History of Cardiac Anesthesia in India

To the Editor:

The article by Tempe and Malik is an excellent review of the development of cardiac anesthesia in India. We would like to congratulate the authors for this exposition and their interesting contribution. However, the following additional facts are significant and should be included in such a chronicle.

1. The BM Birla Heart Research Centre in Kolkata (previously Calcutta) was established in May 1989 and has been instrumental in establishing the following:
   - First neonatal open cardiac surgery in India on a 9 day-old infant in 1990
   - Dynamic cardiomyoplasty performed on 4 patients in the early 1990s
   - First successful extracorporeal membrane oxygenation in India in 1991
2. Narayana Institute of Medical Sciences, previously Narayana Hrudayalaya (NH), a tertiary care heart hospital at Bengaluru, South India, was started with the mission of affordable and quality heart care in April 2001. This now is one of the largest heart hospitals in the world, with more than 7,500 cardiac surgeries annually.
3. The establishment of international associations, including the following:
   - The association of the University of Minnesota with the Indian Association of Cardiovascular Thoracic Anesthesiologists (IACTA) to advance cardiac anesthesia in India has been in existence for more than 2 decades. Kumar Belani, who was mentioned briefly in the chronicle, has devoted considerable time and effort to the proctoring of transesophageal echocardiography (TEE) training and certifying examination administered by IACTA. Belani also is working with IACTA to establish a relationship with the Society of Ambulatory Anesthesia.
   - J Ender and Chirojit Mukherjee of the University of Leipzig played key roles in the development of IACTA’s national/international TEE workshops, which have been held at NH, Bangalore.
   - Justian Swanevelder, currently at the University of Cape Town, South Africa, played a role in advancing cardiac anesthesia and TEE through IACTA.
   - The IACTA TEE workshop has become a benchmark for similar meetings in view of the high standard maintained. This event has been conducted in collaboration with the University of Minnesota, International Society of Ultrasound, Indian Academy of Echocardiography, and the Simulation Society and has been endorsed by the American Society of Echocardiography and the European Association of Cardiovascular and Thoracic Anesthesia during the last few years.

References


Continuous Erector Spinae Plane (ESP) Block: Optimizing the Analgesia Technique

To the Editor:

We have just read the case report “Continuous Erector Spinae Plane (ESP) Block for Postoperative Analgesia after Minimally Invasive Mitral Valve Surgery.” We congratulate the authors on their publication and would like to make a few observations regarding the case and the continuous block used.

Pain between 20 and 48 hours is described on a numeric rating scale (NRS) of 2 to 4/10 at rest and 6 to 7/10 with activity. The local anesthetic infusion through the catheter was continued during this time. There is, however, no report of actual sensory block at any time. This may mean that either the clinical pain outcome reported is due to a functional continuous ESP block and multimodal analgesia or only due to multimodal analgesia including systemic absorption of local anesthetics derived from the infusion. Physical examination demonstrating the presence of a regional block may help differentiate between these two options.

As users of the erector spinae plane block, and recognizing open thoracotomy as a painful condition, we would like to believe that in this case a functional regional block explains the good analgesia, as the authors mention in the discussion.
Another aspect that is important to discuss in this case is that no rescue boluses were administered through the catheter as a means to improve analgesia. This is a well-established method of improving analgesia using perineural catheters.2

Regarding the use of boluses for an ESP catheter, we have learned that some patients actually do better with mandatory boluses than continuous infusions. As a brief report, a patient with bilateral ESP thoracic catheters for bilateral rib fractures, had excellent analgesia after initial injections (NRS 7/10 pre-block down to 0/10 post procedure), and had hypoesthesia of 7 dermatomes on both sides. A bilateral continuous local anesthetic infusion was installed. Twenty-four hours later pain was back at 4/10, hypoesthesia was present in 2 dermatomes on one side, and 3 at the other. Having clear evidence that the dermatomal extension of the ESP block had receded, a rescue bolus of 10 mL of local anesthetic solution was administered. The pain control improved, and hypoesthesia reappeared in an extension of 5 dermatomes, bilaterally. Switching to intermittent mandatory boluses maintained a 2/10 NRS during the rest of the infusion period. Since then, for unilateral ESP catheters in adult patients, our usual prescription after initial injection is using rescue boluses, either as patient-controlled rescue boluses and/or mandatory hourly boluses.

Although a multimodal approach is a cornerstone for an adequate perioperative pain management, optimizing the administration regimes of regional analgesia techniques provides higher quality analgesia with fewer side effects.1

References


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In Reply to “Continuous Erector Spinae Plane (ESP) Block: Optimizing the Analgesia Technique”

To the Editor:

We thank Drs de la Cuadra-Fontaine and Altermatt for their valuable comments. In particular their description of the superior extent and quality of analgesia following the use of local anesthetic intermittent boluses instead of continuous infusion is very instructive. To date there is equivocal evidence regarding the superiority of either regimen in the context of peripheral nerve block.1 However with regard to labor epidural analgesia, the weight of evidence is in favor of programmed intermittent boluses.2 We believe this latter scenario may be more applicable to the erector spinae plane (ESP) block since both involve local anesthetic spread within a relatively large anatomical space that contains nerves (versus within the paraneural sheath itself). We therefore agree with the authors that administering local anesthetic boluses through an ESP catheter is a sensible option for improving acute postoperative pain. Nevertheless, there is a paucity of studies with regard to fascial plane blocks3 and further investigation is clearly warranted.

Although our patient described a numerical rating scale (NRS) pain score of 6 to 7/10 with activity in postoperative hours 20 to 48 hours, we did not administer rescue boluses as the patient clearly expressed the pain as tolerable and declined any further intervention. There is significant interindividual variation in the interpretation of NRS pain scores by caregivers and patients alike.3 In our postoperative pain assessments, we therefore routinely combine this data with enquiry as to whether the pain is bearable and if the patient desires additional analgesic intervention. We believe this approach minimizes unnecessary escalation in analgesic therapy.

Finally, we agree with Drs de la Cuadra-Fontaine and Altermatt that demonstrating cutaneous sensory loss is useful confirmation of the success of a regional anesthetic block. However, we would like to note that there is ample laboratory and clinical evidence (eg, from labor epidural analgesia) that analgesia can be obtained without a profound degree of motor or sensory block, especially if low concentrations of local anesthetic are present at the site of action.3,7 The lack of correlation between analgesia and sensory loss, and even between different modalities of sensory assessment was recently shown in a study of the serratus plane block.7 Similarly, we have often observed good analgesia with the ESP block despite only modest extent and intensity of cutaneous sensory loss.

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References