in 31 cases and ascites was present in 19 cases. About biochemical investigations serum bilirubin was normal in 584 cases, raised in 81 cases, not done in 50 cases. Serum glutamate pyruvate transaminase was normal in 580 cases, raised in 60 cases, not done in 75 cases. HbsAg positive in 12 cases, negative in 658 cases, not done in 45 cases. About radiological investigations, X-ray chest postero-anterior view, in 15 cases there was evidence of increased vascular markings and in 17 cases the heart was enlarged in transverse diameter. Plain X-ray abdomen was done in 18 cases diagnosed as acute cholecystitis but all of them are insignificant. About ultrasonography of hepatobiliary system and pancreas, stone with thickened wall of the gallbladder was present

in 617 cases, mucocele in 37 cases, mass in the gallbladder in 25 cases, only fibrosis of the wall of the gallbladder in 19 cases, equivocal findings in 17 cases. Ultrasonographic findings of intrahepatic and extrahepatic bile ducts include dilatation of the duct in 50 cases, stone in the bile duct in 37 cases and normal in 628 cases. About operative procedure, out of 715 patients 610 patients were operated. Cholecystectomy done in 570 cases, Cholecystectomy with Choledocholithotomy done in 37 cases and cholecystectomy with choledochoduodenostomy done in 3 cases. About operative findings, there were stone in the lumen of the gallbladder in 558 cases, mass in the lumen was present in 14 cases, fibrosis in the wall of gallbladder was present in 18 cases and mucocele in 20 cases. Regarding bile duct there was dilatation in 49 cases and stone in 36 cases.

Table-I

Ultrasonographic findings of gall bladder (n=715)

Pathology Detected	Number of cases	Percentage
Stone with thicken Gall bladder wall	17	86.29
Mucocele	37	5.17
Mass in gall bladder	25	3.50
Only fibrosis of wall	19	2.66
Equivocal findings	17	2.3
Total	715	100.0

Table-II

Ultrasonographic findings of intrahepatic and extrahepatic bile duct (n=715)

Findings	Number of cases	Percentage
Dilatation of bile duct	50	6.99
Stone in the bile duct	37	5.17
Normal	628	87.84
Total	715	100.0

Discussion

There is no doubt that the number of pathological gall bladder and biliary tract disease have markedly increased in the recent years within the invent and popularity of the very useful investigative tool known as ultrasonogram. Whether this increase is really an increase in incidence of the disease or it is the increase in reporting of the disease is still a matter of debate. In our opinion, both the factors are responsible. Clinical features and disease pattern of the patients in this study were similar to that of the study done by Sabharwal ED et al.¹ at Panjab.

Pain in right upper quadrant of abdomen is 96.98% and 74%, vomiting is 26.43% and 24%, dyspepsia is 32.02% and 5%, jaundice is 1.5% and 10%, stone in gallbladder is 86.29% and 86.5% in Mymensingh Medical College Hospital and at Panjab respectively.

But the age incidence of the disease is not similar to that of other studies. While most of the studies suggest that the prevalence of gall bladder disease is maximum in between 41-50 years of age group¹. In this study shows that the maximum prevalence is in between 21-30 years of age group.

Although the literatures of epidemiology of gallbladder disease suggest association of the gallbladder disease with several factors only a few are conclusively linked². Among the suggested risk factors, the possible role of obesity, dietary habits, genetic, ethnic and environmental factors; serum lipids; and cholelithiasis (recent advantages in the epidemiology and prevention of gallstone disease).

The association between Oral contraceptive pill and gallbladder disease was first noted in 1973 in a case control study of women in between 20-30 years old (Boston Collaborative Drug Surveillance Programme³). The mechanism of oestrogens effects on gallbladder disease is not clear. Oestrogens are associated with high plasma levels of high density lipoprotein, cholesterol and other lipoprotein fraction⁴. Since high density lipoprotein particles are believed to be a transport cholesterol from the tissue to the liver for preparation for excretion⁵,

increase in high density lipoprotein might be expected to produce higher concentration of cholesterol in the gallbladder.

This association between Oral contraceptive Pill and gallbladder diseases though not definitely proved but makes biologic sense. Women get gall bladder disease more than men, parity has been associated with an increase risk of gall bladder disease and even men given oestrogens in randomized clinical trials of their effect on other illness have shown a dose related increased risk of gall bladder disease.

The above explanation fits the interesting findings of this study. Previously it was said that gall bladder disease is common among patients of forty to fifty years of age, fair, fatty, fertile and female. But this study does not agree to that shows that maximum prevalence is in between 21-30 years of age group. Though definite cause could not be detected.

Recent studies state that the risk of gall bladder disease from oral contraceptive pill use appears to be much higher in younger women than in middle aged women.⁶

In cases of acute cholecystitis, operation can be done in certain cases and according to some worker the operation is much easier in acute cases as there is a definite cleavage due to oedema, which makes the dissection easier. Of course, it should done within 48 to 72 hours of an acute attack.

Regarding the correlation between the ultrasonographic finding and peroperative findings there is some discrepancy though not gross and this here is acceptable. The result of ultrasonographic findings is also skill dependent.

This error is acceptable in one sense is that very small stone can be missed in ultrasonography. Again ultrasonography depends on different factors and machine used.

In this study ultrasonography detected dilatation of common bile duct in 50 cases but peroperatively in 49 cases common bile duct was found to be dilated, sonologist also able to detect stones in common bile duct.

Mass was detected in the lumen of gall bladder in 25 cases by ultrasonography but peroperatively mass was found in 14 cases.

Regarding fibrosis ultrasonographic finding was only fibrosis without stone in 19 cases. But peroperative fibrosis was noted in the cases with fibrosis with or without stone. That is why there is gross discrepancy.

There are debates in biliary surgery as how to conclude the operation in patients in whom the common bile duct has been explored the need for choledochoduodenostomy is only considered in those cases having diameter of common bile duct is at last 12 mm.

In this series the bile ducts opened were widely dilated. Major complication which lies with choledochoduodenostomy is ascending cholangitis but the incidence is very low. To avoid complication associated with choledochoduodenostomy, it is important that the anastomosis should be wide enough to ensure good biliary drainage and prevent stenosis, a main factor favouring cholangitis^{5,7,8,9}.

In conclusion there were no complication of these patients during the early postoperative period. However, a long term follow up is needed for further evaluation.

Now a days facilities for laparoscopic cholecystectomy is available for gall bladder surgery in our country is wide open. Laparoscopic cholecystectomy procedure was carried out in two-third of the cases. Open cholecystectomy was done in 1/3rd of the patients in this series.

The usefulness of supraduodenal choledochoduodenostomy as a biliary bypass after bile duct surgery for choledocholithiasis has been controversial for many years^{10,11}. Following Reidel's first description in 1888¹² the technique was practised progressively in continental Europe, but met with strong resistance in the UK and USA, until publication by Senders¹³, Hurwitz and Degenskin¹⁴, Madden et al.¹⁵ and other presented it as a safe and efficient technique.

Of the 610 patients (580) were reviewed after 1 and 2 year and 503 were found to be totally

asymptomatic. In 5 patients there was occasional postprandial discomfort and in 20 patients with occasions of episodes of recurrent pain due to other reason.

The publication of several series of choledochoduodenostomy found very little morbidity and mortality^{10,13}.

Summary

In this study, a two year study of 715 patients admitted in the three units (I+II+III) of Mymensingh Medical College Hospital from July 2001 to July 2003 with gall bladder diseases were evaluated to assess the overall pattern of the disease including Age incidence, Sex incidence, Socio-economic status, presenting feature, Investigative findings, operative finding and the correlation between them.

Age of the patients ranged from 12 to 70 years with a maximum incidence at 3^r decades. The youngest was an unmarried school girl and a widow of 68 years of age at its upper limit. Both were female patient.

553 patients were female and only 162 patients were male with a female to male ratio was 3.41:1.1 showing females preponderance consistent with other reports.

Most of the patients were from a good to average socioeconomic status if not from a well to do family.

Most of the patients in this series presented with the pain in the right upper quadrant of abdomen, other presenting symptoms were dyspepsia, vomiting, fever, cough, weakness.

Most important diagnostic technique which was used in this series to diagnose the cases of gall bladder disease was ultrasonography. Which is most commonly performed investigation sensitivity and specificity of which is 90%. Liver function test was also done.

The operation was done in chronic cases as well as in acute cases. The operative technique was cholecystectomy both by laparoscopic means and open method.

The stone in the common bile duct was dealt surgically. Choledochoduodenostomy was done in 3 cases where common bile duct was explored.

Conclusion

The diseases of the gallbladder tend to be manifested by evidence of pain and inflammation. The presentation in most of the cases follow a definite pattern. Awareness of this pattern and presentation simplifies diagnosis and enables the clinicians to provide rational treatment.

References

1. Sabhrwal ED. Gallbladder disease pattern in Panjab, J Indian MA, 62(5): 164-166,1964.
2. Strom BL, West SL. The epidemiology of gallstone disease. In cohen S Solway Rd eds contemporary issues in gastroenterology; Gallstones, New York, Churchill Livingstone. 1984, 1-26.
3. Boston Collaborative drug surveillance programme oral contraceptives & venous thromboembolic disease and breast tumours. The Lancet. 1:1399-1404, 1973.
4. Bradley DD, Wingered J, Petitti DB, Krauss RM. Mancharan Serum High Density lipoprotein cholesterol in woman using contraceptives, Estrogens & progesterony. N Eng J Med, 299:17-20, 1978.
5. Sauerbrei EE, Cooperberg PL, Garden P, Lid, Cohen MM, Burhenne HJ. The discrepancy between radiography and sonographic bile duct measurements. Radiology, 137:751-5, 1980.
6. Strom BL MD. Oral contraceptives and other risk factor for gall bladder disease din. pharma Col Ther, 39(3):333-41, 1986.
7. Pi-Figureas J Litiatis biliary Su tratamiento quirurgico. In : practica Quirurgica Vol. 11, Barcelona, Salvat, 608-61, 1986.
8. Lygidakis NC. Choledochoduodenostomy in calculus biliary tract disease. BrJ Surg, 68:752-5,1981.
9. Birlatzky Y, Freund H. Choledochoduodenostomy in the treatment of Benign biliary tract disease Am J Surg, 68:752-5,1981.
10. Denbesten L Bereig. The current status biliary tract surgery, an international study of 1072 consecutive patients. World J Surg, 10:116-22, 1986.
11. Degenstein GA Choledochoduodenostomy, an 18-year study of 175 consecutive cases. Surgery, 76:319-24, 1974.
12. Riedel H. Ubenden Zungenfoermigir Fortasta : des rechter lebberlappens and seine pathognostische bendentury fur die erkrankunser der gallenblosenelst benerkusgen gallenstein operation Beri Klin wschr. 25:577-602, 1888.
13. Sanders RB. Indication and value of Choledochoduodenostomy, Am J Surg, 123:847-51, 1991.
14. Hururtz AB, Degenten GA. The role of choledochoduo-denostomy in common duct surgery reappraisal. Surg, 56:1147-50, 1964.
15. Maddar JL, Crruwen JL. Tarpv Obstructive Jaundice an analysis of 140 consecutive cases consideration of choledo-choduodenostomy in its treatment. Am J Surg. 109:89-99, 1965.