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Shoulder pain after thoracotomy and video thoracoscopy, An approaching to this complication: pilot study in La Princesa Hospital

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crodiscectomy was analysed. The anaesthetists in theatre recorded the pre-operative analgesic requirements and the intra-operative analgesic regimes used. Pain levels were assessed using a numerical rating scale on arrival and departure from the PACU and on the ward at 6-8 hours post-operatively. At this time patients were also asked would they be content to go home at their current level of pain and PONV. They were also asked to give their opinion and views on factors affecting same day discharge.

Results and Discussion: 100% received paracetamol, 28% had LA infiltrated by the surgical team intra-operatively. 78% received either paracetamol or diclofenac, 93% received morphine intra-operatively. 88% received morphine in PACU, Multimodal Analgesia - 98%. 100% patients had pain scores recorded in recovery. 100% patients had no more than moderate pain before leaving PACU. 55% received analgesia on the ward when reviewed at 6-8 hours. Incidence of significant PONV is 35%. Currently only 47% of patients would be content to be discharged on the day of surgery.

Conclusion(s): Balanced or multimodal analgesia combining intra-operative opiates, paracetamol, local anaesthesia and NSAIDs leads to lower pain scores and a lower incidence of PONV. All patients should have their pain assessed and treated so their pain scores are mild to moderate before leaving the postoperative care unit. Post-operatively on the ward all patients should take analgesics pre-emptively and regularly, starting before the effect of the peri-operative analgesics have worn off.

References:

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14AP5-1

Post-operative pain relief following laparoscopic abdominal surgery: General anesthesia versus combination with regional anesthesia using intrathecal Morphine and Fentanyl

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Background and Goal of Study: Laparoscopic surgery may be associated with severe postoperative pain. The aims of our current study were to assess the effect of combined general and intrathecal (IT) morphine + fentanyl on postoperative pain score, analgesia requirements and patients' satisfaction following laparoscopic procedures.

Materials and Methods: This is a prospective randomized controlled study. After IRB approval Thirty three adult patients underwent laparoscopic procedures were randomly assigned to receive intraoperative IV fentanyl [group 1, N= 16] or IV remifentanyl+ IT morphine (0.3-0.6 mg) and fentanyl (15 mcg) [Group 2, N=17]. Intravenous morphine Patient Control Analgesia (PCA) was given to all patients for pain control during the recovery period. Postoperative pain scores were evaluated in post anesthesia care unit (PACU) every 30 minutes and at post operative day (POD) 1 and 2. Pain scores were assessed at rest and while coughing using visual analog scale (VAS) 0-10 scale. PCA requirements, additional analgesic medications, hemodynamic parameters, oxygen saturation, side effects and patient satisfaction were recorded as well.

Results and Discussion: Both groups were well matched with regard to demographic data and hemodynamic parameters. Total I.V postoperative morphine requirements were significantly lower in the group 2 compared to group 1 in the PACU (8.0 vs. 13.7), POD1 (7.86 vs. 31.18) and POD2 (4.55 vs. 20.2) mgs ($p = 0.044, 0.003, 0.011$ respectively). Postoperative VAS's were significantly lower in group 2 both at rest and while coughing in the PACU, POD1 and POD 2. Patients in group 1 demanded significantly higher additional analgesics beside morphine: 84.6% compared to 15.4% in group 2 ($P < 0.001$). Patients' satisfaction was significantly higher in group 2 (scale 1-10): 9.91 vs. 6.54 in group 1 ($P < 0.0001$). No significant side effects were noted in both groups.

Conclusion(s): Our findings demonstrated that intrathecal morphine and fentanyl combined with general anesthesia significantly reduces pain score and analgesia requirements in the postoperative period following laparoscopic surgery. Higher patient satisfaction in the Intrathecal group was significant as well.

This practice should be further evaluated and considered in selected laparoscopic surgery.

14AP5-2

Trans-abdominal plane (TAP) block analgesia for day-case laparoscopic gynaecological procedures: A prospective study

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Introduction: The Transversus Abdominis Plane (TAP) block is a regional

anaesthetic technique which has been utilised as an analgesic adjunct for a number of surgical procedures. We prospectively evaluated the efficacy of this technique in day-case laparoscopic gynaecological procedures: diagnostic laparoscopy, laparoscopic sterilisation, laparoscopic treatment of endometriosis & laparoscopic removal of an ovarian cyst.

We selected ASA 1 & ASA 2 patients for our study.

Methods: A consecutive cohort of 50 patients undergoing day-case laparoscopic gynaecological procedures had a bilateral TAP block under ultrasonographic guidance administered by a single anaesthetist following induction of anaesthesia. Post-operative pain scores were prospectively quantified in the recovery bay by nursing staff using a visual analogue scoring (VAS) system (range of 0-10). Patients were then phoned on Day 1 and Day 3 post-surgery and asked to quantify their pain using a visual analogue score (0-10). These scores and clinical outcomes were compared with a contemporaneous control cohort of 50 patients who underwent laparoscopic gynaecological procedures without TAP block.

Results: There were no adverse events associated with the insertion of TAP block. Patients who underwent TAP block had significantly lower pain score in recovery (0.25 ± 0.07 vs. 0.94 ± 0.21 ; $p = 0.01$) and on day 1 (2.8 ± 0.2 vs. 5.8 ± 0.3 ; $p = 0.0002$) as compared with the control group. However by day 3 post surgery, the patients pain scores were not significantly different in either group (2.1 ± 0.2 vs. 2.9 ± 0.3 ; $p = 0.16$).

Mean morphine consumption per 24 hours on the TAP group was statistically-significant (6.21 ± 1.1 vs. 21.56 ± 2.3 ; $p = 0.01$) as compared with the control group.

Mean hospital stay overnight on the TAP group was as well significantly lower (3.41 ± 0.71 vs. 32.51 ± 5.1 ; $p = 0.001$) as compared with the control group.

Conclusion: The TAP block is a safe and effective technique which provides superior short-term analgesia for patients undergoing day-case laparoscopic gynaecological procedures.

It helps as well to cut hospital costs & reduce the risk of nosocomial infections due to shorter stay in the hospital wards.

14AP5-3

Shoulder pain after thoracotomy and videothoracoscopy: An approaching to this complication: Pilot study in La Princesa Hospital

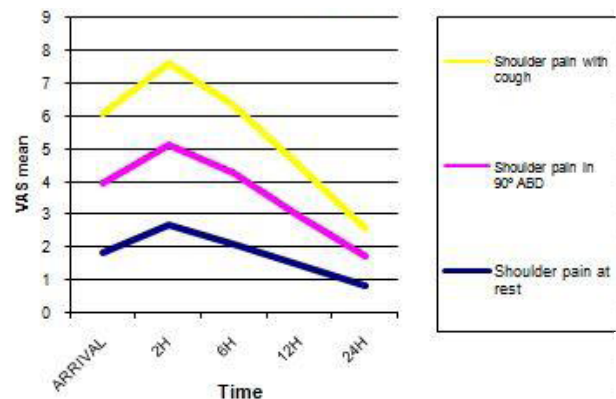
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Background and Goal of Study: The 21-97% of patients undergoing thoracic surgery suffers ipsilateral shoulder pain in the postoperative¹. The objective is to determinate the incidence and characteristics of this pain in the first 24 hours after thoracotomy and videothoracoscopy (VATS).

Materials and Methods: Pilot epidemiology descriptive study. 20 patients undergoing thoracic surgery by thoracotomy or VATS were consecutively selected between April and May 2010. Anaesthesia technique followed a protocol. Inclusion criteria: informed consent agreement. Exclusion criteria: Previous ipsilateral shoulder pain, drug abuse, analogic visual scale (VAS) correctly understanding. Measures: Pain at ipsilateral shoulder pain was evaluated by VAS at wake up, 2, 6, 12 and 24 hours at rest, 90° shoulder abduction and cough. Rhythm, intensity and localization were registered at wake up, 12 and 24 hours. Statistical analysis was made using SPSS® v15.0.

Results and Discussion: Patients with ipsilateral shoulder pain at rest at wake up were 45% (VAS mean 2.1; 2.09-2.14 $CI_{95\%}$) and 30% (VAS mean 0.8; 0.63-0.97 $CI_{95\%}$) at 24 h. Mean VAS shoulder pain at rest, shoulder abduction 90° and cough are in graph 1.



[Mean Shoulder VAS according to time]

Rhythm, intensity and localization are at table 1.

Data are shown as number of patients and frequency

| | Rhythm | | Intensity | | | Localization | | | |
|----------|--------------|--------------|--------------|--------------|--------------|--------------|----------------------|-----------------------|--------------------------------|
| | Constant | Intermittent | Continuous | Changeable | Shoulder | Scapula | Shoulder and Scapula | Shoulder and Clavicle | Shoulder, scapula and Clavicle |
| Wake up | 6 (66.7%) | 3 (33.3%) | 3 (33.3%) | 6 (66.7%) | 2 (22.2%) | 3 (33.3%) | 1 (11.1%) | 1 (11.1%) | 2 (22.2%) |
| 12 hours | 4 (50%) | 4 (50%) | 2 (25%) | 6 (75%) | 2 (25%) | 1 (12.5%) | 2 (25%) | 1 (12.5%) | 2 (25%) |
| 24 hours | 5 (83.3%) | 1 (16.7%) | 1 (16.7%) | 5 (83.3%) | 1 (16.7%) | 1 (16.7%) | 1 (16.7%) | 1 (16.7%) | 2 (33.3%) |

[Shoulder pain characteristics]

Although the pain frequency is high the intensity is low. Shoulder pain increase is bigger at cough than at 90° abduction. The size of the population sample limits our results.

Conclusion(s): Ipsilateral shoulder pain is a frequent complication in the thoracic surgery; it is not very intense and is related to movement and cough according to our results.

References:

1. Bamgbade OA, Dorje P, Adhikary GS. *J Clin Anesth* 2007; 19:296-298.

14AP5-5

The combination of infiltrative bupivacaine with low pressure laparoscopy reduces postcholecystectomy pain

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Background and Goal of Study: Postoperative pain remains one of the major problems faced in postoperative period of laparoscopic cholecystectomy (LC). Several studies have reported different pain management strategies, but no previous study has specifically described the efficacy of low pressure pneumoperitoneum combined with local anesthetic infiltration.

This paper aims to describe the efficacy of infiltrative bupivacaine combined with low intraperitoneal pressure insufflation in reducing the postlaparoscopic pain in patients undergoing LC.

Materials and Methods: The study was performed at the Department of Surgery and the Service of Anesthesiology & Intensive Care of the UHC Mother Theresa in Tirana, Albania during the period 2006-2009. 473 ASA 1 and 2 patients scheduled to undergo general anesthesia for LC were included. The patients were divided in four groups: the first group with intraabdominal insufflation pressure 10-12 mmHg and no infiltrative bupivacaine (HPNBG), the second group with intraabdominal insufflation pressure 10-12 mmHg and with 5 ml infiltrative bupivacaine 0.5 % in abdominal minincisions (HPBG), the third group with intraabdominal insufflation pressure under 10 mmHg and no infiltrative bupivacaine (LPNBG) and finally the fourth one with intraabdominal insufflation pressure under 10-12 mmHg and 5 ml infiltrative bupivacaine 0.5 % (LPBG). After conventional induction, the CO2 insufflation and laparoscopic procedure started. Infiltration with 5 ml Bupivacaine 0.5 % (Astra-Zeneca) in each miniincision site was performed at the end of surgery.

Results and Discussion:

| Parameters | Intraabdominal pressure 10-12 | | Intraabdominal pressure under 10 mmHg | |
|-------------------------------|-------------------------------|------------------|---------------------------------------|------------------|
| | No bupivacaine | With bupivacaine | No bupivacaine | With bupivacaine |
| Patients number | 120 patients | 122 patients | 110 patients | 121 patients |
| Incisional pain VAS (1-10/10) | 7.2 ± 1.8/10 | 5.5 ± 1.2/10 | 6.9 ± 2.1/10 | 4.8 ± 1.3/10 |
| Shoulder-tip pain VAS (1-10) | 7.4 ± 2/10 | 6.9 ± 1.4/10 | 5.7 ± 1.6/10 | 4.5 ± 1.5/10 |
| Pain beginning time (h) | 2.3 ± 0.6 h | 2.9 ± 1.1 h | 3.2 ± 0.9 h | 4.7 ± 0.5 h |
| Daily morphine consume (mg) | 13 ± 1.5 mg | 10 ± 2 mg | 9.5 ± 1.5 mg | 7.5 ± 0.5 mg |

[Data recorded in four groups]

Conclusion(s): We recommend the combination of low pressure pneumoperitoneum and local infiltration, in order to longer the beginning time, and to reduce the intensity of the pain, as well as to decrease the morphine consumption during LC procedures.

References:

Barczycki M, Herman RM. A prospective randomized trial on comparison of low-pressure (LP) and standard-pressure (SP) pneumoperitoneum for laparoscopic cholecystectomy. *Surgical Endoscopy* Volume 17, Number 4, 2003, pg. 533-538, DOI: 10.1007/s00464-002-9121-2

14AP5-6

The effect of the transverse abdominis plane block after laparoscopic cholecystectomy

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Background and Goal of Study: The transverse abdominis plane (TAP) block is a novel approach for blocking the abdominal wall neural afferents via the bilateral lumbar triangles of Petit. This prospective, randomized, and double-blinded study was designed to describe the landmark TAP block not only to evaluate the intra- and postoperative analgesic efficacy in patients undergoing laparoscopic cholecystectomy but also to eradicate curare under general anesthesia.

Materials and Methods: Forty patients undergoing laparoscopic cholecystectomy were randomized to receive standard general anesthetic either with (Group A, n=20) or without TAP block (Group B, n=20). Inclusion criteria were: age superior to 20 years and ASA physical status 1 or 2. Patients were excluded if there was a history of relevant local anesthetics allergy, or if they had coagulation disorder or there was infection at the needle insertion site.

All patients received, before surgical incision, a bilateral TAP block which was performed using 20 ml (50mg bupivacaine isobar 0.25% + 0.5µg/kg clonidine) or 20ml saline on each side. Visual analogic scales were recorded during 24 hours after surgery. Postoperative complications, including nausea, vomiting, urinary retention, sleep disturbance, respiratory depression were also checked

Results and Discussion: There were no differences between demographic characteristics and duration of the intervention. The TAP block significantly reduced the intraoperative use of rémifentanyl (402.5+/-93.8 Vs 607.5+/-40.6, P< 0.001). Pain score early after the operation, the ratio of patient who used analgesic drug, and the frequency of its use are all decreased by performing the block. The use of curare was reduced between the two groups ($\chi^2 = 26.6$; P< 0.001). Concerning the postoperative complications, the TAP block reduced only the risk of nausea and vomiting ($\chi^2 = 10.98$; P< 0.001).

Conclusion(s): The TAP block can be utilized as a useful analgesic method during and after the operation after laparoscopic cholecystectomy. Also, it reduces the use of curare.

14AP5-7

Crucial role of multimodale analgesia for laparoscopic cholecystectomy

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Background and Goal of Study: Intraperitoneal administration of local anesthetic in combination with an opioid, for the relief of postoperative pain, has already been reported after laparoscopic cholecystectomy. This study was aimed at assessing the analgesic effect of the intraperitoneal administration of bupivacaine and morphine, in patients undergoing laparoscopic cholecystectomy.

Materials and Methods: A prospective, randomized, double blind study was undertaken with written informed consent which was obtained from all patients. The study group consisted of 90 patients scheduled to undergo elective laparoscopic cholecystectomy for cholelithiasis under general anaesthesia. At the end of laparoscopic cholecystectomy, one of the following injections was given intraperitoneally: Group 1 (n=30) received physiological sodium chloride 30 ml, intraperitoneally. Group 2 (n=30) bupivacaine 0,25% 30 ml intraperitoneally. Group 3, (n=30) bupivacaine 0,25% 30 ml, intraperitoneally plus morphine 2mg. Patients postoperative pain was evaluated using a visual analogue scale and a verbal rating score. The postoperative analgesic requirement was assessed by the total dose of ketokonazol, administered by an i.v or i.m. route. Pain, vital signs, supplemental analgesis consumption and side-effects were recorded for all patients for 24h.

Results and Discussion: There were no significant differences between the three groups in relation to pain scores during the study except in the first 6h, in which pain was significantly lower (p< 0.05) in those patients receiving