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Laparoscopic Cholecystectomy in a New Way

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Abstract: ***Aim: To describe laparoscopic cholecystectomy in a new way. Methods: It is a case series of 40 laparoscopic cholecystectomies which was done between October 2021 to March 2022. Inclusion criteria: Patients having cholelithiasis, acute cholecystitis. Exclusion criteria: previous abdominal scar (midline), pregnant women, children, obese patient. Procedure: After antibiotic and tetanus prophylaxis and proper hydration, under spinal anaesthesia and after proper antiseptic painting and draping, in Trendelenburg position direct trocar entry in umbilicus was done, pneumoperitoneum was created and then in reverse Trendelenburg position and left lateral tilt, other three ports were made. Fundal traction given and adhesiolysis done, lateral traction at Hartmann's was given and calot'sdissection done. Cystic duct and artery were clipped and then cut. A ligature was also used in some cases. Gall bladder was dissected out from gall bladder fossa. Haemostasis secured. Gall bladder removed from epigastric port. Drain was placed in some cases. Umbilical port and Epigastric port were closed in single layer by Nylon 2-0 and other ports was closed. Aseptic dressing was done. Results: There was less operative time and the cases were uneventful and the patients were well postoperatively and discharged on day 1 of operation and there were no cases of port site hernia on follow up. Conclusion: Using this newer way there was less operative time, as well as less induction time of anaesthesia, with less post operative pain and negligible complications, thus an effective way for laparoscopic cholecystectomy.***

Keywords: Laparoscopic cholecystectomy, spinal anaesthesia, direct trocar entry, single layer closure

1. Introduction

At this time, laparoscopic cholecystectomy is indicated for the treatment of cholecystitis (acute/chronic), symptomatic cholelithiasis, acalculous cholecystitis, gallstone pancreatitis, and gallbladder masses/polyps. The incidence of gallstones increases with an increase in age, with females more likely to form gallstones than males. Incidence of gall stone disease is more in north eastern parts of India. Minimal invasive procedure that has benefits of early recovery, early mobilization, less postoperative pain, less scar, more compliant. Readily done nowadays and is treatment of choice for cholelithiasis

Aim:
To describe laparoscopic cholecystectomy in a new way or modified way

2. Material and Method

It is a case series of 40 laparoscopic cholecystectomies done between October 2021 to March 2022 in JLNMCH Bhagalpur

Inclusion criteria: Patients having cholelithiasis, acute cholecystitis (within 7 days), age group 25-50 years

Exclusion criteria: previous abdominal scar (midline), pregnant women, children, obese patient

Patient preparation
CBC, RBS, LFT, KFT, USG-W/A, BT-CT, PT-INR, CXR-PA, ECG,
Preanesthetic check-up
NPO for 6-8 hrs
Proper hydration
Antibiotic prophylaxis
Tetanus prophylaxis
Informed consent
Part preparation

3. Procedure

Spinal anaesthesia was given in sitting position after proper aseptic precautions [1] [2]

After proper antiseptic painting and draping patient was put in Trendelenburg position umbilical incision (12mm) was given with the lifting of abdomen, direct trocar entry through incision was done [3] [4] and pneumoperitoneum was created with CO2 pressure of 10-12 mmhg [1] [2]

Position was changed to reverse Trendelenburg position and left lateral tilt, other three ports (epigastric port (10mm), midclavicular port (5mm) and rt anterior axillary port (5mm)) were made under vision.

Fundal traction given and adhesiolysis done, lateral traction at Hartmann's was given and calot's dissection done using traction and counter traction and small currents of cautery up to Strasberg critical view of safety is made. Cystic duct and artery were clipped and then cut. A ligature was also used in some cases where calot's dissection was not achieved completely.

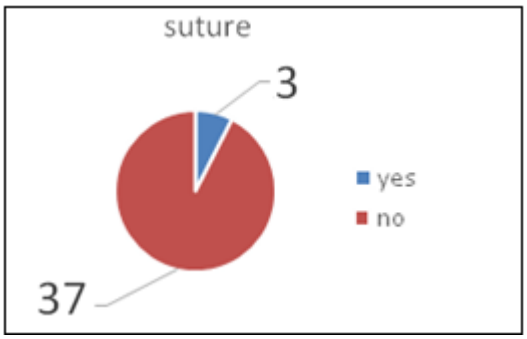
Gall bladder was dissected out from gall bladder fossa using cautery and proper traction. Haemostasis was secured by cautery and pressure. Gall bladder removed from epigastric port, artery forceps were used to dilate the port. Drain was placed in some cases.

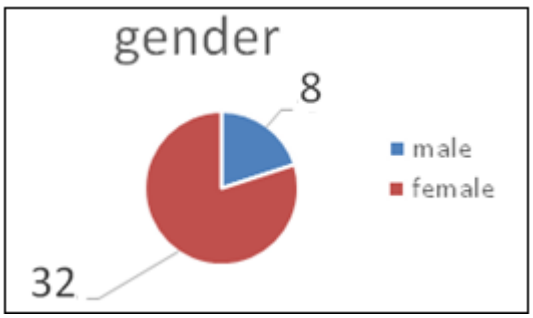
Any pain during anaesthesia was managed by mild sedation.

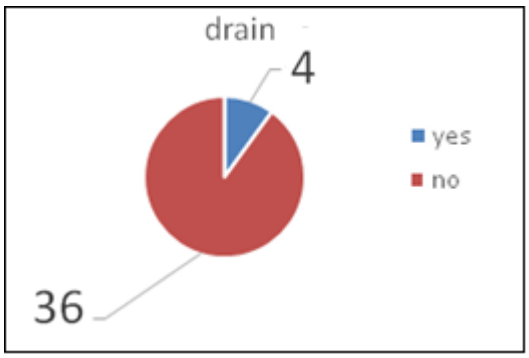
After holding the fascia by allis Epigastric port and Umbilical port were closed in single layer [5] [6] with the skin by Nylon2-0 and then other ports were closed. Aseptic dressing was done.

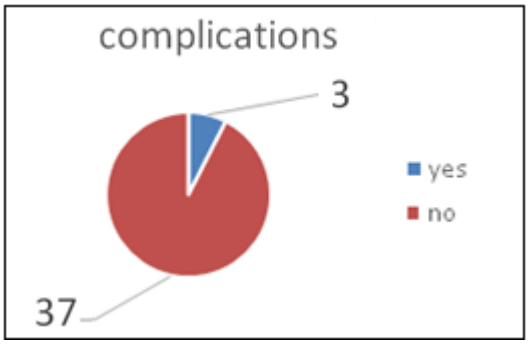
Patients were discharged on postoperative day 1, and stitches were removed on 10th day and were followed up for 1 month for any complications

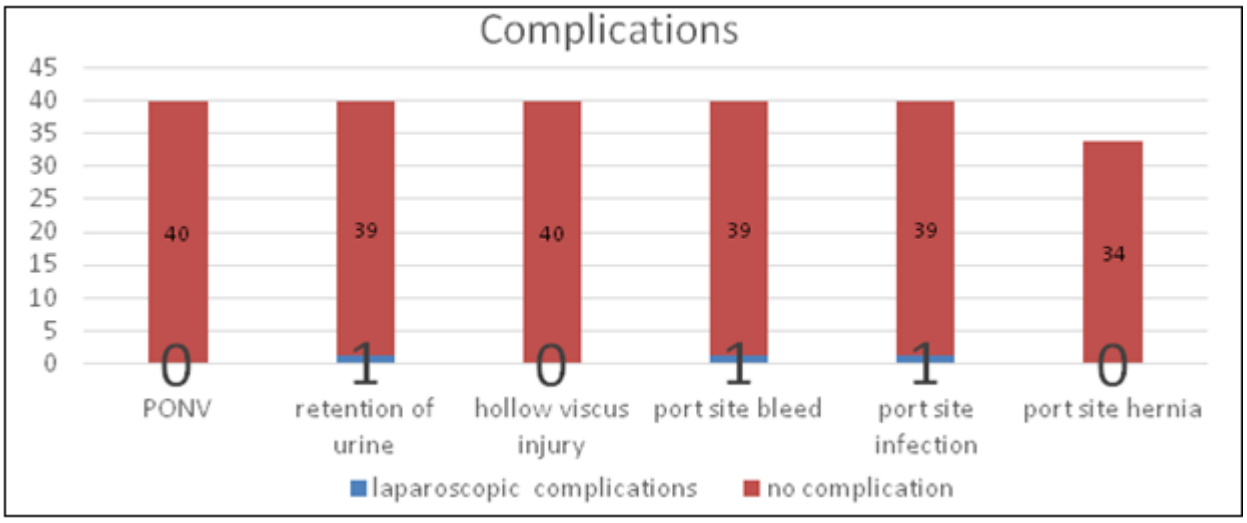
4. Results











Case series of 40 laparoscopic cholecystectomies were studied, 32 females and 8 males

Less operative time (average 40-45 min)

The cases were uneventful with no hollow viscus injury

In one case there was epigastric port bleeding which was managed by pressure by allis forceps on the trocar

In 3 cases suture was used around cystic duct

In 4 cases drain were placed which was removed next day

In 1 case there was retention of urine and headache that was managed by foleys catheterisation and headache was managed conservatively, there were no cases of PONV

The patients were well postoperatively and discharged on day 1 of operation

There was 1 case of port site infection which was treated on antibiotics and regular dressing

There were no cases of port site hernia on follow up of 1 month, 34 people were followed up and 6 people did not came for follow up.

5. Discussion

Laparoscopic cholecystectomy is considered as the treatment of choice for gallstone disease.

With the advantages of having early postoperative recovery and discharge it sometimes may have complications as port site bleeding, infection, hernia

Incidence of the complications is considered to be around 21 per 100, 000 cases that is very less [9]

LC is conventionally done under general anaesthesia (GA) and may be associated with postoperative pain and nausea and vomiting (PONV) [8]

SA has several advantages over GA. These advantages include the patients' being awake and oriented at the end of the procedure, less postoperative pain, and the ability to ambulate earlier than patients receiving general anesthesia. [8]

Spinal anesthesia provided evidence that can be an effective technique for laparoscopic elective, urgent and even morbid obesity, since it uses low pressure CO_2 pneumoperitoneum may be an alternative to general anesthesia. [2]

Spinal anesthesia decreases bleeding in the operated area due to induced hypotension, bradycardia, and decreased venous return. [2]

Direct trocar insertion (DTI) although still a blind technique reduces the number of "blind steps" from 3 with Veress needle (insertion, insufflation, and trocar introduction) to just one, that of trocar introduction.

The method of directly inserting the first trocar for laparoscopy without establishing pneumoperitoneum was first described by Dingfelder more than 32 years ago [7]

Trendelenburg position, abdomen lift and direction of trocar towards pelvis during port entry decreases the probability of injury to hollow viscus. Trocar entry after creation of pneumoperitoneum via veress needle may cause injury to the viscera due to sudden insertion in the abdomen and having disadvantage of unable to hold abdominal wall in pneumoperitoneum. Currently, none of the available methods of entry into the peritoneal cavity for creation of pneumoperitoneum is free of complications.

Port closure is one of the most pertinent steps of a minimal access surgery and closure has to be achieved in all the ports which are 10 mm or greater

Fascial closure is the most important step in the port closure to avoid port site hernia.

In this modified technique the fascia is held by allis forceps before suturing to ensure the fascial closure thus decreasing the incidence of port site hernia

This also saves time as well as operation can be completed in limited instruments

6. Conclusion

Using this newer way there was less operative time, as well as less induction time of anaesthesia, with less post operative pain and negligible complications and early recovery

Also reduces the use of suture material and is cost effective as the procedure is completed in limited instruments. Thus an effective way for laparoscopic cholecystectomy.

References

[1] Sinha R, Gurwara AK, Gupta SC. Laparoscopic cholecystectomy under spinal anesthesia: a study of 3492 patients. J Laparoendosc Adv Surg Tech A. 2009 Jun; 19 (3): 323-7. doi: 10.1089/lap.2008.0393. PMID: 19522659.

[2] Imbelloni LE (2014) Spinal Anesthesia for Laparoscopic Cholecystectomy. Glob J Anesthesiol 1 (1): 001-008. DOI: 10.17352/2455-3476.000001

[3] Theodoropoulou, K et al. "Direct trocar insertion technique: an alternative for creation of pneumoperitoneum." *JSLS: Journal of the Society of Laparoendoscopic Surgeons* vol. 12, 2 (2008): 156-8.

[4] Ulusoy, Serap & Ozer, Mehmet & Kılınç, İbrahim & Parlak, Omer. (2019). Direct trocar entry for laparoscopy safety and efficiency.

[5] Botea, Florin et al. "A simple, effective technique for port-site closure after laparoscopy." *JSLS: Journal of the Society of Laparoendoscopic Surgeons* vol. 15, 1 (2011): 77-80. doi: 10.4293/108680811X13022985131778

[6] Tavassoli, Alireza & Bagheri, Reza & Feizzadeh, Behzad & Tavassoli, Fatemeh & Barekati, Neusha. (2012). Fascial Repair of Laparoscopic Ports with Allis-Hemostat Technique. Indian Journal of Surgery. 77. 10.1007/s12262-012-0784-1.

[7] Agresta F, Mazzarolo G, Bedin N. Direct trocar insertion for laparoscopy. *JSLS*. 2012; 16 (2): 255-259. doi: 10.4293/108680812x13427982376383

[8] Yu G, Wen Q, Qiu L, Bo L, Yu J. Laparoscopic cholecystectomy under spinal anaesthesia vs. general anaesthesia: a meta-analysis of randomized controlled trials. BMC Anesthesiol. 2015 Dec 3; 15: 176. doi: 10.1186/s12871-015-0158-x. PMID: 26634822; PMCID: PMC4668641.

[9] Aziz R. *Practical Manual of operative Laparoscopy*. New York: Springer-Verlag; 1992. pp. 1-8. [Google Scholar]