Fascial Plane Blocks in Regional Anaesthesia and New Approaches

Yavuz Gürkan, Alparslan Kuş
Department of Anaesthesiology and Reanimation, Kocaeli University School of Medicine, Kocaeli, Turkey

We read the article on pectoral block and pain in breast surgery, which was published in the April 2017 issue of Turkish Journal of Anaesthesiology and Reanimation, with great interest (1). Despite different mechanisms of action, the application of opioids, non-steroid anti-inflammatory agents and, if appropriate, regional methods in postoperative pain treatment is very important in terms of efficient postoperative analgesia, effective suppression of surgical stress and decreasing the incidence of chronic pain (2).

Increased widespread use of ultrasonography in regional anaesthesia across the world, especially in the last 10 years, has both increased block success and positively affected patient safety (3, 4). Another benefit of ultrasonography in the early years, which was unexpected, was the definition of new blocks. New blocks such as transversus abdominis, quadratus lumborum, and pectoral blocks, which can also be called interfacial approaches, have become subjects of clinical research and practice (5). The innovation or development in this issue is not only the definition of abovementioned new blocks but also the production of alternatives of these blocks in a short period (6). This is important for new proposals in regional anaesthesia to be tested via high-standard scientific research with regard to their efficiency and safety and for useful ones to be included in clinical practices in the long term.

In parallel with this development mentioned above, pectoral blocks were defined by Rafael Blanco as an important part of multimodal analgesia in breast surgery. In 2011, Rafael Blanco reported that successful postoperative analgesia could be provided by blocking the medial and lateral pectoral nerves of the brachial plexus between the major and minor pectoral muscles in breast surgeries such as subpectoral prosthesis and expander placement. Although a block primarily seems to target surgical anaesthesia in smaller areas, its analgesic efficiency has been the subject of much more research. In time, clinical practices of pectoral block increased and also the development of the block was discussed. At the beginning, Blanco modified the block that he developed and defined pectoral block II, which could be successful in larger surgeries including axillary curettage (6). Pectoral block II targets and blocks T2–4 spinal nerves between the minor pectoral and anterior serratus muscles and long thoracic nerves in addition to the lateral and medial pectoral nerves between the pectoral muscles. The author defines the approach that he used as an alternative to the coracoid approach of Blanco (pectoral block I). In the article, it was specified that possible damage to the thoracoacromial artery, cephalic vein and pleura could be avoided by directing the needle from the medial towards the lateral, which offers an important advantage for the technique. On the other hand, implementation of catheter in peripheral nerve blocks has an importance for postoperative analgesia. As stated by the author, the efficiency of catheters can last for 7 days. They can decrease the use of opioids and allow early mobilisation and early discharge from hospital. Furthermore, persistent pain occurs in approximately 15%–25% of patients after breast surgery. Pectoral block may be able to prevent the development of this pain. However, it is difficult to make a generalisation based on a single case. Pectoral block was primarily introduced as an alternative to thoracic paravertebral block. Although thoracic paravertebral blockade is a topic emphasised in regional anaesthesia education, it is used by a few competent experts across the world because it is an advanced block requiring high needle control for patient safety and having the potential risk of pneumothorax. On the other hand, pectoral block defines an interfacial approach that is highly simple. However, what is so interesting is that Blanco gradually approached both lung tissues and central structures in PEC II and serratus plane block. In other words, researchers have begun to approach the paravertebral/central region again because distal and selective blocks do not involve all dermatomal areas in breast surgery.
We need further prospective and randomised controlled studies and case reports on new and larger series. Therefore, although this is a promising article, we think that we require more time before drawing certain conclusions and being optimistic.

References