

Paravertebral block for patients older than 80 years in one day surgery elective mastectomy

Christian Compagnone, Eleonora Schiappa, Daniele Bellantonio, Gianluca Ghirardi, Elisabetta Rossini, Fernanda Tagliaferri, Guido Fanelli

2° Servizio Anestesia, Rianimazione e Terapia Antalgica A. O. Ospedaliero - Universitaria Parma, Parma, Italy

Abstract. Paravertebral block (PVB) has been proposed as an alternative to General anaesthesia (GA) for breast surgery. It provides good operative anaesthesia, good pain control with little adverse effects. Six women older than 80 year were selected. All patients were post-operatively interviewed about the presence of pain, nausea and vomiting. All patients declared absence of pain and nausea and that they were satisfied with the procedure. The use of PVB allows elderly patients to undergo ambulatory surgery for the treatment of breast cancer with satisfaction. This technique allows a short recovery and adequate postoperative pain relief with reduced hospital costs. (www.actabiomedica.it)

Key words: Paravertebral block, regional anesthesia, elderly patients, day-surgery

Introduction

General anaesthesia (GA) is a conventional technique used for breast cancer surgery (1). However, many side-effects and complications such as post-operative pain, nausea and vomiting are reported for most patients undergoing breast surgery. Furthermore, an increment of the incidence of delirium has been associated to GA in elderly patients. Paravertebral block (PVB) has been proposed as an alternative for such surgery (2). Thoracic paravertebral block (TPVB) is based on the injection of local anaesthetic into the thoracic paravertebral space, an anatomical wedge shaped space that lies on each side of the vertebral column, where the spinal nerves emerge from the intervertebral foramina. This results in ipsilateral somatic and sympathetic nerve blockade in multiple contiguous thoracic dermatomes above and below the site of injection. The injection of local anaesthetic drugs into the thoracic paravertebral space could lead to the establish-

ment of an appropriate block for breast surgeries without any important side-effects. TPVB is associated with a decreased need of opioids for controlling post-operative pain, a decreased incidence of post-operative nausea and vomiting (PONV), an improved outcome for the patient, a decreased duration of post-anaesthesia care unit (PACU) stay and cost saving (3, 4). These effects would consent the use of one day surgery protocol, with an ulterior reduction of adverse events related to the length of stay (LOS)(5). The aim of our retrospective study was to analyze the efficacy of PVB in elderly patients undergoing elective mastectomy. The efficacy will be measure in terms of analgesia, incidence of complications and LOS.

Case Description

Materials and Methods: Six patients were retrospectively analyzed for this study. The criteria for en-

rollment were: ASA physical status class II or III, age older than 80 years and elective simple mastectomy performed with PVB plus sedation. The exclusion criteria were: chronic use of codeine or acetaminophen. Pain was evaluated with numeric rating scale (NRS). Post-Anaesthetic Discharge Score System was used for discharge criteria.

One day surgery protocol: After the collection of written informed consent patients are admitted the same day as surgery. In the operating room the patients are monitored with electrocardiogram, non-invasive arterial blood pressure device, and pulse oximeter. After premedication with midazolam, the patients undergo PVB in a sitting position with the head and shoulders flexed forward. The usual site of injection is *founded* 2, 5 cm lateral to the midline at four thoracic levels from T2 to T5. After the identification of the paravertebral space, a single-injection with 5 mL of 0.5% ropivacaine is performed for each level. A preincisional wound infiltration is performed with 20-30 ml of 1% lidocaine. Intra-operative sedation is provided with propofol infusion (25-50 µg/Kg/ min) and intermittent doses of alfentanil 0.25 mg as needed. Acetaminophen (1g ev) is used at the end of the procedure. The patients are taken to the post-anaesthesia care unit (PACU) awake.

Acetaminophen 500 mg and codeine 30 mg are prescribed as a standard order for post-operative analgesia and ketoprofen 50mg is given if necessary. The next day the patients are contacted by telephone and are questioned about the presence of pain, nausea and vomiting (PONV), the use of ketoprofen and the degree of satisfaction.

Results: From October 2010 to May 2012, a total of six patients underwent simple mastectomy with PVB. The mean age of the patients was 86 ± 4 yr. Four patients had ASA physical status III while two patients had physical status II.

We have not observed any incidence of direct epidural spread, inadvertent intravascular injection, haemodynamic instability, inadvertent pleural puncture or persistent pain after the block procedure. There were no intra-operative complications. Nausea and vomiting did not complicate the recovery of the patients. The NRS scores were zero in the immediate post-operative period.

No patients required the administration of a “rescue” drug. All the patients were discharged home within 2-4 h after surgery with a post-Anaesthetic discharge score system of 10. All the patients were satisfied and declared the absence of pain and PONV, in the telephone interview.

Discussion

Old age determines many physiological changes that lead to a reduction of functional reserve and ability to compensate for physiological stresses. Therefore, an accurate pre-operative assessment and management are essential for performing anaesthesia in elderly patients (6). Post-operative cognitive dysfunction and delirium are very common among the elderly after general anaesthesia (7). Day surgery (DS) is gradually becoming an option in many areas of surgery for the elderly because it minimizes the impact of surgery on daily activities, reduces the separation from home and may also reduce the incidence of post-operative cognitive disorders (8). However, it may be difficult to discharge home a patient over 80 years the same day of the surgery after a general anaesthesia. Many studies have been conducted for the PVB in breast surgery. Schnabel et al, analyzed fifteen randomized controlled trials concerning this issue (9). The authors concluded that there is considerable evidence that PVB provides better post-operative pain control with little adverse effects compared with other analgesic treatment strategies. Another systematic review concluded that not only is PVB associated with less pain during the immediate post-operative period but also to less post-operative nausea and vomiting and greater patient satisfaction compared with general anaesthesia (10). However, to our knowledge, no studies have been published concerning the efficacy of PVB for day surgery treatment (11). In our study and with the limitation of the sample size, PVB for day surgery was found to be a reliable technique with maximum patient satisfaction and no adverse effects. Factors that may influence the outcome of DS are the clinical status of the patient, the surgical and anaesthesiological techniques. The rate of return to hospital for complications after surgery in DS was estimated in several studies, rang-

ing from 0.15% to 4% (12). The unscheduled returns to the hospital (probably or definitely related to the day surgery) are mainly connected to infections to the wound and to haemorrhage / haematoma. The increased morbidity is very rare. Several studies have confirmed that the day surgery is safe, associated with a very low rate of return to the hospital, major morbidity (stroke, *ima*, pulmonary embolism, deep vein thrombosis, stasis development, sepsis, pneumonia and peptic ulcer) is very uncommon and no deaths have been related to the day surgery with certainty (13).

Conclusion

These cases show that the use of PVB allows elderly patients to undergo ambulatory surgery for the treatment of breast cancer with their great satisfaction. This technique aims at a fast recovery and an adequate post-operative pain relief. PVB consents one day surgery protocol with a decreased LOS and hospital costs, and probably reduces the incidence of adverse events in elderly patients.

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Correspondence:

Christian Compagnone, MD

2° Servizio Anestesia, Rianimazione e Terapia Antalgica

A. O. Ospedaliero - Universitaria Parma

Via A. Gramsci 14 43100 Parma (PR)

Phone 0521 703567

Fax: 052170286

ccompagnone@parmanesthesia.com