Student's Journal of Health Research Africa
Vol. 4 No. 6 (2023): June 2023 Issue
https://doi.org/10.51168/sjhrafrica.v4i6.361
Original article

OUTCOME OF LAPAROSCOPIC CHOLECYSTECTOMYIN PATIENTS WITH METABOLIC SYNDROME IN ANADULT KASHMIRI POPULATION: A PROSPECTIVE HOSPITAL BASED STUDY.

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Abstract

Background:

The prevalence of Gallbladder stones in India is 6.12%. Metabolic syndrome is an important risk factor for gallstones. Patients with Metabolic Syndrome seem to be at higher risk of having perioperative complications. Aim: This research aims to study the intraoperative and postoperative complications, duration of hospital stay, and associated mortality in patients with Metabolic syndrome.

Material and Methods:

A prospective observational study was conducted in the Post Graduate Department of General Surgery, SMHS Hospital, Govt. Medical College, Srinagar on 52 patients with metabolic syndrome undergoing laparoscopic cholecystectomy for cholelithiasis from September 2020 to September 2022 following approval by an institutional ethical committee. All patients underwent lapaoscopic cholecystectomy using the standard four-port technique and hospital room setup.

Results:

The female-to-male ratio in this study was 1.5:1. Hypertension was present in 48%. Diabetes Mellitus in 32.69% of the patients, and Hypothyroidism in 19.23% of the patients. 47 out of 52 (90.3%) of the patients exceeded the waist circumference cut-off for metabolic syndrome according to ATP III criteria. 43 patients (82.6%) had Serum Triglyceride levels exceeding 150mg/dl or were on treatment for the same, HDL ≤ 40mg/dl in men and ≤ 50mg /dl in women was found in a total of 39 (75%) patients, a total of 28 patients (53.8%) had blood pressure ≥ 130/85 mmHg or on antihypertensives. Blood Sugar ≥ 100mg/dl or on hypoglycemic drugs were 21 (40.3%) patients. A total of 2 patients (3.8%)were converted to conventional open cholecystectomy for difficult calots adhesions. 1 patient (1.9%) had a bile leak and 1 patient (1.9%) had post-operative bleeding, Port site hernia in 1 patient (1.9%) and 2 patients (3.8%) developed surgical site infection.

Conclusion:

Laparoscopic Cholecystectomy is an effective procedure with excellent functional outcomes in patients with Metabolic Syndrome.

Keywords: Metabolic Syndrome, Laparoscopic Cholecystectomy, Cholelithiasis, Bile leak, Port site hernia, Submitted: 2023-03-29 Accepted: 2023-04-17

1. Introduction.

Gallstone Disease (GSD) represents one of the most common disorders among patients presenting to an emergency rooms with abdominal discomfort[1].Gall Stones occur most commonly in the Western world, however in recent years, increased incidence in India is noted, the reason being the lifestyle changes, diet, and widespread use of ultrasonography[2] The prevalence of Gallbladder stones in India is 6.12 %(Men-3.07% and Women-9.6%)[3], more common in Northern Indians than Southern Indians[4]. The incidence rises with age in both sexes until a maximum peak is obtained in the sixth decade, 2% of Gall Stones are symptomatic and follow a natural course[5]. Gallstone formation being multifactorial in origin, certain risk factors for gallstones are immutable: female gender, increasing age and ethnicity/family (genetic traits). The only established dietary risk factor is a high caloric intake[6] . Laparoscopic Cholecystectomy is considered the "gold standard" for the surgical treatment of Gall Stone Disease[7].

This procedure results in less postoperative pain, better cosmesis, and shorter hospital stay than open cholecystectomy[12.] Research suggests metabolic syndrome is an important risk factor for gallstones. The metabolic syndrome includes type 2 diabetes mellitus caused by insulin resistance, dyslipidemia, and hypertension. Patients with Metabolic Syndrome are at higher risk of having perioperative complications. This research aims to study the intraoperative and postoperative complications, duration of hospital stay, and associated mortality in patients with Metabolic syndrome.

2. Materials and Methods

This study was conducted on 52 patients with metabolic syndrome in the age group of 18 years and above admitted for laparoscopic cholecystectomy. The patients were then operated on and followed for 6 months. Most of the patients in our study were females. The female-to-male ratio in this study was 1.5:1 with a total of 31 females (59.60%) and 21 males (40.40%). 61.5% of the patients belonged to urban areas and 38.5% of the patients were from rural areas. The age of the patients ranged from 22-80 years with a mean age of 50.57 years. The majority of the patients (25%) were in the age group of 36-55 years followed by 56-65 years (23.07%). The youngest patient was 22 years of age. In our study Hypertension was present in 48% of the patients followed by Diabetes Mellitus which was present in 32.69% of the patients, Hypothyroidism was present in 19.23% of the patients. 47 out of 52 (90.3%) of the patients exceeded the waist circumference cut-off for metabolic syndrome according to ATP III criteria as shown in Table 1. 43 patients (82.6%) had Serum Triglyceride levels exceeding 150mg/dl or on treatment for same, HDL ≤ 40mg/dl in men and ≤50mg /dl in women was found in a total of 39 (75%) patients, a total of 28 patients (53.8%) had blood pressure ≥ 130/85 mmHg or on antihypertensives. Blood Sugar≥100mg/dl or on hypoglycemic drugs were 21 (40.3%) patients. One patient had the highest BMI of 37.17 and the lowest BMI noted was 19.43 with the mean BMI being 28.66.

Dyspepsia and/or bloating were the most common (80.76%) indication for surgery in our study followed by a history of biliary colic in 34.6% of patients, acute cholecystitis in 19.23% of patients, history of acute pancreatitis in 11.53%. The maximum operative time in our study was 128 minutes and the minimum operative time was 32 minutes with the mean operative time being 60.36 minutes. The mean number of days in hospital stay in our study was 2.71 days with 13 days as the maximum length of hospital stay and 1 day being Minimum. The mean no. of days to start routine work in our study was 12.46 days with 30 days being the maximum and 7 days being the minimum. A total of 2 patients (3.8%) were converted to conventional open cholecystectomy for difficult calots adhesions. In our study 1 patient (1.9%) suffered from post-operative bile leak, 1 patient (1.9%) suffered from post-operative bleeding, Port site

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hernia was present in 1 patient (1.9%). 2 patients (3.8%) developed surgical site infection.

3. Discussion

The present study was conducted in the Postgraduate Department of General Surgery, Government Medical College Srinagar from September 2020 to September 2022 and included a total of 52 patients, 31 females and 21 males, in a ratio of 1.5:1. 61.5% of the patients belonged to urban areas while as 38.5% of the patients were from rural areas. the age of the patients was ranging from 22 – 80 years with a mean age of 50.7 years. Hypertension was the most common comorbid condition present in 48% of the patients followed by type 2 diabetes mellitus in 32.69% and hypothyroidism in 19.23% of the patients respectively. The results of our study are in coherence with the results of a study conducted by Kumar N et al (2019)wherein 39% of the patients had hypertension and 42% of the patients had type 2 diabetes mellitus.

Dyspepsia/bloating was the most common indication for surgery (80.76%) followed by a history of biliary colic in 34.6% of the patients, acute cholecystitis in 19.23%, history of acute pancreatitis in 11.53% of the patients and a history of obstructive jaundice in 3.84%. Our results were in coherence with the results of a study conducted by Gui GPH et al (1998)[9]. The minimum operative time was 32 minutes, the maximum operative time was 128 minutes, and the mean of 60.36 minutes. The mean time of surgery in our study was comparable to the results of a study conducted by Talki A et al (2018)[7]. The mean number of days of hospital stay in our study was 2.71 days with a maximum of 13 days and a minimum of 1 day, which was similar to the results of studies conducted by Talki A et al (2018)[7] the mean number of days to start routine work was 12.46 days with 7 days being the minimum and 30 days being maximum which is comparable to the study conducted by Tamahankar A et al (2010)[11], a total of 2 patients (3.8%) were converted to open cholecystectomy, which was similar to the results obtained by Chang W T et al (2009)[12] and Ammori BJ et al (2001)[10] with conversion rates of 4.6% and 4.3% in their studies respectively. 2 patients (3.8%) suffered from surgical/port site infection which was managed by daily dressings, and topical and systemic antibiotics, and 1 patient (1.9%) had post-operative bleeding, which was from port/trocar site and was managed conservatively, 1 patient (1.9%) from our study suffered from a bile leak, which was managed conservatively with iv fluids and iv antibiotics drain output monitoring. 1 patient (1.9%) from our study suffered from an umbilical port hernia.

4. CONCLUSION

Minimally invasive Laparoscopic Cholecystectomy for Cholelithiasis in patients with Metabolic Syndrome is an effective procedure which gives excellent functional outcomes with very few complications. The the minimally invasive technique gives the additional advantage of less operative time, less intraoperative blood loss, less wound complications, less damage to the soft tissues, less duration of hospital stay and early return to routine work and improved cosmesis.

5. Limitation:

There were no limitations in the study.

6. Source of funding:

This study was funded by SMHS Hospital.

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8. Publisher details:

Publisher: Student's Journal of Health Research (SJHR)
(ISSN 2709-9997) Online
Category: Non-Governmental & Non-profit Organization
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