Cholelithiasis in rural population of Haryana

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Abstract

Cholelithiasis is very common in the Northern part of India. Lifestyle and food habits are contributing factors for this disease. This study aimed at the pattern, presentation, management and type of gall bladder stones in this rural population of Haryana and how the patient centric decision (when patient decides for themselves regarding types of operation either mini-laparotomy cholecystectomy or laparoscopic cholecystectomy), affect the outcome. This study includes 152 patients of cholelithiasis. Clinical presentations were noted including their dietary habits. For the definitive diagnosis, liver function test (LFT) and ultrasonography (USG) were relied upon. We have informed them about the availability of operations of cholecystectomy that is either mini-laparotomy or laparoscopic, and depending on their choice, we operated and observe the outcome. The distribution of gall bladder stones examined by USG and LFT was 75.6% in female and 24.3% in male, ranging from 18 to 65 years of age. Most (93.4%) of all gallstones were cholesterol stones except few mixed stones. Given the option of operation, a high number of patients selected mini-laparotomy cholecystectomy, apparently because of the cost involved. As this is a patient-centric decision making about the operation of choice study (either mini-laparotomy cholecystectomy or lap cholecystectomy), therefore showing that most cases can be managed through mini-laparotomy cholecystectomy (under high spinal) without any major complication, and this is naturally guiding us towards cost effectivity in the rural setup.

Keywords: Cholelithiasis, Mini-laparotomy cholecystectomy, Lap cholecystectomy, Cholesterol stones, Patient centricity.

Introduction

Cholelithiasis is very common problem in the Northern part of India. The prevalence may vary in different part of India. It seems a major health problem even in rural area. The prevalence reported being varied from 2-29% in the country. Lifestyle and food habits are contributing factors for this disease.(1-3) Availability of USG is playing an additional contributing factor in diagnosing new cases. So in this study, we tried to find out epidemiology, presentation, cost effective management and complications of surgery. We also analyzed gallbladder stones to ascertain the composition of stones. We tried to practice the patient centricity, which is officially defined as the process of designing a service or solution around the patient stemming from the UK's NHS-driven thinking like 'no decision about me, without me'. So patients can themselves decide about their options(after giving full information about operation) and therefore naturally guiding us towards cost effective management in their life style and affordability.(4-5) This study aimed at the pattern, presentation, management and type of gall bladder stones in this rural population of Haryana and how the patient centric decision (when patient decides for themselves regarding types of operation either mini-laparotomy cholecystectomy or laparoscopic cholecystectomy), affect the outcome.

Materials and Method

This study includes 152 patients of cholelithiasis, admitted to our upcoming World College of Medical Sciences and Research Hospital, Jhajjar, Haryana from 2016 to March 2017. Their food habit and smoking habit were noted. Symptoms and signs of clinical presentation noted. Definitive diagnosis was done on the basis of LFT and ultrasonogram. No indication for cholangiogram in any of our case, so it was not done. In some cases, where thickened GB wall was found, CT was done to rule out GB cancer otherwise ultrasonogram was relied upon. After explaining the pros and cons of operations available, we followed the patient centric decision. Most of the patients chose to undergo mini-laparotomy cholecystectomy, where we put about 6 +-1 cm incision in right subcostal area. Some patients chose laparoscopic cholecystectomy. Most mini-laparotomy cholecystectomies were done in high spinal except 2 cases where general anaesthesia has to be given because patients were obese. All laparoscopic cholecystectomy was done under general anaesthesia. Patients were followed up at the regular interval, up till 5 to 6 months.

Results

In the present study, majority 75.6% (Fig. 1) of our patients were female.

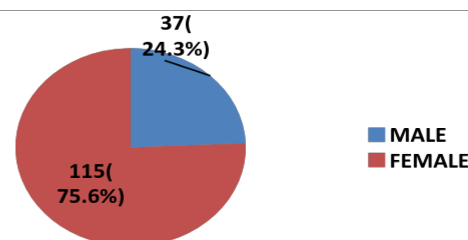

Fig. 1: Male and female Ratio

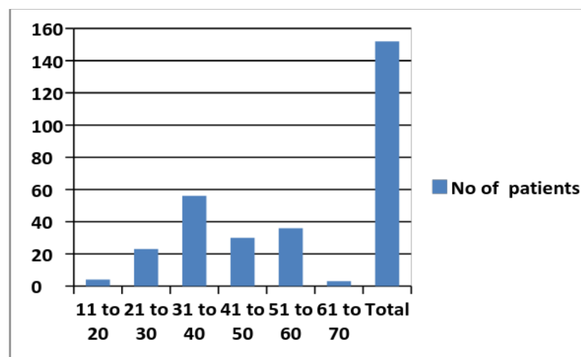

Fig. 2: Prevalence according to age groups

Regarding age group, our youngest patient was 18 yrs female and oldest patient was 65 yrs female. The maximum number of patient, we found in 31 to 40 age group (36.8%) (Fig. 2).

About 84% of our patients were a non-smoker, and 90% were vegetarian. Consumption of milk (irrespective of their vegetarian or mixed dietary habit) is almost 100% in this rural population as farming and raising cattle was their prime profession. Given the choice of either mini-laparotomy cholecystectomy (where we put around 6 cm right subcostal incision) or lap cholecystectomy, 87.5% chose mini-laparotomy.

Regarding complications in postoperative period (Table 1), about 7 cases had mild wound infection which responded antibiotic therapy. And in 4 cases, we had bile leaked, where we extended the period of drain removal for one week, otherwise, we removed sub-hepatic drain in 3to 4 days in most cases. So total complication rate was 7.23% (wound infection and bile leak).

Table 1: Complications in postoperative period

1	Biliary leakage from GB bed	4
2	Wound infection	7
3	CBD Injury	0
4	Total	11

All stones were analyzed and 93.4% were cholesterol type stones, rest was the mixed type and we did not find any pigmented stone.

There was some difference in hospital stay in mini-laparotomy and laparoscopy cholecystectomy (Table 2).

Table 2: Hospital stay (Average)

Minilap	Lapchole
5 days	3 days

Discussion

The majority, about 75.6% our patients were female and the youngest patient was 18 years female and oldest patient was 65 years female. The maximum number of patient, we found in 31 to 40 age group (36.8%) which is similar to prior studies.[1,2]

Given the choice of either mini-laparotomy cholecystectomy(where we put around 6 cm right subcostal incision) or lap cholecystectomy, 87.5% chose mini-laparotomy. This is apparently because of the cost involved. The cost of lap cholecystectomy was one and half times more than mini-laparotomy cholecystectomy in this part of the rural setup. We did all mini-laparotomy cholecystectomies in high spinal anaesthesia(86%), except two cases where because of obesity, general anaesthesia had to opt.

Regarding complications in postoperative period, 7 cases had mild wound infection which responded antibiotic therapy and total complication rate was 7.23% (wound infection and bile leak). However, this low rate of complications appears due to a good selection of cases. And these post operative complications happened in mini-laparotomy cases, and we did not have any complication in lap cholecystectomy(19 cases).

Incidentally one case we started as lap cholecystectomy, but because of the adherent GB (later it was reported as cancer GB), the operation was converted to open cholecystectomy. That patient did not do well and we lost her after 4months. We have not included that patient in our case study, just mentioned here as our exceptional experience.

All stones were analyzed and 93.4% were cholesterol type stones, rest was the mixed type and we did not find any pigmented stone. A study done in South India shows pigmented and mixed gall stones are common there.[3,4,5,6,7] This we may contribute to the food habits and life style which are different in the north and south Indians. A study done at South Italy[8] shows a sedentary lifestyle and diet rich in animal fats are significant risk factors for gall stones formation. So These factors look common in the north Indian to have cholesterol stones as in the west.[9,10,11,12] Angelico F et al, study shows that obesity and parity are risk factors for cholelithiasis.[13]

There was some difference in hospital stay in mini-laparotomy and laparoscopy cholecystectomy. Cosmetically speaking most patients looked quite satisfied with 6 cm (give and take one centimetre) subcostal incision in mini-laparotomy cholecystectomy. We did not do cholangiogram in any of our case (Pre, Intra, post-operation), as there was no indication. In none of the case, we needed CBD exploration. No late complications like jaundice or a hernia, in our 3-6 months follow-up. Given the option, our study shows most of the patients chose mini-laparotomy cholecystectomy then Lap cholecystectomy which is one and half times costlier. And they did quite well in post operative period as well, our complication rate is low (7.23%) and those complications were a mild one. We did not encounter any major complication in mini-laparotomy. Apparently, these results might be because of our selection of cases.

Our important aim of this paper is to watch the outcome when patients take the decision regarding the type of operation they have to undergo. We explain about all pros and cons of surgical undertakings as well as the cost and let the patient take the decision. In this laparoscopy era, we honour the decision of patients without influencing them otherwise. A very high percentage (87.5%) chose mini-laparotomy cholecystectomy and we delivered good results. Thus patient centricity is feasible. “Patients centricity” which stemmed from the UK’s NHS-driven thinking like “no decision about me, without me”. This has naturally guided us towards cost effective treatment in the local life style of this population. Thus we concluded that mini laparotomy cholecystectomy is feasible and simply cost effective in these rural upcoming hospitals cum medical colleges although hospital stay is little longer in mini-laparotomy cases. Whereas the study done at Bogota, Colombia shows different fact that direct cost of lap cholecystectomy is lower for patients as well as health care provider.[14,15,16] Data of laparoscopic era supports our findings.[17,18]

Conclusion

Our study shows population and pattern of presentation are not very different from another studies from India, and most of them can be managed through mini-laparotomy cholecystectomy (under high spinal) without any major complication. Patients centric decision is the natural guidance towards cost effective treatment in rural life style. Most of the gallstones were cholesterol type which seems a bit different from other part of India, may be because of dietary habit (high consumption of milk) and lifestyle.

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