Original Article

Laparoscopic Cholecystectomy in Elderly; An Experience in A Tertiary Care Hospital

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Abstract

Introduction

Laparoscopic cholecystectomy (LC) is the treatment of choice for symptomatic Cholelithiasis. Surgery for cholelithiasis is more common in elderly patients as the incidence of gallstones increases with age. The use of laparoscopic cholecystectomy (LC) in elderly patients may pose problems because of their poor general condition, especially of cardiopulmonary function.

Methods

The study was conducted on elderly patients undergoing laparoscopy cholecystectomy in Government Medical College Jammu. Patients for study were taken from those admitted for surgery.

Results

The study concluded that Laparoscopic cholecystectomy can be performed safely in elderly population. However, anatomy at the Calot's triangle is one of the main important factors that influences the adverse outcome of Laparoscopic Cholecystectomy.

Conclusion

The study found that the perioperative outcomes, intraoperative and post-operative complications, operating time, rate of conversion to open cholecystectomy and the length of hospital stay are not influenced by the age of the patient.

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Keywords

Cholelithiasis, gallstones, laparoscopy cholecystectomy

Introduction

Laparoscopic cholecystectomy (LC) is the treatment of choice for symptomatic cholelithiasis. Surgery for cholelithiasis is more common in elderly patients as the incidence of gallstones increases with age. The use of laparoscopic cholecystectomy (LC) in elderly patients may pose problems because of their poor general condition, especially of cardiopulmonary function. Gallstone disease is common and costly, creating over 7,00,000 cholecystectomies annually. Age is one of the critical factors affecting the mortality and morbidity rates after open cholecystectomy. The elderly population is gradually increasing due to an increase in the quality of life and therefore the frequency of gallbladder stones in the population is also increasing. The use of a laparoscopic approach in aging patients may pose problems because the comorbid conditions that are concomitant with advance age may increase the postoperative LC complications and the frequency of conversion to open surgery.

Aims and objectives

- To study the safety of laparoscopic cholecystectomy in elderly patients aged 60 years and above.
- To study the outcome of laparoscopic cholecystectomy in elderly patients aged 60 years and above.
- To suggest the preliminary guide lines depending upon the outcome of the study.

Written well informed consent was taken. Detailed history of all the patients was taken. Clinical examination, laboratory investigations, USG Abdomen and further radiological imaging as and when required were done.

Sample selection:

The study was conducted on elderly patients undergoing laparoscopy cholecystectomy in Government Medical College Jammu. Patients for study were taken from those admitted for surgery.

Inclusion criteria:

- Elderly patient (having age 60 years or more).
- Patient having symptomatic gall stones.
- Patients fit for general anaesthesia.
- Any patient willing to undergo surgery in asymptomatic gall stones.

Exclusion criteria:

- Patients with choledocholithiasis.
- Patients suffering from acute pancreatitis.
- Patients of Carcinoma Gall Bladder.
- Patients not fit for general anaesthesia.
- Patients not willing for Laparoscopy Cholecystectomy.

Surgical technique:

Four Port Laparoscopy Cholecystectomy: Performed with standard four port technique under following standard steps of operations:

1. Creation of pneumoperitoneum and insertion of all trocars.
2. Separation of all adhesion to the gall bladder and the surrounding lever with exposure of the peritoneal fold in which the cystic duct and artery are situated.
3. Dissection and skeletonization of the cystic duct and cystic artery and occlusion and division of these structures.
4. Excision and extraction of the gall bladder and closure of incisions.

Materials required:

1. **Laparoscopic equipment and instruments:**

i. Telescope (10mm, 30°).
ii. High flow carbon dioxide insufflators (automatic)
iii. Carbon dioxide cylinder with connecting source.
iv. Endoscopic video 3-chip camera system.
v. High resolution medical grade colour monitor.
vi. Halogen/Xenon light source.
vii. Electric diathermy (monopolar/ bipolar)
viii. Suction apparatus.

2. **Instruments:**

Basic instrument consists of following:

i. Verres Needle.
ii. Trocars (10mm and 5mm)
iii. Dissecting forceps – straight, Maryland, right angled.
iv. Reduction tube (10mm and 5mm)
v. Scissors-hook, curved, micro dissecting.
vi. Grasping forceps – 2(Atraumatic).
vii. Spatula electro dissector.
viii. Hook electro dissector.
ix. Clip applicator (medium, large).
x. Claw forceps (10mm)
xi. Gall stone retriever (spoon forceps, finger gloves)
xii. Clips (medium, large: titanium)
xiii. Aspirator.
xiv. Needle holder.
xv. Normal saline
xvi. Tube drains (No. 28F/30F/32F)
xvii. Suture material: silk 2-0, 3-0, polyglactin (port closure)
xviii. Skin stapler with staples.

Sterilization

- Laparoscopic instruments and telescope in 2% Glutaraldehyde for 20 minutes (for disinfection) and 6-7 hours (for sterilization).
- Camera along with leads in sterilized camera covers (cloth/disposable).
- Connecting tubes, cautery leads & optic fibre cable un formalin chamber for 10-156 minutes.

Data recorded for the subjects included all the demographic details, detailed clinical examination, intraoperative finding, duration of the surgical intervention, conversion rates for laparoscopic to open cholecystectomy, intraoperative complications (including bile leak, intraoperative bleeding, associated gut injury), post-operative complications (including post-operative paralytic ileus, postoperative pancreatitis and wound infections), length of hospital stay and postoperative follow-up.

Results

This prospective study "Laparoscopic cholecystectomy in elderly; an experience in a tertiary care hospital" was aimed at studying the safety and outcome of laparoscopic cholecystectomy in elderly (60 years and above), was conducted over a period of one year and included 50 patients.

The study was based on perioperative outcome, rate of conversion to open cholecystectomy, operative time, intraoperative and post-operative complications and the length of hospital stay.

The study concluded that Laparoscopic cholecystectomy can be performed safely in elderly population. However, anatomy at the Calot's triangle is one of the main important factors that influences the adverse outcome of Laparoscopic Cholecystectomy. The anatomy at Calot's triangle is distorted in elderly due to repeated attacks of cholecystitis leading to adhesions.

The study found that the perioperative outcomes, intraoperative and post-operative complications, operating time, rate of conversion to open cholecystectomy and the length of hospital stay are not influenced by the age of the patient.

Therefore, Laparoscopic Cholecystectomy should be promoted and encouraged for the elderly age group with cholelithiasis fit for the administration of General Anaesthesia.

It is primarily the disease process itself and the anatomy at the Calot's triangle and not the age of the patient that affects the perioperative outcomes, rate of conversion to open cholecystectomy, operating time, length of hospital stay and the intraoperative and the postoperative complications.

Table 1: SHOWING AGE DISTRIBUTION OF THE CASES.

AGE GROUP (IN YEARS)	TOTAL NUMBER OF PATIENTS	MALES	FEMALES	% OF TOTAL
60-65	36	12	24	**72%**
66-70	9	7	2	18%
71-75	4	2	2	8%
76-80	1	0	1	2%

Table 2: SHOWING THE SEX DISTRIBUTION OF THE CASES.

	COUNTS	% OF TOTAL
FEMALES	29	58%
MALES	21	42%

Table 3: SHOWING THE MONTH WISE DISTRIBUTION OF THE CASES.

MONTH	COUNTS	% OF TOTAL
2019-11	8	16%
2019-12	14	28%
2020-01	12	24%
2020-02	11	22%
2020-03	5	10%

Table 4: SHOWING THE DIAGNOSIS OF THE PATIENTS.

DIAGNOSIS	COUNTS	% OF TOTAL
CHOLELITHIASIS	47	94%
GB POLYP	3	6%

Table 5: SHOWING THE ASSOCIATED COMORBIDITIES OF THE PATIENTS.

COMORBIDITIES	COUNTS	% OF TOTAL
HCV Positive	1	2%
HTN	14	28%
HTN, Hypothyroid	3	6%
HTN, IHD	1	2%
HTN, T2DM	3	6%
Hypothyroidism	1	2%
Hypothroidism, HbSAg Positive	1	2%
IHD, T2DM	1	2%
T2DM	3	6%
T2DM, COPD	1	2%
NIL	21	42%

Table 6: SHOWING THE OPERATIVE PROCEDURE PERFORMED.

PROCEDURE	COUNTS	% OF TOTAL
Laparoscopic Cholecystectomy	44	88%
Laparoscopic Converted to Open Cholecystectomy	6	12%

Table 7: SHOWING THE OPERATIVE TIME TAKEN DURING THE OPERATIVE PROCEDURES

	OPERATIVE TIME (IN MINUTES)
MEAN	55.9
MINIMUM	25
MAXIMUM	125

Table 8: SHOWING THE OPERATING TIME SPLIT BY OPERATIVE PROCEDURES.

PROCEDURE	OPERATIVE TIME (IN MINUTES)
Mean time for laparoscopic cholecystectomy	49.7
Mean time for laparoscopic converted to open cholecystectomy	102
Minimum time for laparoscopic cholecystectomy	25
Minimum time for laparoscopic converted to open cholecystectomy	65
Maximum time for laparoscopic cholecystectomy	90
Maximum time for laparoscopic converted to open cholecystectomy	125

Table 9: SHOWING THE STATUS OF CALOT'S TRIANGLE.

STATUS OF CALOT'S TRIANGLE	COUNTS	% OF TOTAL
Clear	41	82%
Distorted	8	16%
Cholecysto-Transversecolonic Fistula	1	2%

Table 10: SHOWING FREQUENCY OF DRAIN PLACEMENT.

DRAIN PLACEMENT	COUNTS	% OF TOTAL
YES	8	16%
NO	42	84%

Table 11: SHOWING INTRAOPERATIVE COMPLICATIONS.

COMPLICATION	COUNTS	% OF TOTAL
Bile Spillage	2	4%
Bile Duct Injury	Nil	Nil
Duodenal Injury	Nil	Nil
Sinus Bleed	1	2%

Table 12: SHOWING POSTOPERATIVE COMPLICATIONS.

POSTOPERATIVE COMPLICATION	COUNTS	% OF TOTAL
Post Op Bile Leak	2	4%
Post Op Pancreatitis	NIL	NIL
Post Op Ileus	3	6%
Post Op Wound Infection	2	4%

Table 13: SHOWING HOSPITAL STAY (IN DAYS).

	HOSPITAL STAY (IN DAYS)
Mean	2.72
Range	1-23
Minimum	1
Maximum	23

Futher Reading

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