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Neurophysiologic assessment of nerve impairment in posterolateral and muscle-sparing thoracotomy

To the Editor:

We read with great interest the recently published article by Benedetti and colleagues[1] on nerve impairment in posterolateral and muscle-sparing thoracotomy. The authors reported that neurophysiologic assessment of abdominal reflexes, somatosensory-evoked potentials, and sensory thresholds to electrical stimulation of the operative scar revealed that muscle-sparing thoracotomy produced less intercostal nerve impairment than posterolateral thoracotomy.

The technical differences between the posterolateral and muscle-sparing thoracotomy should be considered[2,3]:

1. The skin incision is shorter in muscle-sparing thoracotomy.
2. The latisimus dorsi muscle is transected during posterolateral thoracotomy. The trapezius muscle may be divided if wide exposure is required. The serratus anterior muscle is usually elevated and retracted anteriorly. If necessary for exposure, the serratus anterior is divided as close as possible to its origins on the ribs.

Entry into the pleural cavity through the intercostal space or through the periosteal bed of a rib and retraction of the ribs are the same for both posterolateral and muscle-sparing thoracotomies.

Intercostal nerves present at the intercostal space are mostly severed during entrance into the pleural cavity, and wide spreading of the ribs is responsible for a major component of postthoracotomy pain.[4] Muscle-sparing thoracotomy avoids transection of the latisimus dorsi and the serratus anterior muscles, thereby decreasing postthoracotomy pain.[5]

We think that intercostal nerve impairment is not the sole contributing factor in the neurophysiologic difference between the two types of thoracotomy. The data presented by Benedetti and colleagues should also have represented that nerves innervating the chest wall muscles (eg, the thoracodorsal nerve) and nociceptors of the skin have an important contribution to postoperative pain.

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[Response declined]

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