

Experience with 0.5% Bupivacaine Pro-Peritoneal Bleb. after Laparoscopic Cholecystectomy—A New Trend in Analgesia

S A KHAN* K BUTT** Z A CHAUDHRY* S MUSHTAQ A**

*Department of Surgery, K. E. Medical College/Mayo Hospital, Lahore

**Department of Anaesthesia, K. E. Medical College/Mayo Hospital, Lahore

Correspondence to Dr. Sadaqat Ali Khan, Associate Professor Surgery

This experience was gained in 300 patients under going laparoscopic cholecystectomy over a period of 3 years at Akram Medical Complex including 15 male 285 female of ASA Status 1 and 2. Weight ranging from 55kg to 120kg, age ranging from 35-60 years. The Bupivacaine 0.5% 10cc was showered at gallbladder fossa and 2.5ml to 3cc was infiltrated at all four ports raising properitoneal bleb under direct camera vision at the end of surgery. This method of relieving postoperative pain after laparoscopic cholecystectomy was simple, very much effective and free from side effect.

Key word: Lapchole, Bupivacaine 0.5%

The laparoscopy has been in practice for more than eighty years. The recent advances in optic, light transmission and video-imaging has made further progress in laparoscopic surgery (Chui 1993).

The laparoscopic cholecystectomy has gained popularity among patients and public during last decade because it abolishes the trauma of access as well as the transient ileus that follows after open abdominal surgery. The patient is virtually free of postoperative pain and can be discharged from hospital within 24 hours to resume full activity and employment on following day.

After initial investment of equipment, subsequent laparoscopic cholecystectomy is certainly cost-effective as compared to open cholecystectomy. Also, due to high cost of large number and various types of sutures disposable and postoperative medication in consistent with prolonged hospital stay and better cosmetic results, laparoscopic cholecystectomy has gained better choice among patient (Alfred Cuschieri).

There are different methods of relieving postoperative pain in laparoscopic cholecystectomy. Parenteral administration of narcotic and non-narcotic agents which also includes NSAIDs. Either in injection form or rectal suppository before the start of operation. And by local anaesthetic administration.

Methods and Material

Laparoscopic cholecystectomy is commonest procedure. Carried out by General Surgeon and is widely accepted with fewer complications. It has been further made comfortable by different analgesic modalities.

In this articles, authors described analgesic technique used by himself at the end of operation by creating properitoneal bleb with 18G needle using 0.5% Bupivacaine Visualizing the formation of bleb under endoscopic view for postoperative analgesia in 300 cases performed from 1997 to 1999 at Akram Medical Complex, Lahore including 15 male and 285 female age ranging from 35 to 55 years ASA/II.

Preoperative assessment was done by anaesthesiologist day before surgery in outpatient clinic. Patient was admitted on the day of surgery and brought to operation theatre with intravenous line already established established. Monitoring was applied consisting of ECG, Pulse Oximetry and blood pressure monitoring. Dormicum 2mg and Nalbuphine 4mg were given as premedication and general anaesthesia was induced with propofol and maintained with non-depolarizing muscle relaxant Tracrium, nitrous oxide, oxygen and isoflurane. Airway way was maintained using ETTc except in few cases where laryngeal mask was used.

The procedure was carried out using standard technique of carbon dioxide insufflation through verres needle. 10mm umbilical and epigastric ports were used for telescope and L-hook dissection. Two 5mm lateral ports on right side were used for fundus and neck grasper. Not a single patient needed use of Fan-retractor. After visualizing porta hepatis and duodenum, omentum was pushed downward and calot's" triangle dissection was carried out from lateral side. After double clipping of cystic duct and vessel, gallbladder was dissected out.

Before retrieval of gallbladder, 0.5% Bupivacaine 10cc was showered over the gallbladder fossa through a separate skin puncture. 2.5ml to 3.0ml, 0.5% Bupivacaine was infiltrated around each port raising properitoneal bleb under direct vision.

The Diclofenac sodium 1mg/kg bodyweight was given i/m at the end of Surgery. After complete recovery patient was shifted to high dependency unit. for postoperative care.

Results

M=15, Weight range=55kg-120kg, Age range=35-60 years, F=285

To assess the pain intensity we used verbal analogue scale. There was no case of shoulder pain in our experience and no case of local anaesthetic toxicity. Only 10% cases needed Nalbuphine 4mg -6mg postoperatively in high

dependency unit which was given 2mg bolus with interval of 2-3 hours. All the other remain pain free and comfortable. They did not ask for analgesics.

After 6 hour patient was allowed to take oral fluids.. and put on oral NSAIDSs. In our group of patients we used tablet Tylol 2 tds for 24 hours.

Discussion

The traditional use of opiates for pain control is not ideal. The side effects such as nausea, vomiting, respiratory depression, itching, urinary retention and varying degree of CNS sedation or depression limit their usefulness.

Usually selection of technique of pain relief depends upon the intensity of pain, site of surgery, anticipated duration of severe pain, physical status of patients and nursing staff.

With over dosage of local anaesthetic, systemic toxicity, prolonged motor, sensory or sympathetic blockade may be seen. Neural blockade may also cause urinary retention, venous stasis or hypotension etc.

The intrapleural blockade involves insertion of an epidural type catheter into the intrapleural space through 16G tuohy needle at 8th intercostal space. The catheter is advanced 5-6cm into the pleural space usually 0.5%, 30-40ml Bupivacaine is required for pain relief. The analgesia lasts for 8-36 hours after single infection.

The intrapleural catheter placement is associated with asymptomatic pneumothorax. The installation of local anaesthetic into the intrapleural space to control pain after open cholecystectomy was enthusiastically described by Reistal and Stromsbeg in 1986.

The most of pain receptors are present in the skin and parietal peritoneum. The properitoneal local anaesthetic deposition is very much effective for postoperative laparoscopic cholecystectomy pain relief. It is simple method, deposition done under direct vision without any difficulty and free from side effects. In our experience there is no single case of shoulder pain due to irritation of diaphragm by residual CO₂. In every patient, we showered gallbladder fossa with 0.5% Bupivacaine. There was also no case of local anaesthetic toxicity. Some surgeons infiltrate the port with local anaesthetic in the beginning of surgery. They infiltrate with local anaesthetic with adrenaline. Their aim is to reduce bleeding from ports site along with intraoperative analgesia. But we infiltrated local anaesthetic at the end of surgery for postoperative pain relief because intraoperative analgesia was provided by nitrous and narcotic administered in the beginning of surgery.

In contrast to open cholecystectomy, the wound of laparoscopic cholecystectomy is small in size and consist of four parts but wound of gall bladder fossa is of same

size as after open cholecystectomy. Residual CO₂ gas and small amount of fluid in hepatorenal pouch present may irritate the diaphragm and cause shoulder tip pain.

The conventional intramuscular narcotics administered when required may have unpredictable effects regarding pain relief. While intravenous administration of narcotics in full dose are very effective in relieving pain but may cause airway obstruction due to tongue fall and respiratory depression in addition to high incidence of nausea and vomiting.

The NSAID like Diclofenac Na relieves pain of mild to moderate intensity in addition to their effects like gastritis, renal papillary necrosis and decrease in platelets adhesiveness if used for more than 48 hours.

The local anaesthetic technique provide postoperative analgesia and reduce pain to level that can be controlled by oral analgesic and free from above mentioned side effects.

The Murphy and Engbug used intercostal nerve block to treat post-cholecystectomy pain. The quality of analgesia was excellent and pulmonary mechanics were improved after nerve block. But repeated injections are uncomfortable for patients and time-consuming for anaesthetist.

Opiods analgesics continue to be main stay of treatment despite the risk of respiratory depression and diversity of side effects.

Our conclusion is that showering of gallbladder fossa with Bupivacaine and raising properitoneal bleb at all ports under direct vision is simple, easy, effective in relieving pain and free from side effects.

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