



General Surgery

A STUDY TO ASSESS PORT SITE COMPLICATIONS IN PATIENTS UNDERGOING LAPAROSCOPIC SURGERIES WITH ABNORMAL BODY MASS INDEX AND ABNORMAL SERUM INFLAMMATORY MARKERS IN WESTERN UP POPULATION

Dr. Jaya Krishna Reddy*

Postgraduate, Department of Surgery, Teerthanker Mahaveer Medical College & Research Centre, Moradabad, Uttar Pradesh, India,*Corresponding Author

Dr. Chandra Kishor Jakhmola

Professor, Department of Surgery, Teerthanker Mahaveer Medical College & Research Centre, Moradabad, Uttar Pradesh, India.

ABSTRACT

Background: Laparoscopic surgery has replaced the open surgery and has revolutionized the field of surgery. The rate of port site complications is increased with increasing size of the port site incision and trocar. Laparoscopic port site complications are more common with older age, male gender, with increased levels of markers of inflammation. Obesity, according to the World Health Organization, affects 13% of the population, which means that 600 million people have body mass index (BMI) over 30 kg/m². Subject and Methods: The cross-sectional analysis and observations is being conducted in a hospital and all the patients are going through laparoscopic surgeries with a BMI of > 25 kg/m². They also have a PRE-OPERATIVE SERUM CRP of greater or less than 10 mg/L and they are being admitted at the medical facility named Department of Surgery, TMMC & RC. This was a study from July 2021 to August 2022 on 75 patients who were admitted in TMMC&RC. Result: of the 75 patients undergoing laparoscopic surgery, type of laparoscopic surgery, where 1 subject was found in b/l lap top inguinal hernial repair i.e. 1.3%, 6 subjects were found in lap appendectomy i.e. 8.0%, 62 subjects were found in lap cholecystectomy i.e. 82.7% and 6 subjects were found in lap top inguinal hernial repair i.e. 8.0%. **Conclusion:** The main outcome was to assess the different complications in patients who were undergoing laparoscopic surgeries of a body mass index greater than 25 kg/m² and a PRE-operative Serum CRP of greater than 10 mg/L. In most cases, the P-value has been greater than 0.05, indicating that there was neither a connection nor an association between clinical presentations and BMI category. Furthermore, as per the clinical trials, there are different kinds of surgeries in women and in men there are only 2-3 types of surgical procedures for fixing the health issue.

KEYWORDS : body mass index, laparoscopic,**Introduction:**

Laparoscopy is also used to diagnose various illnesses that arise within the pelvis and abdomen.[1] Additionally, it can be used to carry out surgical techniques like discarding a diseased or damaged tissue or organ sample for additional analysis. (Biopsy).

August Lange Buch's open cholecystectomy technique has established and it as gold standard for the absolute therapy of symptomatic cholelithiasis

The introduction of laparoscopic cholecystectomy in the 1980s transformed the care disease of gall bladder. The NIH consensus conference in Bethesda in September 1992 determined that laparoscopic cholecystectomy was the preferred management for cholelithiasis. The surgical association as adopted and recognised as the new gold standard for cholelithiasis for gall stone diseases [2][4] It is a safe and efficient procedure with a number of advantages over open surgery, having its own set of risks, such as those associated with laparoscopy (abdominal wall) bleeding, abdominal vessel injury, retroperitoneal vessel injury, omental bleeding, gastrointestinal perforation, solid visceral injury, bladder perforation and infection), and those associated with cholecystectomy (abdominal wall bleeding, omental bleeding, abdominal vessel injury, retroperitoneal vessel injury (gallbladder fossa bleeding, bile duct injury, bile leakage, and infection). Our study's goal is to evaluate and manage port site infections in laparoscopic operations.[3]. century, laparoscopy has grown in popularity. patients with a BMI of 30 kg/m² have a 6.3% higher chance of developing trocar-site herniation. As a result, it is necessary to develop a practical tool that could help, especially abdominal wall thickness in patients, to easily, precisely, and evenly close the port site. Newly, a closure of trocar site tool was developed to quickly and easily close the site of trocar in the abdomen during the laparoscopic surgery.

MATERIALS AND METHODS :

Source of data: Patients admitted to undergo laparoscopic surgeries, routine in TMMC&RC.

Study type: cross-sectional analysis and observations

Period of study : 18 months

Total number of participants including cases and controls : 75

Inclusion criteria: Patients > 18 years of age, of both sex who consented to (a) undergo laparoscopic procedure for various ailments pertaining to department of general surgery (b) participate in the study .Patients whose BMI \geq 25 kg/m² and pre operative CRP \geq 10mg/l

Exclusion criteria: 1)Any prior open or laparoscopic abdominal surgery in past .2)Patients suffering from Systemic lupus erythematosus, Scleroderma, Dermatomyositis, Ulcerative colitis, Leukemia, organ transplant recipients .3)The patient should fulfill both the criterias, if he is unable to, he will be excluded.

Statistical analysis: SPSS version 20 was used for all analysis. For quantitative data, mean and standard deviation were calculated, and for qualitative data, frequency and percentages were calculated. Chi-square test has been used to find the association between categorical variables and to compare the Mean we use One-Way ANOVA Test. The level of significance was considered as < 0.05 or 5%

Results:

Fig 1: - Indicate the frequencies of the cases depending upon BMI Category.

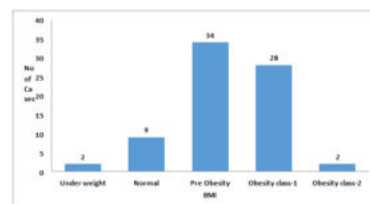


Fig.1

Fig.1 represent the frequencies of BMI Category, in which 2 cases were observed in Underweight i.e. 2.7%, 9 cases were observed in Normal i.e. 12.0%, 34 subjects were found in Normal i.e. 45.3%, 28 subjects were found in Normal i.e. 37.3%, and 2 subjects were found in Normal i.e. 2.7%

Fig 2: - Represent the frequencies of the cases based upon Type of Laparoscopic Surgery.

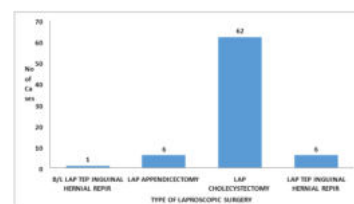


Fig.2

fig 2 shows the frequency distribution of Type of Laproscopic Surgery, where 1 subject was found in B/L LAP TEP INGUINAL HERNIAL REPAIR i.e. 1.3%, 6 subjects were found in LAP APPENDICECTOMY i.e. 8.0%, 62 subjects were found in LAP CHOLECYSTECTOMY i.e. 82.7% and 6 subjects were found in LAP TEP INGUINAL HERNIAL REPAIR i.e. 8.0%

Table 1: - Association between Test Variable and BMI Category.

Test Variable	BMI Category					P-value
	Under weight	Normal	Pre Obesity	Obesity class-1	Obesity class -2	
AGE	16.5±2.1	25.6±7.5	41±13.5	47.6±10.8	59±18.4	0.001
CRP >10	26.5±9.2	27.6±6.7	25.8±6.5	27.8±8.9	24.5±16.3	0.847

Table 1 depicts the Association between Type of Test Variable and BMI Category, The Association between AGE and BMI Category were found p-value is < 0.05 considered statistically significant and Association between CRP >10 and BMI Category were found statistically not significant as the p-value is > 0.05

Discussion:

While forming a correlation between the clinical profile and the etiological factors of the subjects suffering from different symptoms of laparoscopic surgeries, the results that came out were calculated on the basis of SPSS version 20. Quantitative data were analysed using the average and standard deviation, while frequency and percentages were used to calculate qualitative data. Chi-square test has been applied for finding an association between categorically distinct variables and also for comparing the mean that is being used for figuring out a One-way ANOVA test. The degree of significance was considered as 0.05 or 5% (Bafort, et. al, 2020)

The first analysis was done for figuring out the percentage on the basis of BMI category. Here 2 subjects were found to be underweight and comprised the 2.75% of the total 100%. 9 subjects were individuals under normal category and comprised the 12%, whereas patients who were pre-obese were only 34, which means 45.3% of subjects who were suffering from obesity initially were most prone to health issues which might end up with laparoscopic issues. There are different classes of obesity as well and among them the first class was obesity-1, where 28 patients (the second highest) were prone to laparoscopic surgeries and this particular BMI category comprised the 37.3%, which is just right after the pre-obesity category. Furthermore, the obesity class 2 comprised only 2 subjects which is just 2.7% of the total number of patients evaluated (Tharp, et. al, 2020) The next analysis has been done on the basis of frequency distribution of the pain in abdomen and nearby areas in the body. The abdomen can be explained to be the tummy area and among 75 cases, 62 subjects experienced severe pain in the abdomen area, which accounted for 82.7%. 6 patients were suffering from pain in lower abdomen, which comprised 8% and furthermore, there was severe swelling in the bilateral inguinal region, however, this was only experienced by 1 subject, which comprised 1.3% of the total cases analyzed. Patients also suffered pain in the left inguinal region, where almost 4 patients were suffering and the percentage was 5.3%. There were only 2 patients, who experienced pain in the right inguinal region. Thus, it can be said that patients going through laparoscopic surgical procedures usually experience massive pain in the abdomen and this is common in cases of both genders (Sao, et. al, 2019). Furthermore diagnosis was done, where a distinct frequency of distribution of the symptoms were figured out. As per the clinical test, 6 subjects were suffering from appendicitis, which comprised 8%. There was only 1 subject that had signs of bilateral inguinal hernia and these kinds of reasons are quite rare for patients that have to go through laparoscopic surgeries. Furthermore, there were 62 patients that underwent cholecystitis and the signs and symptoms clearly suggested that they will have to go through laparoscopic surgeries and the percentage was somewhere around 82.7%.

4 patients showed signs of left inguinal hernia, which comprised 5.3%. There were only 2 patients that were suffering from right inguinal hernia, which comprised 2.7%. Thus, it is evident that from the above diagnosis, patients undergoing symptoms of cholecystitis are most prone to undergo laparoscopic surgery (Lyu, et. al, 2018).

There are different types of laparoscopic surgeries and the next analysis shows how many different types of these kinds of surgeries are common in how many subjects. The bilateral lap tep inguinal genial repair was the rarest one and it was only found in 1 subject, that made the percentage of 1.3%. Furthermore, in the case of lap appendicectomy, 6 subjects were required to get this kind of surgical process and it comprised 8% of total patients. For LAP cholecystectomy, the highest number of subjects that is 62 were found to match the profile and these patients constituted the total 82.7% of 100% cases analyzed. Finally, the Lap Tep Inguinal Hernia Repair was a surgery that was required to be performed only on 8 subjects, so in this case the percentage was only 8%. Thus, it can be claimed that the most common form of laparoscopic surgery was Lap Cholecystectomy (Strasberg, 2019).

As a results out of 75 cases 1 case was found to be under surgical site emphysema, and no other complications like visceral injury, port site infection and hypertrophic scar. The percentage of these outcomes among all patients availing laparoscopic surgeries were common (Zhang, et. al, 2019).

The next analysis was done for determining the relation between clinical presentation and BMI category, where 1 patient experienced pain in abdomen and were underweight, 7 patients with normal BMI also expired the same pain and so did 27 patients under the pre-obesity category, 25 under the obesity class 1 and 2 under the obesity class 2. Among subjects experiencing pain in lower abdomen, 1 was underweight, 2 were normal, 2 were pre obese, 1 was under the obesity class 1 and 0 were under the obesity class 2. For patients experiencing swelling in bilateral inguinal region, 0 patients were underweight, 0 were normal, 1 patient was preobese, 0 were under obesity class 1 and obesity class 2. For patients experiencing swelling in the left inguinal region, 0 patients were underweight, 0 were under normal category, 2 were in their pre obese stage, 2 were in their obesity class 1 and 0 were in their obesity class 2. There was massive swelling in right inguinal region for 2 patients who were pre-obese, which comprised of only 5.9%. This association was also found to be less significant with p-value > 0.05 (Pimpale, etl. Al, 2019).

Furthermore, the association between the type of test variable and BMI category specifically in females were found to be statistically significant considering p-value < 0.05 and the association between CRP>10 and BMI category in females were found to be statistically less significant considering p-value > 0.05. The association among the type of test variable and BMI category for males were not found to be less significant as the pvalue was greater than 0.05 and the association between CRP>10 and BMI category (males) were found not significant as the p-value was >0.05. The final association test among type of test variable and age interval showed the association between AGE and age interval, which turned out to be quite significant as the P-value was less than 0.05 and the association between the two variables that was age interval and CRP>10 were found to be less significant since the p-value was higher than 0.05 (Kokkinos, et. al, 2019).

CONCLUSION:

Thus, it can be summarized that people undergoing laparoscopic surgeries have different determinants and different factors that need to be taken under consideration. There was no connection among BMI and age interval and also the type of laparoscopic surgery, it can be said that both the genders are not equally affected. The main outcome was to assess the different complications in patients who were undergoing laparoscopic surgeries of a body mass index greater than 25 kg/m² and a PRE-operative Serum CRP of greater than 10 mg/L.

In most cases, the P-value has been greater than 0.05, indicating that there was neither a connection nor an association between clinical presentations and BMI category. Furthermore, as per the clinical trials, there are different kinds of surgeries in women and in men there are only 2-3 types of surgical procedures for fixing the health issue.

REFERENCE

- Gupte, N., Rathod, J.B. and Yagnik, V.D., 2017. A Study of a Prevalence of Port Site Infections in Laparoscopic Surgery in a Tertiary Care Centre in the Rural Set Up. BJMMR, 20(10), pp.1-9.
- Saini, S. and Saini, M.K., 2019. A study of port site complications after laparoscopic cholecystectomies at tertiary care hospital in western Rajasthan. International Journal of Medical and Biomedical Studies, 3(7).
- Karthik, S., Augustine, A.J., Shibumon, M.M. and Pai, M.V., 2013. Analysis of laparoscopic port site complications: A descriptive study. Journal of minimal access surgery, 9(2), p.59.
- Radunovic, M., Lazovic, R., Popovic, N., Magdelinic, M., Bulajic, M., Radunovic, L.,

Vukovic, M. and Radunovic, M., 2016. Complications of laparoscopic cholecystectomy: our experience from a retrospective analysis. Open access Macedonian journal of medical sciences, 4(4), p.641.