International Journal of Current Advanced Research
ISSN: O: 2319-6475, ISSN: P: 2319-6505, Impact Factor: 6.614
Available Online at www.journalijcar.org
Volume 11; Issue 07 (A); July 2022; Page No.1179-1180
DOI: http://dx.doi.org/10.24327/ijcar.2022.1180.0263

Research Article

OPEN CHOLECYSTECTOMY (MUSCLE- SPLITTING) UNDER SPINAL ANAESTHESIA: COST EFFECTIVE EQUITABLE OPTION IN LAPAROSCOPY ERA

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A R T I C L E I N F O

Article History:

Received 10th April, 2022
Received in revised form 2nd May, 2022
Accepted 26th June, 2022
Published online 28th July, 2022

Keywords:

Open cholecystectomy (muscle-splitting), cholelithiasis, spinal anaesthesia

A B S T R A C T

Aims and objectives: This study aims to analyze feasibility and outcome of open cholecystectomy (muscle-splitting) under spinal anaesthesia, which can be performed with less demand on resources.
Methods: Set up: A Secondary care hospital-based study in the Civil Hospital, Arki, Solan (H.P)
Study Period: One-year w.e.f.1st June 2021 to 30th May 2022
Setting: This study was done in the Civil Hospital, Arki, Solan (H.P)w.e.f.1stJune 2021 to 30th May 2022 on90 patients admitted for open cholecystectomy for symptomatic cholelithiasis.
Study Design: Observational study
Complicated cholelithiasis (biliary pancreatitis, jaundice, cholangitis) was excluded.
Patients and families were counselled for open cholecystectomy (muscle-splitting) under spinal anaesthesia.
Results: OUT OF 90 cases completed under spinal anaesthesia, Intra – op complications (Hypotension, Spo2 fall) were seen in 12 patients. post -op complications were seen in (PONV, Spinal headache, Urine retention) were seen in 15 patients, mean duration of surgery was 35 minutes , Mild post-operative pain was reported by 40 patients at six hours and 38 patients at 12 hours, The mean hospital stay was 2 days, Wound complications occurred in 7 patients. Overall, 73 patients were satisfied and would recommend the procedure. There was no bile-duct injury, re-surgery, or mortality.
Conclusion: Open cholecystectomy (Muscle- splitting) under spinal anaesthesias is safe and effective with early feeding, short hospital stay, less demand for resources, and good patient satisfaction.

INTRODUCTION

Symptomatic Cholelithiasis is a common disease with incidence of 10-25%. [1]Laparoscopic cholecystectomy is the "Gold Standard" for the treatment of symptomatic gallstone disease. It has the advantages of less post operative pain, better cosmetic results, shorter hospital stay and early return to work and is cost effective.[2]

Though laparoscopic cholecystectomy is considered a safe procedure, but is costly to be installed in secondary institute hence open cholecystectomy (muscle-splitting) may be used as an alternative and quest for an efficient and effective clinical approach at a reduced cost is desirable for all, be it a resource-rich or poor country. Health service providers need to consider the social context, the demand for resources, sustainability in pursuit of technology.3

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Spinal anesthesia ias safe and effective option which does not compromise pulmonary function and peri-operative events due to neuroendocrine stress encountered in general anaesthesia.[4]

METHODS

A prospective observational study was undertaken in the Civil Hospital, Arki, Solan (H.P).

- It included 90 patients undergoing open cholecystectomy (muscle-splitting) under spinal anaesthesia.
- Complicated cholelithiasis (biliary pancreatitis, jaundice, cholangitis) was excluded.
- Patients and families were counselled for cholecystectomy (muscle-splitting) under spinal anaesthesia.
- During the surgery the intra operative & post operative parameters related to spinal anaesthesia were reported

such as: fall in Blood Pressure (hypotension) sp02 fall, post operative nausea &vomiting,(PONV), spinal headache and urine retention .

- Duration of surgery, any bile duct injury and use of drain were noted in cases.
- Patients were encouraged to move their legs once they had sensation, sit on the bed, and get out of bed gradually assisted by nurses or family.
- Patient perception of pain was recorded at 6 hours and 12 hours (or 9 am the next day before discharge). Pain was graded as mild (pain on coughing), moderate (on sitting up or walking), and severe (pain while lying in bed).
- Patient's satisfaction was recorded on a Likert scale (3-satisfied will recommend 2- satisfied with reservation for recommendation; 1-undecided).
- Patients were discharged usually on day 1-2and followed up for wound sepsis.
- The outcome of anaesthesia, events during and after surgery, length of hospital stay, patient satisfaction, and wound complication were descriptively analyzed for frequency and percentage using Microsoft Excel.

RESULTS

- Data was collected, analyzed and following inference was drawn:

Parameters	FINDINGS	NO.
Intra – op (spinal anaesthesia)	Hypotension	3
	Spo2 fall	9
Post op (spinal anaesthesia)	PONV	7
	Spinal headache	5
	Urine retention	3
Surgery related	Duration of surgery (mean)	35(min)
	Bile- duct injury	0
	Use of drain	8
	Wound Sepsis	7
Pain score at 6 hours	1-Mild pain	40
	2-Moderate, pain on getting out of bed	32
	3-Severe, pain on lying	18
Pain score at 24 hours	1-Mild pain	38
	2-Moderate, pain on getting out of bed	39
	3-Severe, pain on lying	13
Patient's satisfaction	3- satisfied will recommend	73
	2- satisfied reservation to recommend	12
	1-undecided	5
Duration of stay 9 days)	1	16
	2	71
	3	3

DISCUSSION

Open-cholecystectomy (muscle-splitting) under spinal anaesthesia was safe with no bile duct injury or mortality. Similar to Laparoscopic cholecystectomy , it has the benefits and outcome characterized by a short hospital stay, less pain, satisfactory wound healing and good patient satisfaction with advantage of less demand on resources and cost is obvious.

All countries, rich or poor strive to develop ways to meet the needs of the people. New technology requires resources, training, and maintenance of equipment. The globalisation and aggressive marketing of technology without consideration to sustainable and equitable delivery of surgical services are a burden and considered neocolonialism.[3]

After the introduction of laparoscopy during the 80s and successful first laparoscopic cholecystectomy in Germany in 1985, LC has overtaken open surgery for cholelithiasis as a technological revolution even though smaller incision open cholecystectomy, introduced in early 1982 had shown successful outcome with a shorter convalescence. Open cholecystectomies have stayed and are performed in most parts of world for less cost, the need of equipment, and training.[5]

Patient expectations affect the overall outcome and help decrease hospital stay. Counseling, including the elements of the surgical care pathway with a detailed explanation to patients and family about the incision, reduced pain and better wound healing, early oral feeding, and less hospital stay were helpful for patient satisfaction[6].It can very well be performed as day surgery as the average hospital stays in our series was 1.88 days and overnight stay was due to rurality with poor transport, and access to health facilities.

Mastery of Open cholecystectomy (muscle-splitting) is a practical and beneficial for the general surgeon as index surgical skill training, also useful when adapted by surgeons experienced in open cholecystectomy. It is a feasible and safe alternative with wider applicability at reduced cost and resources, a viable addition to the Laparoscopic Choleystectomy for both low and high-income countries.

CONCLUSION

Open-cholecystectomy (muscle-splitting) under spinal anaesthesia is a safe and effective surgical technique for the treatment of cholelithiasis. It achieves a shorter hospital stay similar to daycare surgery and most of the patients were satisfied and would recommend the procedure.

We thank Mr. Gian Thakur (O.T.A), Mr. Kishori for assistant during surgery. We are thankful to nurses for their hard work and for helping in OT and wards.

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