

## Role of Open Cholecystectomy In Place Of Conversion from Laparoscopic Cholecystectomy in This Era.

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### Abstract:

**BACKGROUND:** Laparoscopic cholecystectomy<sup>(1)</sup> is the commonest laparoscopic procedure performed all over the world. It is considered as the gold standard for treatment of symptomatic gallbladder stones. The aim of this study is to evaluate the role of open cholecystectomy from the start without laparoscopic trial in patients where conversion from laparoscopic approach was done in difficult cases. Factors determining the conversion were adhesions and unclear anatomy of calots which can be diagnosed only laparoscopically. But in patients with previous history of upper abdominal operations, age>60 years, diabetic patients, gangrene gallbladder, empyema gallbladder, emphysematous gallbladder, etc., considering of open cholecystectomy is safer than conversion of laparoscopic approach.

**METHODS:** This is a retrospective study of patients who underwent cholecystectomy between January-2018 to October-2018 at Government Medical College & ESI Hospital, Coimbatore. This study includes all patients who underwent cholecystectomy as elective or emergency, open (Group- 1) or conversion from laparoscopic to open approach (Group-2) or laparoscopic cholecystectomy (Group-3) for gall stones.

**RESULTS:** Risk factors like age>60 years, diabetic patients, liver cirrhosis, history of previous upper abdominal surgery, gallbladder status can be studied preoperatively and can be considered as predictors for open cholecystectomy.

**CONCLUSION:** Thorough history and consideration of risk factors, role of radiological investigations like ultra sonogram and MRCP preoperatively and their clinical correlation in assessing risk factors have to be studied thoroughly to assess the feasibility of open cholecystectomy could be done for these patients having risk factors without laparoscopic trial. Further large scale studies may help in assessing these factors.

**Key Words:** Gallbladder stone, open cholecystectomy, Laparoscopic cholecystectomy, cholecystitis.

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### I. Introduction:

Laparoscopic cholecystectomy is the gold standard for treatment of symptomatic gallbladder stones and has replaced the traditional open cholecystectomy<sup>(2)</sup>. Most open cholecystectomies are done only as a result of conversion from laparoscopic cholecystectomies<sup>(3)</sup>. Conversion is done due to adhesions, bleeding and unclear anatomy. In patients with other risk factors like old age, acute cholecystitis, previous upper abdominal surgeries, diabetes mellitus, gangrene gallbladder, empyema gallbladder, emphysematous gallbladder considering open cholecystectomy from the start without laparoscopic trials is the aim of this study.

### PURPOSE OF THE PROJECT:

The proper indication of primary open cholecystectomy and conversion from laparoscopic cholecystectomy has to be evaluated and analysed. In this study the primary indication only for gallbladder stones was evaluated.

### II. Materials And Methods:

This is a retrospective study of patients who underwent cholecystectomy between January-2018 to October-2018 at Government Medical College & ESI Hospital, Coimbatore. This study includes all patients who underwent cholecystectomy as elective or emergency, open or conversion from laparoscopic to open approach or laparoscopic cholecystectomy for gall stones.

**METHODS AND DATA ANALYSIS:**

The patients were divided into 3 groups.

- GROUP-1: Open cholecystectomy from the start.
- GROUP-2: Conversion to open from the laparoscopic approach.
- GROUP-3: Laparoscopic cholecystectomy.

Following Preoperative factors<sup>(4)</sup> of the patients were collected and analysed in all three groups.

- ✚ Age
- ✚ Gender
- ✚ Comorbidities
- ✚ History of upper abdominal surgeries<sup>(5)</sup>
- ✚ Elevated bilirubin

Following Intraoperative factors were collected and analysed in all three groups.

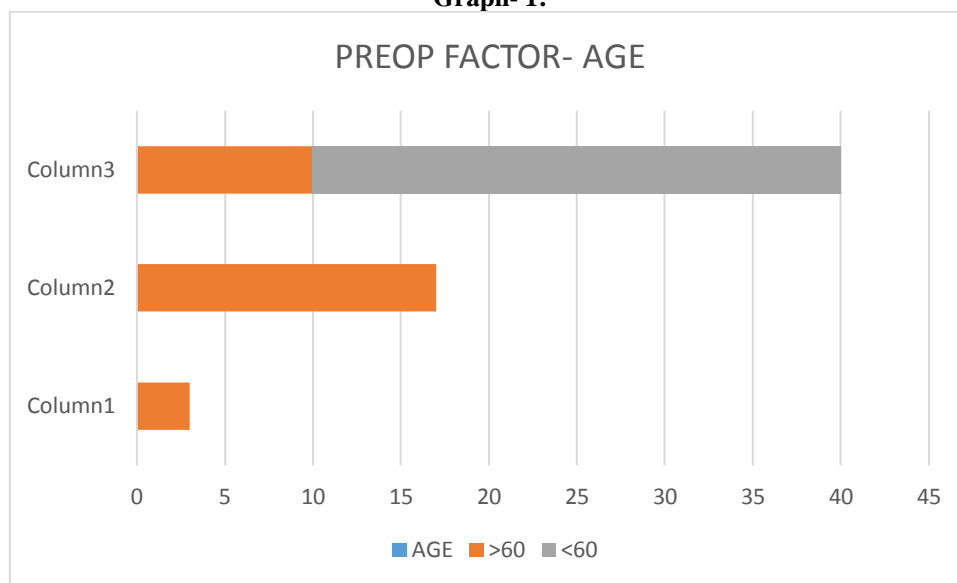
- ✚ Adhesions
- ✚ Bleeding
- ✚ Unclear anatomy of calots
- ✚ Liver cirrhosis
- ✚ Acute cholecystitis
- ✚ Empyema gallbladder

The data obtained were converted into tables and graphs plotted. Thus they were analysed.

**Table- 1:**

PREOP FACTOR-AGE			
AGE	GROUP-1 (OPEN CHOLE)	GROUP-2 (CONVERTED OPEN)	GROUP-3 (LAP CHOLE)
>60	3	17	10
<60	0	0	30

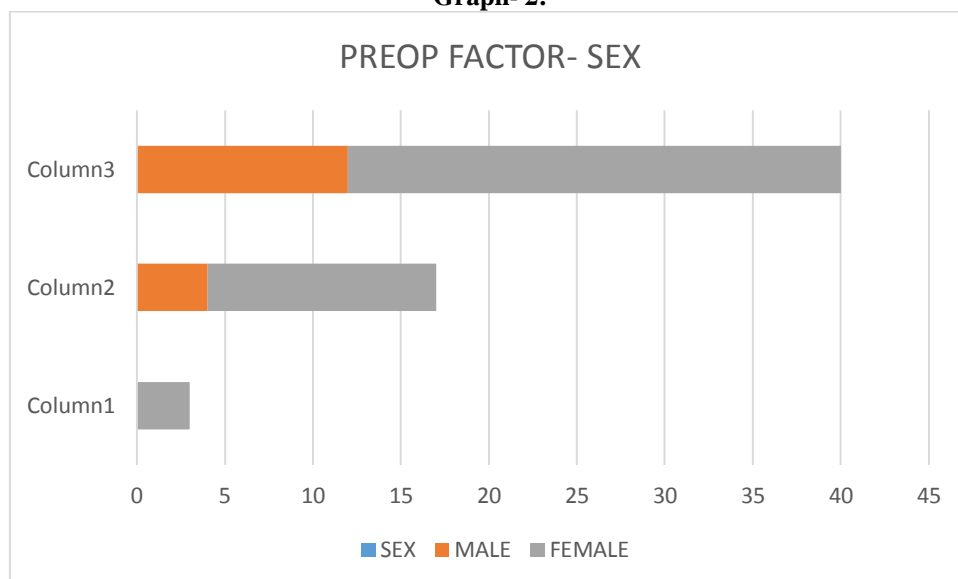
**Graph- 1:**



**Table-2:**

PREOP FACTOR- SEX			
SEX	GROUP-1 (OPEN CHOLE)	GROUP-2 (CONVERTED OPEN)	GROUP-3 (LAP CHOLE)
MALE	0	4	12
FEMALE	3	13	28

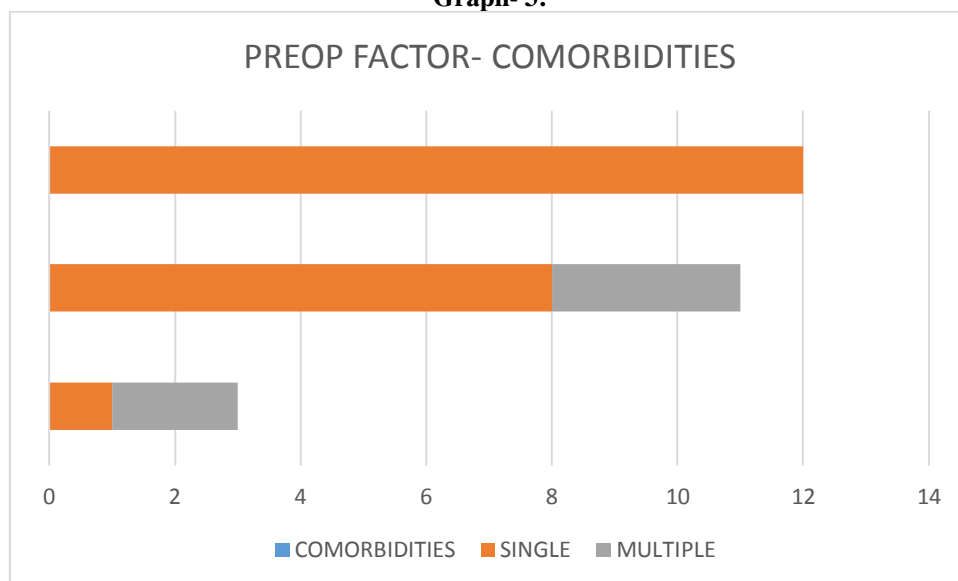
**Graph- 2:**



**Table- 3:**

PREOP FACTOR- COMORBIDITIES			
COMORBIDITIES	GROUP-1 (OPEN CHOLE)	GROUP-2 (CONVERTED OPEN)	GROUP-3 (LAP CHOLE)
SINGLE	1	8	12
MULTIPLE	2	3	0

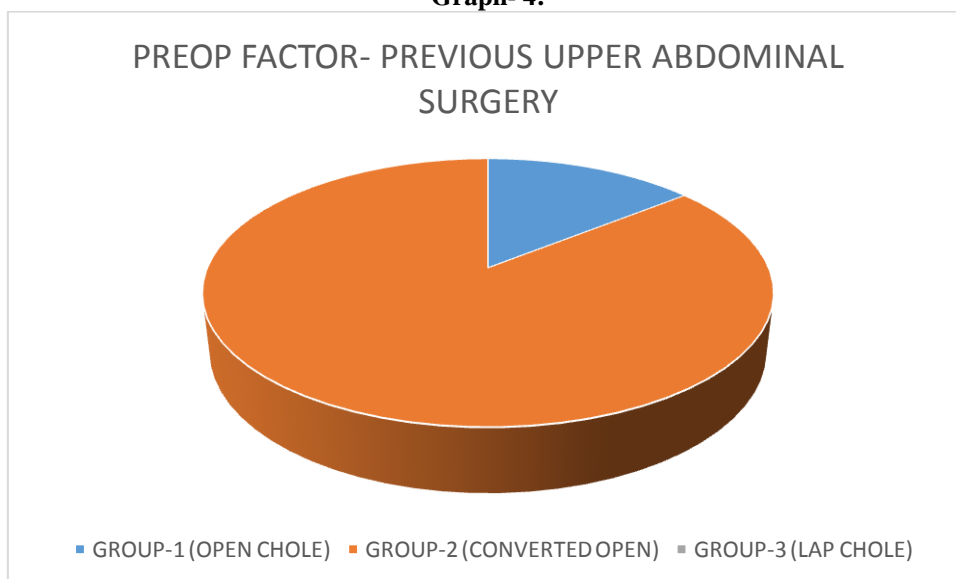
**Graph- 3:**



**Table- 4:**

PREOP FACTOR- PREVIOUS UPPER ABDOMINAL SURGERY			
HISTORY	GROUP-1 (OPEN CHOLE)	GROUP-2 (CONVERTED OPEN)	GROUP-3 (LAP CHOLE)
PRESENT	1	6	0

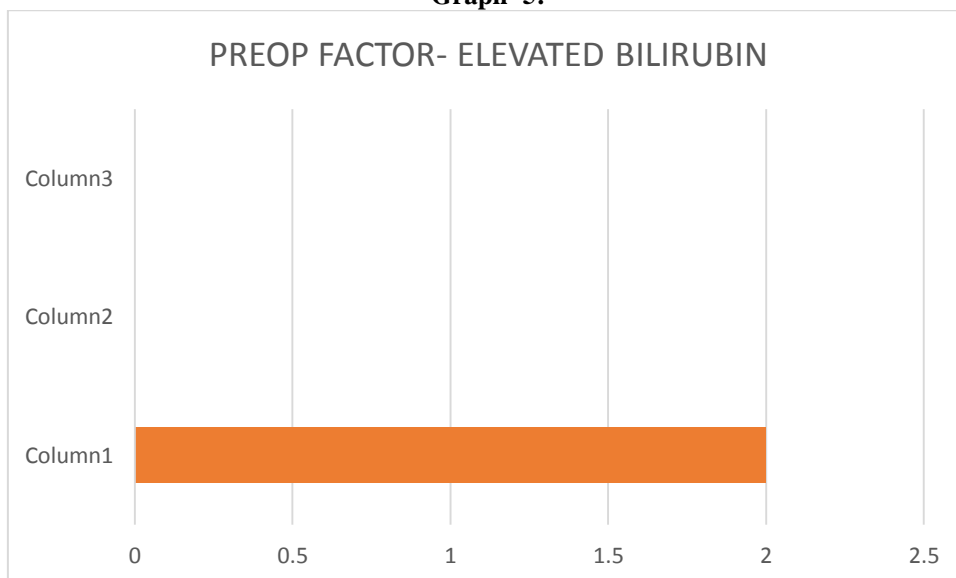
**Graph- 4:**



**Table- 5:**

<b>PREOP FACTOR- ELEVATED SERUM BILIRUBIN</b>			
HISTORY	GROUP-1 (OPEN CHOLE)	GROUP-2 (CONVERTED OPEN)	GROUP-3 (LAP CHOLE)
PRESENT	2	0	0

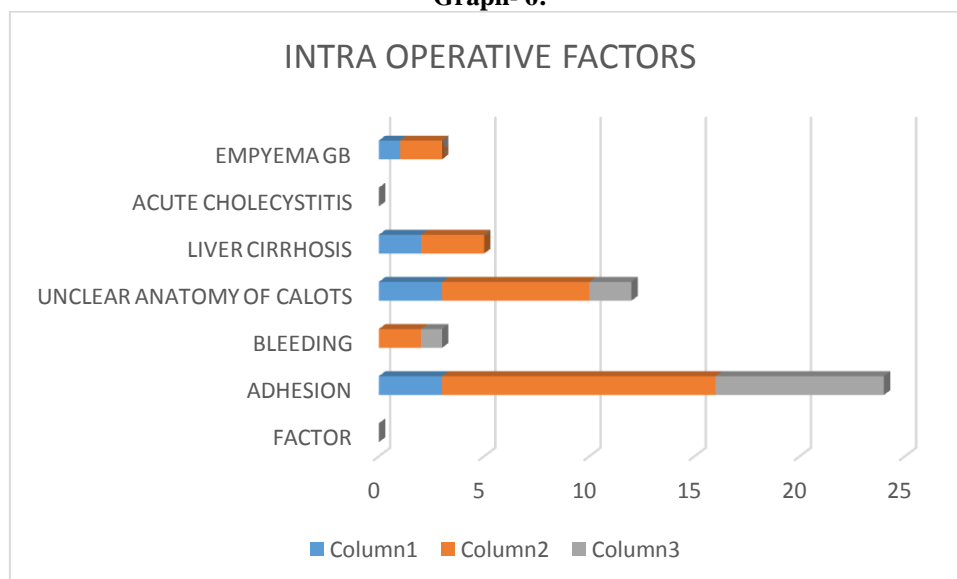
**Graph- 5:**



**Table- 6:**

<b>INTRA OPERATIVE FACTORS</b>			
FACTOR	GROUP-1 (OPEN CHOLE)	GROUP-2 (CONVERTED OPEN)	GROUP-3 (LAP CHOLE)
ADHESION	3	13	8
BLEEDING	0	2	1
UNCLEAR ANATOMY OF CALOTS	3	7	2
LIVER CIRRHOSIS	2	3	0
ACUTE CHOLECYSTITIS	0	0	0
EMPHYEMA GB	1	2	0

**Graph- 6:**



### III. Results:

Group- 1 patients were older and had history of upper abdominal surgeries whereas Group- 3 patients were younger.

Group- 2 patients had adhesions and unclear anatomy.

Liver cirrhosis mostly noted in Group-1.

Adhesions noticed less in Group- 3.

Risk factors like age > 60 years, diabetic patients, liver cirrhosis, history of previous upper abdominal surgery, gallbladder status can be studied preoperatively and can be considered as predictors for open cholecystectomy.

### IV. Discussion:

Lap cholecystectomy<sup>(6)</sup> is the gold standard for uncomplicated gallbladder disease whereas open cholecystectomy is reserved for most complex cases usually in emergency for acute cholecystitis, associated comorbidities and previous upper abdominal surgeries. Conversion is done only in vases of dense adhesion, unclear anatomy of calots, severe uncontrollable bleeding, and major bile duct injuries.

If the gall bladder is found to be distended, tense and friable it is difficult to hold the gall bladder for retraction. If there are perihepatic adhesions the gall bladder may not lift up and dissection has to be done without the usual lift.

The neck of the gall bladder and CBD can be adherent. Careful dissection is required to separate the adhesions, to identify the cystic artery and the cystic duct. Usually the anatomy is distorted due to the inflammation. It's better to convert before any complication. Conversion is a safer option. If the thickness of gall bladder and difficult anatomy can be assessed preoperatively by imaging modalities it will be better decide open rather than conversion open cholecystectomy.

Risk factors like age above 60 years, history of previous upper abdominal surgeries, anaesthetic complications, comorbidities can be considered for open cholecystectomy from the start instead of conversion from laparoscopic approach. Usually open cholecystectomy was done in cases of elderly with severe comorbidities, severely ill patients with complicated gall bladder diseases. But considering the increased incidence of bile duct injuries in laparoscopic cholecystectomy in this era, instead of conversion, role of open cholecystectomy from the start with certain predictable risk factors has to be evaluated in a larger population.

### V. Conclusion:

Conversion is not a complication. Good imaging and accurate identification of the structures is the key.

Open cholecystectomy has a role in this era. Compared to doing conversion of laparoscopic cholecystectomy<sup>(7)</sup> into open cholecystectomy, it's far better to do open cholecystectomy from start. Risk factors like old age, previous upper abdominal surgery, complicated gall bladder disease and anaesthetic problems have to be evaluated to prove the role of open cholecystectomy in selected cases without any laparoscopic trials.

Thorough history and consideration of risk factors, role of radiological investigations like ultra sonogram and MRCP preoperatively and their clinical correlation in assessing these factors have to be studied

thoroughly to assess the feasibility of open cholecystectomy could be done for these patients without laparoscopic trial<sup>(8)</sup>. Further large scale studies may help in assessing these factors.

#### References:

- [1]. Bittner R. Laparoscopic surgery: 15 years after clinical introduction. *World J Surg.* 2006;30:1190–203. 10.1007/s00268-005-0644-2
- [2]. Ros A, Gustafsson L, Krook H, Nordgren CE, Thorell A, Wallin G, et al. Laparoscopic cholecystectomy versus mini-laparotomy cholecystectomy: a prospective, randomized, single blinded study. *Ann Surg.* 2001;234:741–9. 10.1097/00000658-200112000-00005
- [3]. Nathanson LK, Shimi S, Cuschieri A. Laparoscopic cholecystectomy: the Dundee technique. *Br J Surg.* 1991;78:155. 10.1002/bjs.1800780208
- [4]. Simopoulos C, Botaitis S, Polychronidis A, Tripsianis G, Karayiannakis AJ. Risk factors for conversion of laparoscopic cholecystectomy to open cholecystectomy. *Surg Endosc.* 2005;19:905–9. 10.1007/s00464-004-2197-0
- [5]. Ercan M, Bostanci EB, Ulas M, Ozer I, Ozogul Y, Seven C, et al. Effects of previous abdominal surgery incision type on complications and conversion rate in laparoscopic cholecystectomy. *Surg Laparosc Endosc Percutan Tech.* 2009;19:373–8. 10.1097/SLE.0b013e3181b92935
- [6]. Botaitis S, Polychronidis A, Pitiakoudis M, Perente S, Simopoulos C. Does gender affect laparoscopic cholecystectomy. *Surg Laparosc Endosc Percutan Tech.* 2008;18:157–61. 10.1097/SLE.0b013e318165c899
- [7]. Deziel DJ, Millikan KW, Economou SG, Doolas A, Ko ST, Airan MC. Complications of LC: a national survey of 4292 hospitals and an analysis of 77604 cases. *Am J Surg.* 1993;165:9–14. 10.1016/S0002-9610(05)80397-6
- [8]. Lee VS, Chari RS, Cucchiario G, Meyers WC. Complications of laparoscopic cholecystectomy. *Am J Surg.* 1993;165:527–532. 10.1016/S0002-9610(05)80955-9

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