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Commentary: Battle of the bulge

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The infamous rectus bulge: An often seen but rarely reported complication after robotic assisted thoracoscopic surgery.¹ Although a major benefit of thoracoscopy is the lack of rib spreading leading to less nerve trauma, transient neuralgia is often seen from irritation to the intercostal nerves. Any injury to T7 through T12 intercostal nerves can lead to paresthesia of the rectus,² but a low assistant or extraction port that aggravates the lower intercostals (usually T9 and 10) can lead to a paralysis and flaccidity of the ipsilateral abdominal rectus muscle. Although often just an aesthetic issue, this bulge can lead to significant anguish in a patient. Wildemeersch and colleagues³ present a case of persistent rectus abdominis paralysis after robotic-assisted lobectomy, and perform a deep dive into this pesky protuberance.

Wildemeersch and colleagues³ describe a 55-year-old male patient who underwent a robotic-assisted lobectomy. Ipsilateral rectus paralysis was noted within weeks of surgery, and at 1 year postoperatively, was still present. Quantitative measurements were performed including a computed tomography scan showing decreased muscle thickness compared with the contralateral side at the level of T12 (0.52 vs 1.2 cm), along with decreased muscle density (29 vs 66 HU). An electromyography confirmed denervation of the upper two-thirds of the rectus and external oblique abdominal wall muscles.

What are the possibilities for nerve injury in this case? The authors utilize higher-than-normal port sites compared with many other centers,⁴ and the accessory port was only in the seventh intercostal space. Rectus paralysis from these

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CENTRAL MESSAGE

Rectus paralysis is a known complication after robotic thoracic surgery, but is not well described. Although often temporary, patients should be informed of this potential post-operative issue.

port positions specifically would be unusual. The tumor was also fairly small (1.7 cm), so inadvertent rib spreading during extraction is unlikely. One unique aspect of this case was the utilization of cryoanalgesia, with cryoablation of intercostal nerves 6 through 8. Could the cryoanalgesia be the culprit? It's certainly in the differential.

Anecdotally, we are seeing more rectus paralysis after robotic-assisted thoracoscopy compared with similar video-assisted thoracoscopic surgery cohorts. Although there is limited literature, evaluation of cross-sectional area of ipsilateral and contralateral rectus muscles has shown greater atrophy in robotic approach versus both robotic and open.⁵ At this time, there is not a great explanation for this higher incidence, except for differences in port placement or, theoretically, excess torque from the robotic arms on the intercostals. Although the patient in this case is still optimistically waiting for resolution, most of these rectus motor deficits do resolve in time.²

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