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Breast Surgery and Analgesic Plane Block

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Introduction

Using an echographer in anesthesia significantly increased the number of plane blocks for anesthesia and for analgesia because the anesthetist has a direct vision of the injection place of the anesthetic [1]. Plane blocks have now become the golden standard for anesthesia and post-operative analgesia. In our study we implemented plane blocks for breast surgery and, more specifically, to treat post-operative pain in additive mammoplasty.

Material and Methods

During the past two years we have selected 76 women whose average age stood at 35,76 years old. We have divided them into two groups: Group A received post-operative analgesia with elastomeric pump which was prepared for 24 hours with 400 mg of Tramadol, 90 mg of Ketorolac, 16 mg of Ondansetron and Paracetamol (if necessary); Group B received post-operative analgesia through post-induction execution of PECS1 block (we introduced the needle between the great and small pectoral muscle and we guided the needle, separating the muscle band, to the axillary space), parasternal block (II and IV intercostal space), Serratus plane block and locked with Paracetamol when needed [2-5]. The PECS1 block was executed with 14 mg of Ropivacaine 0,25% for each side; the parasternal block was executed bilaterally for each space with 3 ml of Ropivacaine 0,25%; the Serratus was executed with 20 ml of Ropivacaine 0,25% for each side.

Every patient was premedicated with 2,5 mg of Midazolam I.V. and undergone the surgery with general anesthesia induced by Propofol at 2 mg/kg. As curare, Rocuronium at 0,6 mg/kg was preferred and as intraoperative analgesia, Remifentanil at 0,25 mcg/kg/min was used. The main anesthetic agent was Sevoflurane with MAC between 0,7 and 0,9.

Every patient received a pre-emptive with 30 mg of Ketorolac, 4 mg of Dexamethasone, 10 mg of Metoclopramide, 100 mg of Tramadol and 40 mg of Pantoprazole.
Each group was analyzed once they woke up, after one hour from their awakening, after six hours, after twelve hours and after 24 hours. Every patient was administered the NPRS (Numeric Pain Rating Scale). Moreover, the PONV (Postoperative Nausea and Vomiting) was also registered.

The groups have been compared using Fisher statistical tests.

Results

The usage of plane blocks showed a clear superiority of the latter compared to the intravenous analgesia. In particular, the average level of pain after the patients' awakening stood at 3,50 in Group A while it stood at 0,06 in Group B.

After one hour from their awakening, the pain level stood at 4 in Group A while it stood at 1 in Group B. After six hours from their awakening, the pain level in Group A stood at 3,5 while it stood at 0,92 in Group B. After twelve hours from their awakening, the pain level in Group A stood at 2,75 while it stood at 0,86 in Group B.

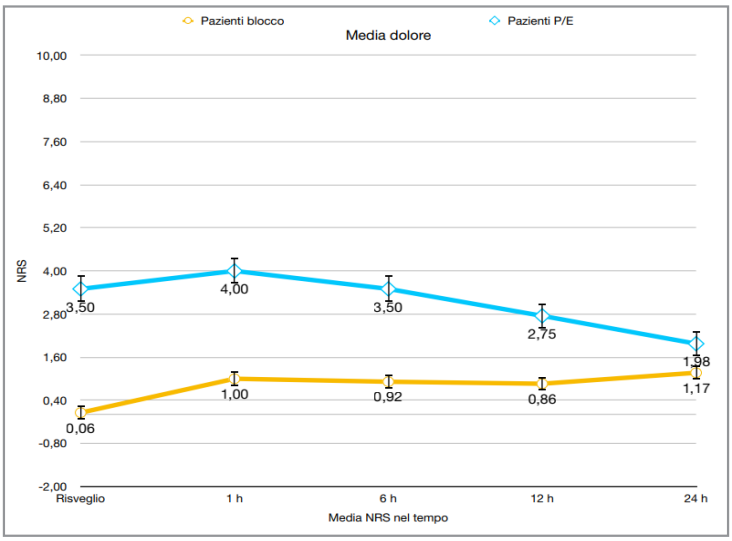

Figure 1: Comparison of Pain Levels between Group A and Group B over Time here)

Lastly, after 24 hours from their awakening, the pain level in Group A stood at 1,98 while it stood at 1,17 in Group B.

The consumption of Paracetamol was significantly superior in Group A.

There were far more cases of postoperative vomiting in Group A compared to Group B, which almost had no cases.

Discussions

The comparison between the two analgesia techniques, which took place in our study, allowed us to highlight the net superiority of analgesic blocks used to control post-operative pain compared to the intravenous therapy.
The usage of the PECS block, of the parasternal block and of the Serratus allowed a quick recovery of patients with an outstanding pain management. In addition to this, it allowed immediate recovery of the patients' autonomous motility, who were able to move across the department with no pain just after a couple of hours from the surgery.

On the other hand, those who received an intravenous analgesia had more difficulty when moving because of the post-operative pain together with the nausea caused by analgesics in elastomeric pump.

All the patients from Group B would and could have already left the building after twelve hours from surgery despite the presence of drainages in the majority of cases.

On the other hand, the majority of patients from Group A accused more pain during the first hours after the surgery, as long as more nausea and more difficulty in standing up; almost none of the patients asked for an early discharge from the hospital because of their ongoing pain and/or sleepiness and nausea.

Conclusions

As it is already possible to notice in the literature, our study affirms the net superiority of plane blocks when it comes to manage postoperative pain in breast surgery. Surely the execution of plane blocks at a higher dose compared to the one we used to guarantee the analgesia would ensure the patient to be awake or only slightly sedated during surgery, but this would mean that the dose would be much closer to the toxic dose of the local anaesthetic and, in addition, it would still be requested the implementation of a skin infiltration as the skin surface is not covered by plane blocks.

Moreover, even if it was not part of the end-points of this study, it was impossible not to observe the impact that plane blocks had on demolishing symptoms such as nausea and the ability of an early motility. For all these reasons, we believe for an increasingly implementation of plane blocks to reduce the impact of opioids used to manage post-operative pain.

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