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A Clinical Study of Clavien-Dindo Classification of Postoperative Complications Following Major Abdominal Surgeries in a Tertiary Care Centre

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Abstract:- There is no surgery without any complication. It is every surgeon's aim to minimize Postoperative complications. It is therefore necessary to evaluate and classify the complications in an easiest possible way. Clavien – Dindo classification is a simple and acceptable way to evaluate post-surgical complications in patients undergoing major abdominal surgeries.

Keywords:- *Complications, Clavein-Dindo, post-operative, major, abdominal surgeries.*

I. INTRODUCTION

- Everysurgerycomeswithitsowncomplications.
- The surgical team continually strives to keep the occurrence of serious problems for patients experiencing any type of surgery at a minimum..
- Frequentlythefunctionalresultsoftheoperationare compromised bycomplications.
- Insomecasesthepatientneverrecoversto the preoperative level of function.
- The significant and difficult part is the suffering borne by the patient who enters the hospital anticipating an uneventful surgery.
- Appropriate appraisal of the surgeon's work and perhaps advancement in the surgical field have been impeded by the lack of agreement within the surgical field on the accurate manner to report surgical complications..
- Clavien-Dindo classification is simple and acceptable way in evaluating post-surgical problems in patients undergoing major abdominal surgeries.

II. AIMS & OBJECTIVES

- The aim of this study is to assess the postoperative complications in patients who underwent major abdominal surgeries and to grade them according to Clavien-Dindo classification.
- To establish the usefulness of Clavien-Dindo classification in postoperative assessment of abdominal surgeries.

III. MATERIAL & METHODS

- Prospective, cross sectional, hospital based study in patients admitted at GEMS medical college for major abdominal surgeries that are both elective and emergency.
- A total of 109 cases those who underwent major abdominal surgeries from January 2021 to August 2021 have been studied.
- A detailed history was taken and patients were evaluated preoperatively based on history, associated co-morbidities and other investigations.

A. INCLUSION CRITERIA

The study included all patients hospitalized to the general surgery department who were older than 18 and interested in taking part.

B. EXCLUSION CRITERIA:

- Patients who underwent abdominal surgery earlier.
- Pregnancy
- Surgeries for carcinomas
- Immunocompromised patients
- Complications developed after 30 days of surgery
- Those not willing to participate.

IV. STATISTICAL ANALYSIS OF DATA

- Data collected was entered into excel sheets and results were analyzed using SPSS.20 software.
- The distribution of the variables was determined at 67% with a 20% precision and a 95% confidence interval.

V. SURGERIES INCLUDED IN OUR STUDY

- LAPAROSCOPIC CHOLECYSTECTOMY.
- OPEN CHOLECYSTECTOMY.
- EXPLORATORY LAPAROTOMY FOR ACUTE INTESTINAL OBSTRUCTION.
- EXPLORATORY LAPAROTOMY FOR HOLLOW VISCUS PERFORATION.
- SPLEENECTOMY.

VI. RESULTS

- **AGE DISTRIBUTION:** The age of patients ranged from 18-68years with a mean age of 43.78years and most patients are between 40-50years.

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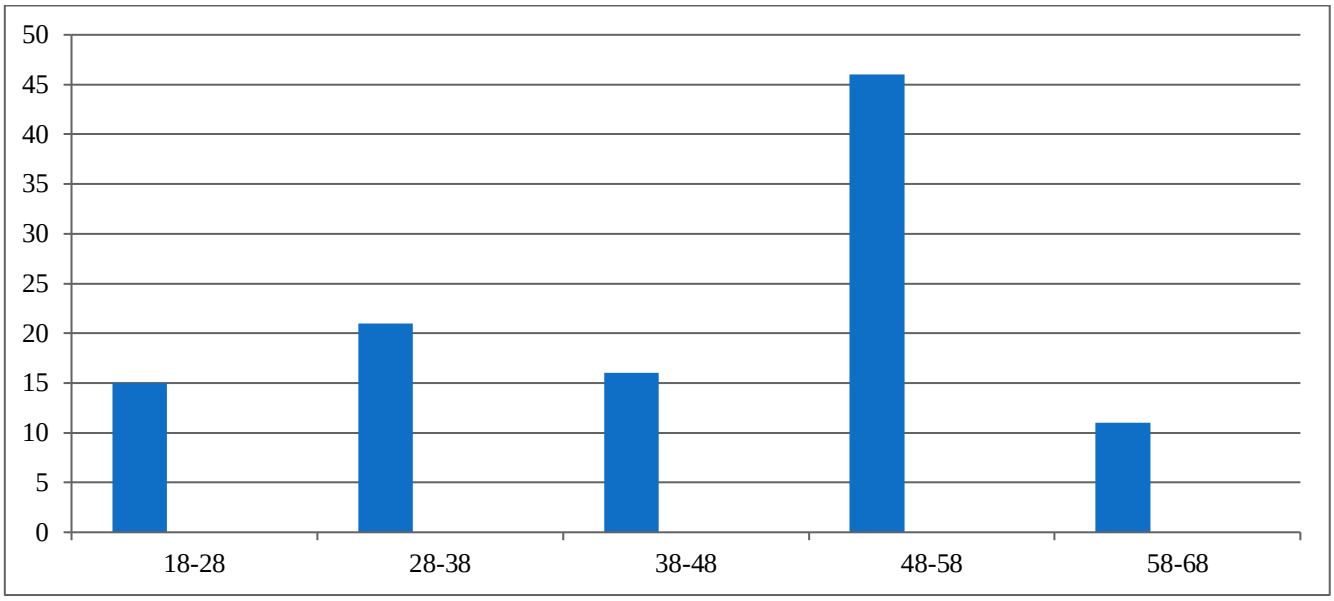

Fig. 1: Age Distribution

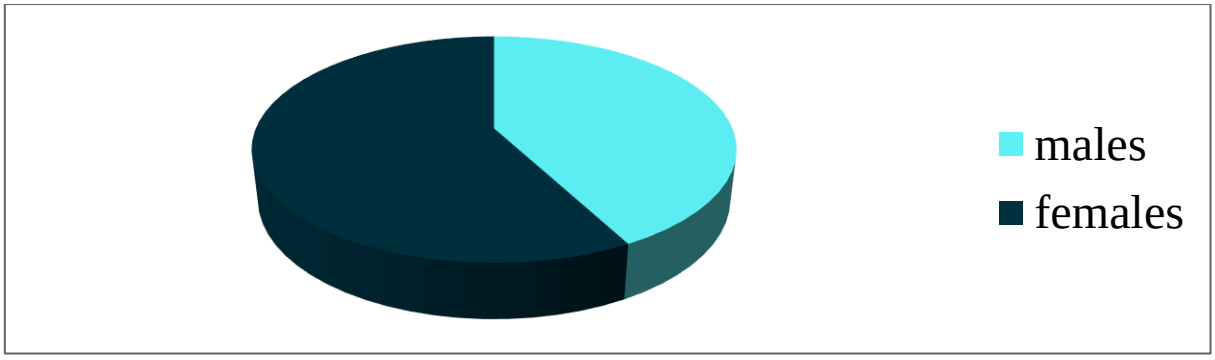

Fig. 2: Sex Distribution

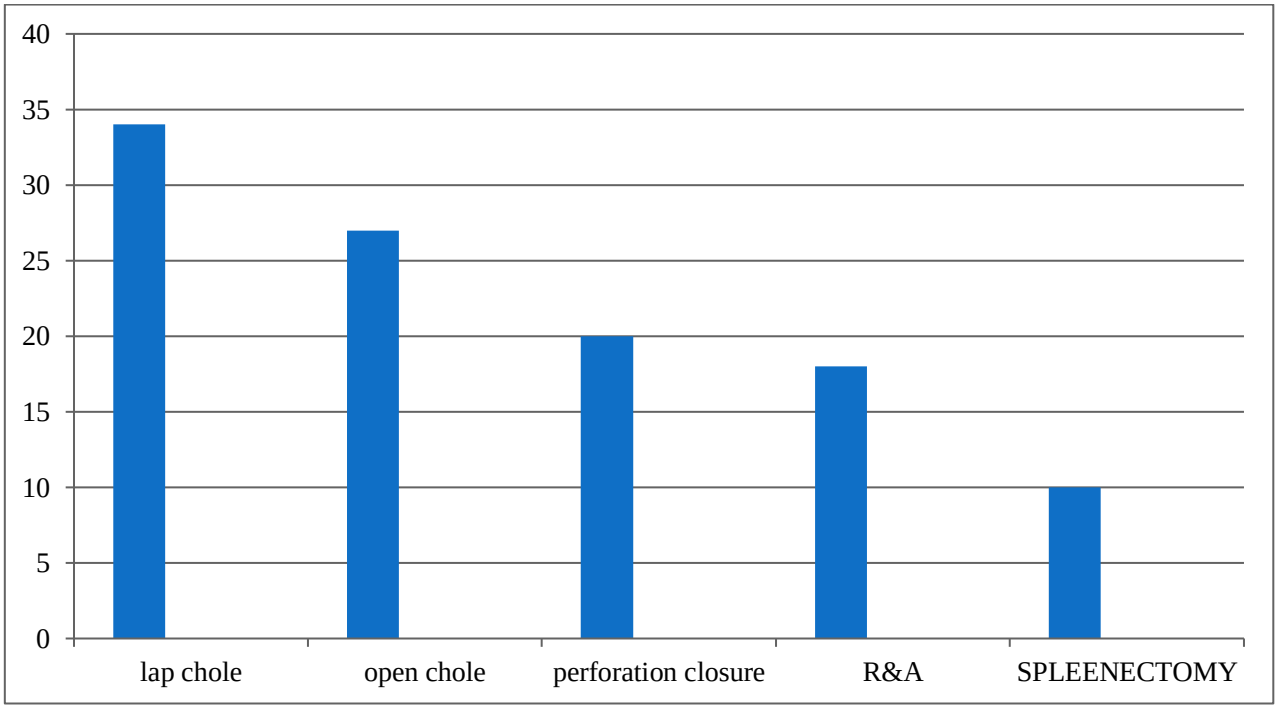

Fig. 3: Surgery Incidence

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DIABETES MELLITUS	19
HYPERTENSION	17
ANAEMIA	13
HYPOPROTINEMIA	11
JAUNDICE	4
OTHERS	6
ABSENT	39

Table 1: Co-Morbidities

POST OP FEVER	16
PROLONGED ICU STAY	23
WOUND INFECTION	11
ANAEMIA	14
ACUTE KIDNEY INJURY	13
BASAL LUNG ATELECTASIS	12
OTHERS	4
ABSENT	15
DEATH	1

Table 2: Complications

GRADES	DEFINITION
1	Any deviation from normal post op course without the need for pharmacologic treatment or surgical , endoscopic and radiological interventions
2	Requiring pharmacological treatment with drugs other than such allowed for grade 1 complication. Blood transfusion and TPN included.
3	Requiring endoscopic , radiological or surgical intervention
3A	Intervention not under GA
3B	Intervention under GA
4	Life threatening complications requiring ICU management
4A	Single organ dysfunction including dialysis
4B	Multi organ dysfunction
5	Death of patient

Table 3: CLAVIEN-DINDO CLASSIFICATION

VII. DISCUSSION

- As a result of the ease with which the information in our database may be transformed into this classification, the Clavien - Dindo categorization is unbiased and straightforward.
- It should be emphasized that only 32.1% of patients who used this approach had a normal post-operative course, and 67.9% of patients experienced any variation from it.
- This is as a result of the study's inclusion of emergency abdominal surgery.
- The common age group of presentation was 48-58 years (42.2%) followed by 28-38years (19.2%) then 38-48 years (14.6%) followed by 18-28 years(13.7%) and 58-68 years(10.09%).
- Total emergency surgeries done were 44 (40.3%)and elective surgeries were 65(59.6%).
- Most commonly associated co morbidity was diabetes (17.43%) and hypertension (15.59%) followed by anemia (11.92%) and hypoproteinemia (10.09%).
- The commonest complication was prolonged ICU stay (21.1%) which was seen in patients with above mentioned comorbidities as they required correction of these disorders.
- Patients with anemia preoperatively and some of them postoperatively required blood transfusions putting them in grade 2 of Clavien-Dindo classification.

- Out of the 13 patients that presented with acute kidney injury 4 patients required hemodialysis postoperatively putting them into grade 4A of classification and the rest were treated conservatively.
- Out of 12 patients with basal lung atelectasis as complication 2 patients required intubation and mechanical ventilation putting them into grade 3B.
- Grade 5 complication was noted in one case that was brought with features of peritonitis, septic shock and acute kidney injury.
- Patient was operated on emergency basis and was monitored in ICU. Patient was declared dead on second post-operative day due to multi organ failure.
- Mean ICU stay of our patients was noted to be 6.3+ 2.9 days.
- Patients with complications of grades 2 and 3 required longer stays in the intensive care unit (ICU), confirming the value of the Clavien-Dindo classification in identifying problems of various intensities.

VIII. CONCLUSION

- To sum up, the Clavien-Dindo classification offers a straightforward and objective technique to record all problems in patients having major abdominal procedures.
- This grading method successfully separates the severity of complications from a typical post-operative course and enables the surgeon to make that distinction.
- Comparing the varied complications between various operations is also of special interest.

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