



## COMPARISON OF INFECTION; REMOVAL OF GALL BLADDER WITH BAG AND WITHOUT BAG

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### INTRODUCTION

Laparoscopic cholecystectomy is gold standard for the removal of gall bladder in symptomatic gall bladder disease and is the commonest operation performed laparoscopically worldwide. Gallbladder perforation and spillage are the common complication encountered during dissection and removal of gallbladder, however there has been increasing report of infectious complications due to un-retrieved stones and spillage of bile, such complications mask not only the advantages of minimal access surgery and also increases the economic burden on the patient and hospital. There are number of factors contributing to the development of post operative wound infection attempts have been made to control these by number of methods, however there is wrong belief that the antibiotics are sole solution to all of these, resulting in the emergence if resistant micro-organisms.

This innovative study will focus on the cost effective technology and technique of specimen extraction. The purpose of this study was to compare post operative wound infection rate between removal of gallbladder by end glove and

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**ABSTRACT... Objectives:** To describe the incidence of wound infection when gall bladder removed through umbilical port using the bag formed by surgical glove with a group where bag is not used. **Study Design:** Descriptive study. **Setting:** Surgical units of Nishtar Hospital Multan. **Period:** Two years from November 2013 to November 2015. **Material and Method:** There were 100 patients in study. All patients were divided in two groups, in one group a bag formed by surgical glove is used in other group gall bladder removed without bag. **Results:** In first group where bag is used minor wound infection occurred in only one patient at the umbilical port site. In second group where bag is not used for the extraction of gall bladder, the minor wound infection occurred in three patients. **Conclusion:** The use of endoglove is beneficial in minimizing the port site infection & it is also economical.

**Key words:** Laparoscopic cholecystectomy, cholelithiasis, bagging, umbilicus.

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without endoglove. No doubt that the extraction of gall bladder in endoglove is beneficial when gallbladder is perforated leading to the spillage of bile and stones in the prevention of port site infection but in this study we compare the port site infection when gallbladder is not perforated, when extracted with endoglove and without endoglove.

During the operation of laparoscopic cholecystectomy, after the separation of gall bladder from the gall bladder fossa the extraction of gall bladder from the abdomen constitute an important step of operation.

### Following are the main points,

1. Choice of port site for the extraction of gall bladder either umbilical or epigastric, according to the surgeon's preference we used umbilical port for the extraction of gall bladder.
2. Avoidance of spillage of bile and stones during extraction.
3. Neck of the gall bladder should be clipped properly.

In half of the patients gall bladder removed in a bag prepared with the sterile surgical glove.

We followed the following protocol in perioperative period.

- Preoperative phase
  - a) Disinfection of the umbilical skin with pyodine iodine.
  - b) Use of prophylactic antibiotic injection (ceftriaxone sodium 1g) at the time of induction of anesthesia, then dose repeated after eight hours & then after sixteen hours.
- Intraoperative phase
  - a) Gall bladder extracted through the umbilicus in 50 patients with endoglove and in 50 without endoglove.
  - b) All patients underwent with suture of the umbilicus with No#1 vicryl after the extraction of gall bladder.
- Postoperative phase
 

The evaluated parameter were the following

  - a) Umbilical pain (pain scale from 0 to 3) (nil, mild, moderate, severe).
  - b) Signs of inflammation of the umbilical wound (rubor, color, tumor).
  - c) Purulent leakage through the umbilical wound.
  - d) Dehiscence of skin suture.

(a and b represents the minor wound infection)  
(c and d represents the major wound infection)

All the above parameters are noted in the first postoperative week.

### PATIENTS AND METHODS

All the patients in this study belong to age group between twenty to sixty years with no gender difference. Patients with symptomatic cholelithiasis are included.

Patients with empyema gall bladder, diabetics, uremic, jaundiced, immunocompromised and where gall bladder perforated during extraction without bag, are excluded.

The bag used for the extraction of the gall bladder was prepared from sterile surgical glove as shown in figure 1 to 4.

1. Sterile surgical glove.
2. Cutting of the glove into two halves.

3. Closing the lower end of the upper segment of the glove with No 1 silk.
4. Prepared bag for extraction of gall bladder.



Figure 1.



Figure 2.



Figure 3.



Figure 4.

**DISCUSSION**

Omphalitis is a minor post operative complication after laparoscopic cholecystectomy.



The extraction of the gall bladder with surgical glove bag through the umbilicus.

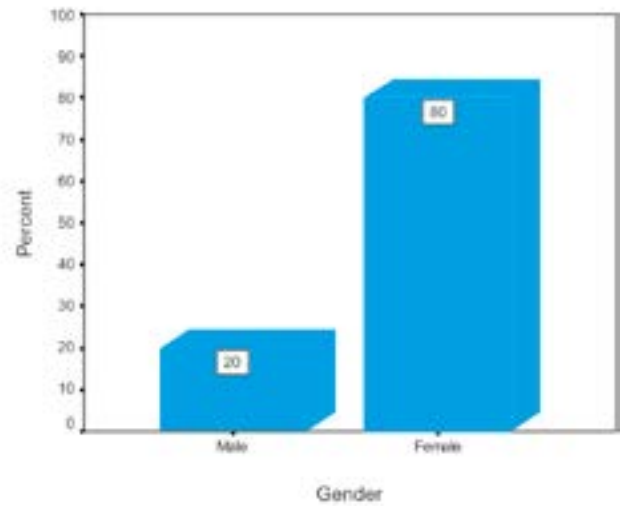


Figure-5. Graphical representation of gender

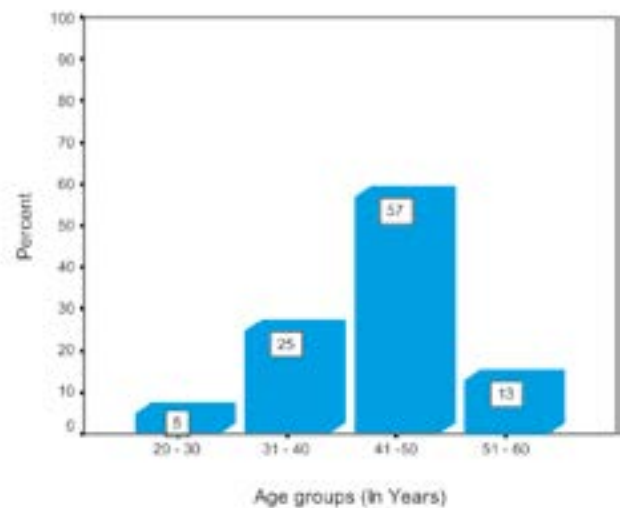


Figure-6. Age wise distribution of study cases.

Gall Bladder Extraction	No. of Patients	Minor Wound Infection	Major Wound Infection	Percentage
With Bag	50	1	---	2%
Without Bag	50	3	---	6%

**Table-I. Distribution of wound infection among study cases in both groups.**

it is treated quite simply as an outpatient problem but omphalitis represents discomfort for the patient, it can cause a delay in the resumption of work but above all omphalitis is a risk factor for the development of trocar site incisional hernia (TSIH).

Vincenzo Neri et al<sup>1</sup> used rifamycin for topical use to decrease the port site infection.

Hamzaoglu et al<sup>2</sup> discussed the umbilical flora and makes it responsible for the wound infection after laparoscopic surgery.

Colizza S et al<sup>3</sup> compare the use of ceftriaxone vs Ceftizadine antibiotic prophylaxis.

Harling R et al<sup>4</sup> compared in 76 patients a randomized study in prophylaxis of wound infection using antibiotic vs bag extraction, there was total of six wound infections (7.9%), three in each of study group according to him prophylactic antibiotics may not be required in uncomplicated laparoscopic cholecystectomy.

The commercially available endobag which is used to extract gall bladder is not frequently available in Multan more over it is expensive so we used the sterile surgical glove after shaping it into the simulating extracting bag referred to figure 1 to 4 which is economical & useful. According to previous studies certain situations lead to higher risk of gall bladder perforation during laparoscopic cholecystectomy than open cholecystectomy this usually occurs when gall bladder is manipulated by laparoscopic instruments or when it is dissected from the liver bed. The conventional method (without bag) for the removal of gall bladder is associated with a little higher incidence of wound infection as reflected in the study as compared to the use of the endoglove which reduces the risk of perforation of gall bladder during its

extraction and thus prevents the contamination with bacteria, bile and gall stones, but where gall bladder extracted without perforation and leakage in uncomplicated cholelithiasis, the drag of inflamed organ results in increased port site infection so the use of endoglove reduces the incidence of port site infection.

## CONCLUSION

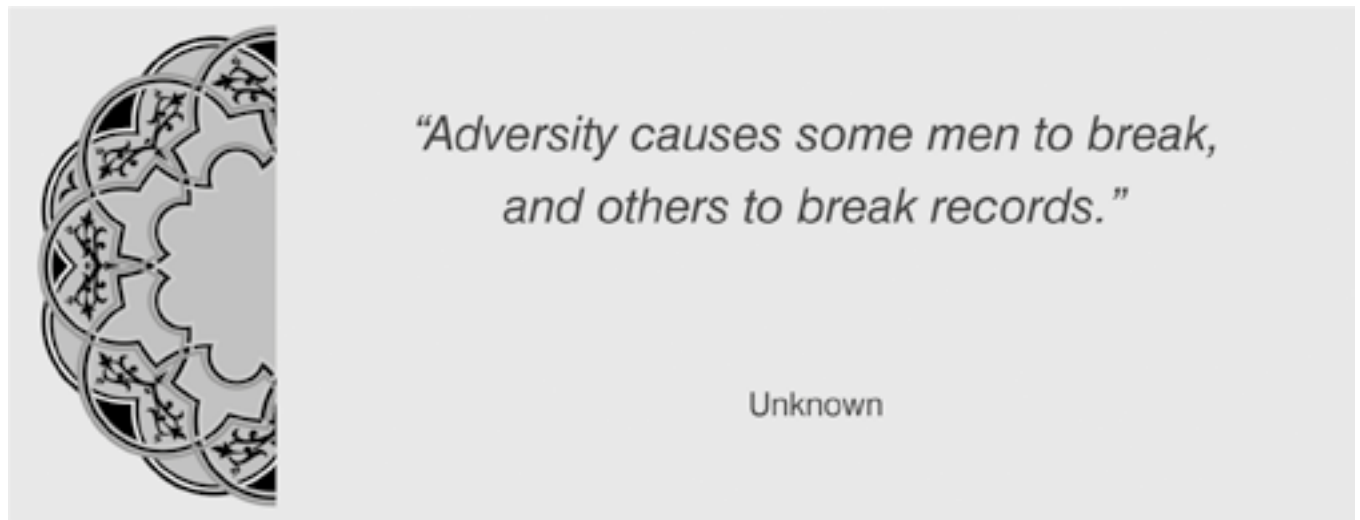
The use of endoglove for the extraction of the gall bladder is economical and useful in minimizing the port site infection even when gallbladder is not perforated. Commercially available endobag costs around Rs. 1100 to 1200 while cost of endoglove prepared by sterile surgical glove is Rs. 60 only which is a major difference with regards to our poor population.

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**AUTHORSHIP AND CONTRIBUTION DECLARATION**

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2	Dr. Allah Bakhsh Parhar	Study planning, Designing, data entry, data analysis, manuscript writing and editing.	
3	Dr. Zafar Iqbal Malik	Data collection, manuscript writing and editing	
4	Dr. Khalid Hussain Qureshi	Study designing, Planning, Supervision and manuscript writing.	