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Research Article

Spectrum of Gallbladder Diseases in Gwalior Region: An Overview

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Abstract: The clinical study was carried out on 240 patients who had come to surgery department in J.A. Hospital and G.R. medical College, Gwalior on the basis of clinical presentation and radiological investigations, gallbladder pathology was suspected. The ultimate goal of the study was see and assess the spectrum of diseases in gallbladder like carcinoma of gallbladder, cholelithasis, cholecystitis etc.
Keywords: Gall bladder diseases, Gwalior

INTRODUCTION

Gall bladder diseases, through as old as history of medicine, still remains the world wide problem and an enigma for modern medical science.

Carcinoma of gall bladder is the commonest malignancy of biliary tract and the fifth most common gastrointestinal malignancy [1].

Though the exact etiology of gall bladder cancer remains unknown. Several well known epidemiological characteristics provides avenues for further research.

Gall stones or Cholelithiasis again is an entity which has been known since ancient times (it's said that stones were found in most ancient of the graveyards along with skeletons of then buried people and were believed to be gall stones or may be kidney stones [2-3]

An extensive; although seemingly imperfect etiopathological bases of gall stone formation, their complications and treatment has been etched out. Although it still seems is scope of improvement and research.

Gall bladder spectrum of disease extends far beyond these two entities and includes congenital anomalies and infective diseases among other sufferings, the detailed enumeration of which is beyond the need of description in this introduction [4-5].

In this study I have tried to decipher and study the gall bladder diseases (especially gall stones and carcinoma gall bladder) prospectively to study the various factors that makes gall bladder diseases the source of one of the major sufferings in Gwalior region (North India region).

MATERIALS AND METHODS

The present study was carried out on 240 patients who had come to J.A. Hospital and associated with G.R. Medical College either as OPD patients or as admitted patients in Surgery Department of the Hospital.

Selection of the patients

On admission or during examination in the OPDs, a detailed history and clinical examination was carried out, the requisite investigations like haemoglobin, total leucocytic counts, differential leucocytic counts, blood sugar, blood urea, liver function tests (giving main emphasis on serum bilirubin, alkaline phosphatase), serum cholesterol level.

Clinical diagnosis was made after this with help of specific investigations like ultrasonography and computerized tomography.

If required the patients underwent operative procedures after informed consent. None of the female patients who were pregnant were made part of the study.

The cases were divided into three groups:

Carcinoma Gall Bladder

Carcinoma gall bladder diagnosed on the bases of clinical profile, ultrasonography and computerized tomography.

Cholelithiasis

Cholelithiasis, diagnosis was made with clinical examination and ultrasonography.

Others

All the others were the patients in this some clinical, diagnostic or operative finding was noticed involving gall bladder.

The varieties of the cases were included to widen the umbrella of the variety of diseases of gall bladder.

METHODOLOGY

The methodology of the study work consists of filling up of the proforma constituted to cover all the important risk factors pertaining to gall bladder diseases. With the filling of proforma it was tried to cover the important factors pertaining to the person itself and the factors included in the environment around the person.

The person was followed during his clinical and biochemical, pathological, radiological and if present the surgical management of the person.

Even when the person went away from the hospital the patient was followed to track the investigations and the management the patient received.

Finding of the patients were tabulated to reach the possible association of the factors concerned with a particular gall bladder disease.

Statistical Analysis

Statistical analysis was done using arithmetic mean and p values to find out whether the association of the factor was significantly associated with a particular gall bladder disease.

RESULTS

Mean age in patients with gallstones were 51 years for females and 53 years for males varying from 22 to 70 for females and 32 to 70 in case of males.

Mean age of Ca gallbledder patients were 61 in case of females and 54 in case of males varying from 35 of 72 in case of females and 44 to 70 in case of males.

Patients having both gall bladder carcinoma and gall bladder stone being a heteogenous group so the mean age doesn't hold much importance in that group.

Table 1: Distribution of the cases

Group	Number	Percent
Carcinoma gall bladder	27	11.25%
Cholelithiasis	198	82.5%
Others	15	6.25%
Total	240	100%

Table 3: Comparison of mean age in years of various groups of patients

Group	No. of cases		Mean age		Minimum age		Maximum age	
Cholelithiasis	142f	56m	51f	53m	22f	32m	70f	70m
Ca gallbladder	19f	8m	61f	54m	35f	44m	72f	70m
Both	11f	4m	40f	42m	23f	21m	55f	60m

Table 3: Symptoms noted in the gallbladder disease

Symptoms	Gallstones		Ca gallbladder		Others	
	No	%	No	%	No	%
Pain	120	60.6	25	92.59	4	26.66
Jaundice	10	5.05	8	29.62	2	13.33
Abdominal distension	126	63.63	2	7.4	4	26.66
Lump right Hypochondrium	3	1.51	24	88.88	0	0
Lump other sites	8	4.04	2	7.4	0	0
Nausea	78	39.39	17	62.96	6	40
Vomiting	78	39.39	17	62.96	6	40
Anorexia	10	5.05	24	88.88	0	0
Decreased appetite	10	5.05	24	88.88	0	0
Weight loss	7	3.53	25	92.59	0	0
Malaise	34	17.17	21	77.77	4	26.66
Salty sweat	76	38.38	10	37.03	2	13.33

Pain was the commonest presenting symptom (92.59%) in cases of Ca gallbladder. Jaundice was noted in 29.62% patients that are 8 patients and 24 patients (88.88%) patients came with complaints of lump in right upper abdomen. Weight loss was present in 25 patients (92.59%) and anorexia was there in 24 patients (88.88%) nausea and vomiting was present in 6 patients (40%) each. Distension was found in 4 patients (26.66%)

In case of gallstones commoner's symptoms was abdominal distension (63.63%), 126 patients, followed by pain 60.6%, 120 patients, followed by nausea and vomiting with 78 patients each (39.39%). Surprisingly, excessive salt was found in 76 patients (38.38%)

Table 4: **Dietary history**

Dietary habits	Cholelithiasis		Ca gall bladder	
	No.	%	No.	%
Vegetarian	100	50.50	14	51.85
Non vegetarian	98	49.49	13	48.14
Frequent sweet intake	97	48.98	10	37.03
Less or minimal dairy product intake	130	65.65	19	70.37
Fruit intake	30	15.15	3	11.11
More oily food intake	87	43.93	14	51.85
More spicy food intake	97	48.98	13	48.14

Dietary history clearly shows that there is a definite association of gall bladder diseases as a whole with less or minimal dietary products intake. Gall bladder diseases as a whole are due to a spectrum of reasons and that's why no single factor can be singled out as a sole cause of a particular disease. The above mentioned percentages might just give an idea that a particular dietary habit was one of the prominent factors in causation of the diseases. Others group being a heterogenous entity can't be included and studied in this particular table evaluation.

Table 5: Personal habits

Personal habits	Cholelithiasis		Ca gall bladder	
	No.	%	No.	%
Tobacco user	77	38.88	13	48.14
Non tobacco user	121	61.11	14	51.85
Alcoholics	50	25.25	10	37.03
Non alcoholic	148	74.74	17	62.96

One interesting thing that was found out was the fact that 40 out of 56 cholelithiasis patients were regular alcoholics and in cases of ca gall bladder 3 out of 8 patients were regular alcoholics in case of male patients.

Table 6: Mean bilirubin level

Group	Total bilirubin level				Mean	Minimum	Maximum
	<2mg/dl		>2mg/dl				
	No	%	No	%			
Cholelithiasis	175	88.38	23	11.62	1.5	.8	3.3
Ca gall bladder	6	22.22	21	77.77	4.5	.8	20.1

Average level of total bilirubin in patients with Ca gall bladder was 4.5mg/dl, in cholelithiasis mean level was 1.5mg/dl gall stones the values varied from .8 to 3.3mg/dl while the values varied from .7 to 20.1mg/dl in cases of Ca gall bladder.

Table 7: Cholesterol level

Group	Cholesterol level				Mean	Minimum	Maximum
	<250mg/dl		>250mg/dl				
	No	%	No	%			
Cholelithiasis	97	48.98	101	51.01	256+28	127	356
Ca gall bladder	18	66.66	9	33.33	175.7+27	119	257

Now most of the stones are composed of cholesterol either in a pure or mixed form so a percentage of 51.01% of patients of gall stones having a level >250mg/dl and a mean of 256.5mg/dl makes appeal to an astute mind at the same time because most of the patients of gall bladder carcinoma present late are cachexic and have lost significant amount of weight so having two third of patients with cholesterol level in normal or below normal ranges makes sense again.

DISCUSSION

Primary carcinoma of the gall bladder is the most common malignant lesion of the biliary tract and it has established a characteristic pattern of certain etiology late presentation and ineffectual treatment.

A variety of risk factors have been proposed in the etiopathogenesis of carcinoma gall bladder but none has stood the test of time cholelithiasis has strong association with gall bladder cancer, chronic trauma and inflammation are considered to be the cause of this association chronic cholecystitis, porcelain gall bladder, Xanthogranulomatous cholecystitis benign neoplasm and anatomical variation have also been corrected with carcinoma gall bladder.

Several other risk factors like endogenous and exogenous chemical carcinogens/ co-carcinogens have been implicated in gall bladder carcinogenesis among the, industrial pollutant methyl cholanthrene O-amino azotoluene, nitrosoamine, carbon tetra chloride, free radicals, lipid preoxidation products and secondary bile acids are noted ones.

The peak incidence of carcinoma of gallbladder occurs in 6^{th} or 7^{th} decade of life. Mean duration of symptoms in gallbladder carcinoma is around 1.8-4.3 months.

Commonest symptoms in our study was pain 92.59% and weight loss 92.59% followed by anorexia and loss of appetite along with a palpable lump at the time of presentation standing a 88.88% malaise 77.77% nausea vomiting 62.96% and jaundice at 29.62% followed in frequency distension was present in only 7% of cases.

In another series pain was present in 75% jaundice was present in 38% nausea vomiting in 32% and weight loss in 30%.

The mean bilirubin level of gall bladder patients at presentation was 4.5mg/dl and varied from 7 to 20.1mg/dl statistical significance from general population could not be found out because no controls were taken from general population.

The reason that cholesterol level smoking, alcohol, nonvegetarian diet etc was that gall bladder carcinoma is an entity where multiple factor have an interplay to produce the diseases so if the association of the particular factor has to be found out then a case control study has to done out study just points out that the specific factors were the main contributory factor in the mentioned proportion of the patients and not the absolute association in the patients admitted in our study.

In the case of gall stones the general presentation of nonspecific symptomatology that is, dyspepsia, distension, right hypochondriac pain confirm to the time tested norms.

The mean age of presentation in cholelithiasis in females is 51 years and in males 53 years which does not agree with the present norm of 40 year female the male female ratio in case of cholelithiasis was 2.54 in favour of females.

Abdominal distention, flatulance, dyspepsia was found in 63.63% patients which again corresponds to the fact that most of the patients of gall stones have non specific distension flatulance, dyspepsia as said by Sleisinger's text book of gastrointestinal and liver diseases 8^{th} edition [6].

Pain right hypochondriac or on other sites was present in 60.6% patients which corresponds nearly to the 75%.

In present study, I found that there was a strong correlation between cholilitheasis and carcinoma gall bladder with consumption of mustard oil as edible oil speciallay near by Chambal belt, due to large cultivation area of mustard.

CONCLUSIONS

- The highest incidence of carcinoma gall bladder was in 7^{th} decades of life in females and 6^{th} decade in males and the highest incidence in cholelithiasis is 6^{th} decade of males as well as females.
- Carcinoma gall bladder in females was 2.375 time more than males while this ratio in gall stones was 1:2.54 in favour of females.
- Most patients of carcinoma gall bladder presented with pain while most patients with cholelithiasis presented with flatulance dyspepsia distension of abdomen.
- There was a significant difference in level of bilirubin level in patients of carcinoma gall bladder and cholelithiasis when compared with each other.
- Mean cholesterol level in gall stones diseases was more than 250mg/dl while it was less than 250mg/dl in case of carcinoma gall bladder diseases.
- To confirm the association of gall bladder diseases with smoking alcohol, diet, fat intake, fruits intake etc. a case control study is required.

- If patient come early in the disease period, the prognosis of the patient is always better.

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