



(CASE REPORT)



Anesthesia in the elderly with colon cancer and postoperative outcome

Maria I Dalamagka *

Department of Anesthesia, General Hospital of Larisa, Greece.

GSC Advanced Research and Reviews, 2022, 11(01), 176-179

Publication history: Received on 12 March 2022; revised on 19 April 2022; accepted on 21 April 2022

Article DOI: <https://doi.org/10.30574/gscarr.2022.11.1.0113>

Abstract

Colorectal surgery is commonly performed for colorectal cancer but morbidity and mortality remain high and vary among surgical centers. Two elderly patients with Colorectal Cancer and a history of Chronic Obstructive Pulmonary Disease underwent epidural anesthesia plus general anesthesia for colectomy surgery. In addition, Bridium was used as an inhibitor of muscle relaxation to better awaken them. The aim of the study was to evaluate the postoperative outcome of elderly patients with colorectal cancer and session disease Chronic Obstructive Pulmonary Disease, when they undergo anesthesia to perform a major surgery such as colectomy. The combination of epidural and general anesthesia showed encouraging results in the postoperative outcome of these patients and Bridium's effect on winning was significant.

Keywords: Anesthesia; Cancer; COPD; Elderly; Surgery

1. Introduction

Colorectal surgery for cancer, diverticular, or inflammatory diseases is a high-risk surgery. Other indications for CR surgery include ischemic colitis, iatrogenic perforation or injury, and volvulus. Perioperative factors affecting colon blood flow and oxygenation, suppression of stress response, optimal fluid therapy, and multimodal pain management are essential for the successful anesthetic management and a favorable perioperative outcome. The goals of perioperative anesthetic management for surgical patients are minimizing stress and immune responses, maintaining systemic and colonic blood flow and oxygenation, meticulous fluid and electrolyte therapy, multimodal analgesia, and prevention of postoperative gut dysfunction. Chronic obstructive pulmonary disease (COPD) is a common disease in elderly patients. Although most COPD patients tolerate tracheal intubation under "smooth" anesthetic induction without serious adverse effects, regional anesthetic blockade and application of laryngeal masks or non-invasive positive pressure ventilation should be considered whenever possible, in order to provide optimal pain control and to prevent upper airway injuries as well as lung baro-volutrauma. Minimally-invasive procedures and modern multimodal analgesic regimen are helpful to minimize the surgical stress response, to speed up the physiological recovery process and to shorten the hospital stay. Reflex-induced bronchoconstriction and hyperdynamic inflation during mechanical ventilation could be prevented by using bronchodilating volatile anesthetics and adjusting the ventilatory settings with long expiration times. Intraoperatively, the depth of anesthesia, the circulatory volume and neuromuscular blockade should be assessed with modern physiological monitoring tools to titrate the administration of anesthetic agents, fluids and myorelaxant drugs [1-26].

* Corresponding author: Maria I Dalamagka
Department of Anesthesia, General Hospital of Larisa, Greece.

2. Case Study

Two patients aged 82 and 86 years, respectively, with a body weight of 70 kg and 75 kg, underwent colectomy with surgical etiology of colon cancer and concomitant chronic obstructive pulmonary disease with a relatively good response to bronchodilation. In both patients, an epidural catheter was placed at the lumbar level 2 - lumbar 3, with a test dose of 3 ml Lidocaine 2%, under continuous monitoring with NBP, ECG, SpO₂. Introduction to anesthesia was performed with 1 mg Dormicum, Fentanyl 0.1 mg, Propofol 150 mg and Esmeron 80 mg and ligated after inhalation into Drager respirators using the Volume Control ventilation model (Tidal Volume: 420 ml, Frequency: 16, PEEP: 5). After vital signs were checked, 5 ml Naropain 0.75% was given through the epidural catheter. Maintenance of anesthesia was done with Sevoflurane 2.5% and O₂ / Air: 50/50%. After the start of the operation the patients were hydrated by slow infusion of 1L Plasmalite and epidurally given 10 ml Naropaine 0.375% plus 2 mg Morphine. The duration of the surgery was about two hours. Two hours after the start of the surgery, a Baxter continuous infusion pump, with an infusion rate of 5 ml / h, Naropaine 2%, was connected to the epidural catheter. The epidural infusion pump was maintained postoperatively.

After the completion of the surgery, the Sevoflurane faucet was closed and an O₂ / N₂O: 50/50% mixture was placed with a Pressure Control ventilation model. When the minimal alveolar concentration of Sevofluran dropped to 0.4, pure oxygen was given at a flow rate of 12 Lt and Bridium 300 mg at a slow infusion. The intubation was performed in full vigilance, after they had regained sufficient respiratory range. They were taken to the post-operative monitoring room of their vital signs, with a simple oxygen mask at 2 Lt for half an hour.

3. Management and Outcome

Rapid onset of epidural anesthesia with 3 ml test dose Lidocaine and 5 ml Naropaine 0.75% reduces the need for large doses of opioids. Then the second infusion of a lower concentration of Naropaine 0.375% and 2 mg Morfine creates a satisfactory level of analgesia. Thus epidural anesthesia reduces the required doses of opioids, offering satisfactory analgesia and helping to win these patients. In addition, Bridium for more effective reversal of muscle relaxation is necessary in elderly patients when they undergo major surgeries such as colectomy and especially when they have concomitant diseases such as chronic obstructive pulmonary disease. Sevoflurane is a good choice for respiratory patients as it does not irritate their respiratory system. Plasmalite was used to avoid sympatholysis. The continuous anesthetic pump in the epidural maintains a constant level of analgesia and helps in the better postoperative outcome of these patients.

4. Discussion

Elderly exiled patients are more difficult to release from the ventilator. The possibility of inability to release the ventilator increases when undergoing major surgery and especially abdominal surgery with large incisions as in a colectomy. When they present with concomitant diseases, very common in elderly patients and especially with respiratory diseases, such as chronic obstructive pulmonary disease, then the probability of hospitalization in the ICU and the failure of a good postoperative outcome of these patients greatly increases. The combination of epidural - general anesthesia and the use of Bridium in the awakening contributes to the faster release from the ventilator and the better postoperative course.

5. Conclusion

Epidural anesthesia plus general anesthesia, the use of Bridium in winning and the adequate analgesic action offered by the epidural local anesthetic infusion pump, reduce or eliminate ICU hospitalization days in elderly patients with chronic obstructive pulmonary disease and better obstructive pulmonary disease.

Compliance with ethical standards

Acknowledgments

General Hospital of Larisa.

Statement of informed consent

Written informed consent was obtained from the patient for publication of this case report. A copy of the written consent is available.

References

- [1] Beaussier M, El'Ayoubi H, Schiffer E, Rollin M, Parc Y, Mazoit JX, et al. Continuous preperitoneal infusion of ropivacaine provides effective analgesia and accelerates recovery after colorectal surgery: A randomized, double-blind, placebo-controlled study. *Anesthesiology*. 2007; 107: 461–8.
- [2] Liu SS, Richman JM, Thirlby RC, Wu CL. Efficacy of continuous wound catheters delivering local anesthetic for postoperative analgesia: A quantitative and qualitative systematic review of randomized controlled trials. *J Am Coll Surg*. 2006; 203: 914–32.
- [3] Polglase AL, McMurrick PJ, Simpson PJ, Wale RJ, Carne PW, Johnson W, et al. Continuous wound infusion of local anesthetic for the control of pain after elective abdominal colorectal surgery. *Dis Colon Rectum*. 2007; 50: 2158–67.
- [4] Karthikesalingam A, Walsh SR, Markar SR, Sadat U, Tang TY, Malata CM. Continuous wound infusion of local anaesthetic agents following colorectal surgery: Systematic review and meta-analysis. *World J Gastroenterol*. 2008; 14: 5301–5.
- [5] Beaussier M, El'ayoubi H, Rollin M, Parc Y, Atchabahian A, Chanques G, et al. Parietal analgesia decreases postoperative diaphragm dysfunction induced by abdominal surgery: A physiologic study. *Reg Anesth Pain Med*. 2009; 34: 393–7.
- [6] Partridge BL, Stabile BE. The effects of incisional bupivacaine on postoperative narcotic requirements, oxygen saturation and length of stay in the postanesthesia care unit. *Acta Anaesthesiol Scand*. 1990; 34: 486–91.
- [7] Conaghan P, Maxwell-Armstrong C, Bedford N, Gornall C, Baxendale B, Hong LL, et al. Efficacy of transversus abdominis plane blocks in laparoscopic colorectal resections. *Surg Endosc*. 2010; 24: 2480–4.
- [8] Beaussier M, Weickmans H, Parc Y, Delpierre E, Camus Y, Funck-Brentano C, et al. Postoperative analgesia and recovery course after major colorectal surgery in elderly patients: A randomized comparison between intrathecal morphine and intravenous PCA morphine. *Reg Anesth Pain Med*. 2006; 31: 531–8.
- [9] De Kock M, Lavand'homme P, Waterloos H. The short-lasting analgesia and long-term antihyperalgesic effect of intrathecal clonidine in patients undergoing colonic surgery. *Anesth Analg*. 2005; 101: 566–72.
- [10] Scott NB, James K, Murphy M, Kehlet H. Continuous thoracic epidural analgesia versus combined spinal/thoracic epidural analgesia on pain, pulmonary function and the metabolic response following colonic resection. *Acta Anaesthesiol Scand*. 1996; 40: 691–6.
- [11] Virlos I, Clements D, Beynon J, Ratnalikar V, Khot U. Short-term outcomes with intrathecal versus epidural analgesia in laparoscopic colorectal surgery. *Br J Surg*. 2010; 97: 1401–6.
- [12] Levy BF, Tilney HS, Dowson HM, Rockall TA. A systematic review of postoperative analgesia following laparoscopic colorectal surgery. *Colorectal Dis*. 2010; 12: 5–15.
- [13] Marret E, Rolin M, Beaussier M, Bonnet F. Meta-analysis of intravenous lidocaine and postoperative recovery after abdominal surgery. *Br J Surg*. 2008; 95: 1331–8.
- [14] Chen JY, Wu GJ, Mok MS, Chou YH, Sun WZ, Chen PL, et al. Effect of adding ketorolac to intravenous morphine patient-controlled analgesia on bowel function in colorectal surgery patients—a prospective, randomized, double-blind study. *Acta Anaesthesiol Scand*. 2005; 49: 546–51.
- [15] Schlachta CM, Burpee SE, Fernandez C, Chan B, Mamazza J, Poulin EC. Optimizing recovery after laparoscopic colon surgery (ORAL-CS): Effect of intravenous ketorolac on length of hospital stay. *Surg Endosc*. 2007; 21: 2212–9.
- [16] Chen JY, Ko TL, Wen YR, Wu SC, Chou YH, Yien HW, et al. Opioid-sparing effects of ketorolac and its correlation with the recovery of postoperative bowel function in colorectal surgery patients: A prospective randomized double-blinded study. *Clin J Pain*. 2009; 25: 485–9.
- [17] Abernethy AP, McDonald CF, Frith PA, et al. Effect of palliative oxygen versus room air in relief of breathlessness in patients with refractory dyspnoea: A double-blind, randomised controlled trial. *Lancet*. 2010; 376: 784–793.

- [18] Rafii R, Albertson TE, Louie S, Chan AL. Update on pharmaceutical and minimally invasive management strategies for chronic obstructive pulmonary disease. *Pulmonary Medicine*. 2011; 257496.
- [19] Fishman A, Martinez F, Naunheim K, et al. A randomized trial comparing lung-volume-reduction surgery with medical therapy for severe emphysema. *New Engl J Med*. 2003; 348: 2059–2073.
- [20] Berger RL, Decamp MM, Criner GJ, Celli BR. Lung volume reduction therapies for advanced emphysema: An update. *Chest*. 2010; 138: 407–417.
- [21] Elliott MW. Non-invasive ventilation: Established and expanding roles. *Clinical Medicine*. 2011; 11: 150–153. [PMC free article] [PubMed] [Google Scholar]
- [22] Smith TA, Davidson PM, Lam LT, Jenkins CR, Ingham JM. The use of non-invasive ventilation for the relief of dyspnoea in exacerbations of chronic obstructive pulmonary disease; a systematic review. *Respirology*. 2010; 17: 300–307.
- [23] Schwartzstein RM, Lahive K, Pope A, Weinberger SE, Weiss JW. Cold facial stimulation reduces breathlessness induced in normal subjects. *American Review of Respiratory Disease*. 1987; 136: 58–61.
- [24] Suzuki M, Muro S, Ando Y, et al. A randomized, placebo-controlled trial of acupuncture in patients with chronic obstructive pulmonary disease (copd): The copd-acupuncture trial (cat) *Arch Intern Med*. 2012; 172: 878–886.
- [25] Clini EM, Ambrosino N. Nonpharmacological treatment and relief of symptoms in copd. *Eur Respir J*. 2008; 32: 218–228.
- [26] Back AL, Arnold RM. Discussing prognosis: “How much do you want to know?” Talking to patients who are prepared for explicit information. *Journal of Clinical Oncology*. 2006; 24: 4209–4213.