

## A SAFE AND INEXPENSIVE TECHNIQUE OF RETRIEVAL OF GALLBLADDER SPECIMEN AFTER LAPAROSCOPY

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<b>Article Info</b> <i>Received 25/03/2015</i> <i>Revised 30/03/2015</i> <i>Accepted 14/04/2015</i>  <b>Key words:</b> Laprosopic cholecystectomy, Endobag, Gall bladder specimen retrieval.	<b>ABSTRACT</b> Usage of the endobag is an essential component of laparoscopic surgery. The purpose of this study was to evaluate the feasibility and surgical outcome of a policy of routine specimen retrieval through the umbilical port, avoiding the enlargement of ancillary port-site incisions. We describe an easy-to-apply method of endobag insertion.
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### INTRODUCTION

Laparoscopic cholecystectomy (LC) has been the gold standard treatment in the management of symptomatic cholelithiasis for over 15 years. 1 Gall bladder perforation and spillage are the common complications encountered during dissection and removal of gall bladder (25%) 2, 3. However there has been increasing report of infectious complications due to un-retrieved stones and spillage of bile. Economical sterile surgical gloves or sterile endobag can be used instead of expensive commercial endobags to retrieve the gallbladder specimen and also intra abdominal spilled stones safely without complications. Evaluate the safety and cost effectiveness of sterile surgical glove endobag technique for retrieval of gallbladder specimen after laparoscopic cholecystectomy.4 gallbladder specimen is retrieved in an endobag (specimen pouch) usually through umbilical port. Distended gallbladder packed with stones always creates a problem during its retrieval from the abdomen. Gallbladder removal in these cases required a needle decompression, stone fragmentation and stone removal from the gallbladder near the port site or enlargement of the one of the fascial incision to facilitate

gallbladder retrieval, which causes more postoperative port site pain 5. We evaluate safety and cost effectiveness of technique of using sterile endobag to retrieve gallbladder along with any anticipated complications.

### MATERIALS AND METHODS

Three hundred patients with symptomatic uncomplicated cholelithiasis admitted in the Department of Surgery, Gayatri Surgical Hospital, patan, were included in the study. Children, cirrhotic patients having cholelithiasis and gall bladder carcinoma were excluded from this study. Patients after baseline investigations and anesthesia fitness underwent the conventional laparoscopic cholecystectomy with four port technique. In all these patients gall bladder is retrieved through umbilical port through a sterile endobag. A tense and distended gall bladder with full of stones were decompressed prior to removal inside endobag without enlargement of the fascial opening. The whole procedure was done under direct vision.

### Technique



Technique to make sterile endobag from Ab Gel Pack.

- Open the Ab Gel. (Fig 1)
- Cut one edge of plastic bag
- Removed Ab Gel from plastic bag (Fig 2)
- Trim the plastic bag for use as endobag (Fig 3)
- Kept longer edge on trolley and shorter edge toward the sky and start rolling the endobag from close edge.

At the completion of the laparoscopic cholecystectomy an endobag is inserted inside the peritoneal cavity through 10mm umbilical port using grasper under direct vision. Endobag was kept on the superior surface of the liver or on the omentum in acute cases. Gall stones which are spilled inside peritoneum due to perforation of the gallbladder also kept inside the endobag. The endobag mouth is opened (the longer edge of endobag on liver surface & shorter edge on peritoneum surface) and gallbladder specimen is pushed inside and its mouth is closed with grasper from mid clavicular port. Later gallbladder specimen is engaged inside the umbilical port under direct vision by rail road technique. The grasper of mid clavicular port and telescope at umbilical port were kept in straight line to achieve the alignment. By holding

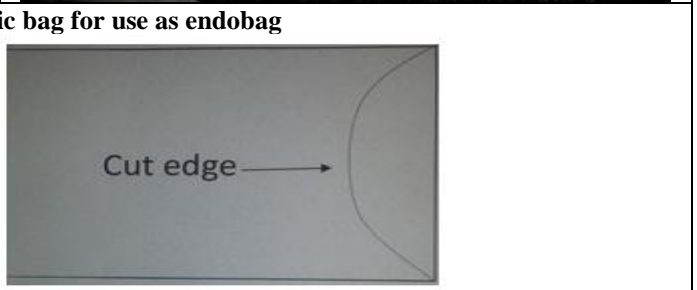
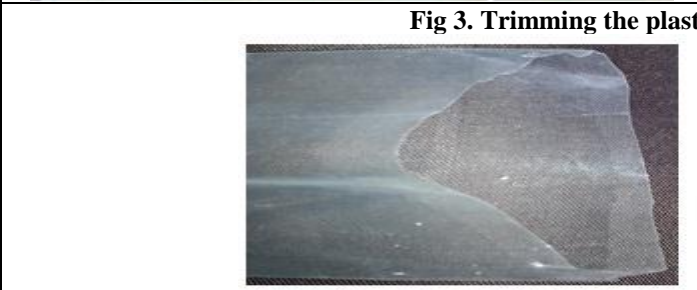
the endobag with gallbladder further accommodated inside the umbilical port and telescope slowly withdrawn and gas was evacuated. Same procedure was performed for oedematous, inflamed gallbladder and gallbladder with full of stones.

### RESULTS

Dissected gall bladder in all three hundred cases (213 (71%) females and 87 (29%) male), were retrieved safely through the 10mm umbilical port in endobag. In 45 (15%) cases gallbladder was acutely inflamed, which were opened safely at the umbilical port site inside the endobag and decompressed before retrieval. Perforation of gallbladder during dissection with spilling of stones with safe retrieval into endobag is observed in 30 (10%) patients. No complications were observed during this technique; however only 3 (3%) patients had umbilical port site wound contamination. Handling of the endobag was easy and simple during its insertion and retrieval. Perforation or leaking of the endobag is neither observed in our study, nor slipping of the gallbladder specimen or stones from the endobag.

**Table 1. Complications (Endobag Technique) (n = 300)**

S. No	Complications	Number of Patients	Percentage %
1	Endobag difficult Insertion	00	00
2.	Intra abdominal difficult handling	00	00
3.	Difficult spilled stones retrieval	00	00
4.	Difficult acutely inflamed gallbladder specimen retrieval	00	00
5.	Leakage and perforation of endobag	00	00
6.	Umbilical port site contamination	3	3



## DISCUSSION

LC is preferred over open technique because of less postoperative pain, short hospital stay, early return to work and better cosmetic results. However, gallbladder perforation (10-40%) and stone spillage (6-30%) are the most frequently encountered complications during LC.1-4 It has certain limitations for the clearance of all spilled stones when compared with the open procedure 6. A spilled or implanted gallstone and spillage of infected bile in the peritoneal cavity is a common event during laparoscopic cholecystectomy without using endobag. Infected bile and gall stone implantation in the subcutaneous tissues of the abdominal wall causing discharging sinus or abscess at the port site of retrieval is a rare entity 7, 8, 9. In our study we retrieve the gallbladder specimen safely through 10mm umbilical port using endobag. Gallbladder perforation and stone spillage are seen in 30 (10%) patients who were safely retrieved in endobag and is the most frequent laparoscopic complication seen in our study which comes across during gallbladder dissection. However, a reported incidence of gallstone spillage varies from 6 to 30 per cent 10, 11, 12. Ali SA et al 13 stated that best way to avoid complication of spilled gallstones and umbilical port site contamination is to use endobag. V. Golash in his series of 772 patients of conventional laparoscopies, retrieved the gallbladder specimen through the umbilical port without using endobag, hence reported a high incidence of port site contamination & gall stone spillage 14. We have not

observed perforation or leakage of the endobag during its use for retrieval of gallbladder specimen or slipping out of gallbladder specimen from the endobag during its retrieval. Fortunately only 3% of our patients develop umbilical ports sepsis in patients with acutely inflamed gallbladder specimen despite of using endobag, possibly due to contamination of the outer surface of endobag. Endobag facilitates collection of operative specimen, spilled stones and minimizes the chances of contamination of the abdominal cavity 15, 16, 17. Original disposable endobags prices range from 14-15 US \$ 224 (endosac (Zenith medical) US \$ 14, port site (Dexdelac) US \$ 14) 18, as majority of our patients belongs to low socio economic status we cannot afford such a high cost.

We have use sterile endobag from Ab Gel. when we use Ab Gel, we store the plastic bag. They are sterilized by Gama Ray technique and use as endobag. Product which we are use it is from waste product of Ab Gel but we make it to best endobag. It is economical for our poor patients.

## CONCLUSION

We conclude that the endobag is simple, economical and safe technique for retrieval of gallbladder specimen and spilled stones with fewer chances of complications. We strongly suggest use of Endobag for the patients of 3rd world countries.

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