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Efficacy of paravertebral block analgesia for post-thoracotomy pain control

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Paravertebral block (PVB) is an effective analgesic technique for post-thoracotomy pain, whereas there is no clear proof on how it can be more effective. We aimed to assess if the pleural integrity has a significant effect on thoracic PVB analgesia. Data of patients who underwent thoracotomy and paravertebral catheterization at the Menoufia University Hospitals, between November 2010 and December 2014 were retrospectively collected. Patients were classified into two groups; Group A, where the parietal pleura was disrupted, and Group B, where there was no pleural tear. Pain scores and pulmonary functions were compared between both groups. Also, the frequency of PVB analgesia and the need for supplementary drugs taken as well as the use of rescue pain medications were assessed in both groups. 132 patients were analyzed; group A (n=68) patients with pleural disruption and group B (n=64) patients with intact pleural. There was no statistical significant difference regarding age, sex, body mass index, American society of anesthesiologists score (ASA), diagnosis, and operative details. Pain scores were significantly lower in Group B, where no there was no pleural tear. Pulmonary functions significantly improved among intact pleura group. Significant increase in the frequency of PVB analgesia, supplementary drugs taken in postoperative period and in the use of rescue drugs were observed in patients with pleural disruption. Complications were higher in pleural disruption group. Preservation of integrity of the parietal pleura is essential for the quality thoracic PVB.

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The trends and challenges of pain management in the Neonatal Intensive Care Unit

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Critically ill immature preterm infants experience multiple noxious stimuli while receiving care in the Neonatal Intensive Care Unit (NICU). These noxious stimuli include, but are not limited to: venipuncture; insertion of intravenous and arterial catheters; suctioning of the nose, mouth and oropharynx; endotracheal intubation for mechanical ventilation; insertion of chest drains; and repositioning and other types of patient manipulation. The delivery of optimal doses of analgesics for these noxious stimuli is a major challenge due to the lack of knowledge about drug disposition and its effects in this population. Beyond the lack of knowledge for dose selection and response prediction, it is also relevant to consider the clinical importance of new consequences of analgesic use such as opioid-induced tolerance, hyperalgesia drug related toxicities and neonatal drug discontinuation syndrome, which challenge the current paradigm for pain management in the newborn infant population. In addition, the impact of pain in the neurodevelopment aligned to fast development of the immature brain increase the complexity in the evaluation of nociception/pain. The drug therapy used in pain management relies on an adequate pain assessment of the preterm neonate. The development of computational algorithms to measure nociception/pain in real-time constitutes the next step for pain management in the NICU. An efficient evaluation system may decrease the uncertainty on drug dosage, increase patient safety and improve pain management addressing the impact of pain in the immature brain and explain the neurologic pathway of pain in preterm infants.

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