

Hoarseness of voice and discomfort in the throat observed after quadratus lumborum block

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To the Editor: Transmuscular quadratus lumborum block (TQLB) is known to provide visceral analgesia by blocking sympathetic fibers by spreading into the thoracic paravertebral spaces.^[1] It is relatively safer than other conventional methods of analgesia. However, to our knowledge, there have been no reports of hoarseness associated with TQLB. Herein, we report two cases of hoarseness and discomfort to the throat after TQLB.

A 42-year-old man visited the clinic due to acute lower back pain and inguinal pain with a numeric rating scale (NRS) of 7. TQLB was performed on both sides at L4 level [Supplementary Figure 1, <http://links.lww.com/CM9/A449>], and 20 mL of 0.375% ropivacaine with epinephrine in the ratio of 1:200,000 were each injected (Real-time sonographic findings are shown in Supplementary Video, <http://links.lww.com/CM9/A479>). The patient was kept in the lateral position and prepared in a sterile manner with a chlorhexidine solution for TQLB. Using the shamrock approach, the quadratus muscle, psoas muscle, and erector spinae muscle were identified, and a needle was inserted in the posterolateral to anteromedial direction toward the point where the quadratus lumborum muscle, psoas muscle, and transverse process met in this state). The patient's back pain improved from an NRS of 7 to 1. At that time, the patient's hoarseness of voice was observed. The patient complained of constant discomfort while trying to clear his throat; he did not have dyspnea or difficulty in coughing and deep breathing. Diaphragmatic paralysis was not observed on ultrasound. Moreover, there were no other abnormal findings such as miosis, ptosis, edema in the face, and hypotension. In addition, the patient reported that he had an abnormal "swollen feeling" that he could not clearly determine, on his left arm. However, the patient showed no sensory and motor blockade on his arm. Without focused treatment, the patient's hoarseness of voice returned to normal within 4 h of appearance.

A 40-year-old woman with acute low back pain was administered TQLB. Similar to that of Case 1, TQLB was performed on both sides at L4 level, and 20 mL of 0.375% ropivacaine with epinephrine in the ratio of 1:200,000 were injected. After 1 h from the time of injection, the patient experienced an abnormal sensation and itching on the left T4-L2 and right T11-L1 regions. After 3 h from the time of local anesthetic injection, the patient complained of mild hoarseness and discomfort as if a foreign body was lodged in her throat, as observed in Case 1. She did not exhibit diaphragmatic paralysis, miosis, or ptosis. The patient's discomfort disappeared 2 h after the symptoms first appeared, without any treatment.

Hoarseness of voice after a nerve block is rare except for injections in the cervical area, because it is caused by a block to the recurrent laryngeal nerve.^[2] In the cases discussed here, dysphonia and phlegmy throat were present while the TQLB was administered at the lumbar level. It has been reported that the injectate of the TQLB spreads cephalad to the thoracic paravertebral space.^[1,3,4] Also, deep fascia, the injection point of interfascial plan block which is similar to TQLB, has been studied to have a dynamic property to actively transport the injectate by a pumping mechanism on the strength of muscle tendons.^[5]

We speculate that two explanations are possible regarding the induction of the presented symptoms induced by the TQLB injectate, which is transported to the high thoracic paravertebral space; the local anesthetic-induced vocal cord edema and blockade of the recurrent laryngeal nerve. It appears more likely to occur due to temporary congestion or edema of the vocal cords. Anatomically, the blood supply of vocal cord and mucosa of larynx is from the branches of the superior laryngeal artery and cricothyroid branch of the superior thyroidal artery. These mucosal vessels are innervated by postganglionic sympa-

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thetic fibers, which arise from the superior cervical sympathetic ganglion. The superior cervical sympathetic ganglion cells are derived from the preganglionic fibers of the lateral horn of the T1-T2 level of the spinal cord. Thus, the injectate from TQLB spreads to the thoracic paravertebral space, and the sympathetic fibers in the thoracic paravertebral space are blocked, which consequently blocks the sympathetic fibers that innervate the laryngeal vessels. It is assumed that this blockade of the sympathetic fibers causes vasodilation of the laryngeal vessels, and further leads to congestion and edema of laryngeal mucosa, resulting in temporary hoarseness of voice.^[6] Further anatomical and clinical investigations are necessary to understand its mechanism in detail.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consents for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published, and due efforts will be made to conceal their identity, although anonymity cannot be guaranteed.

Conflicts of interest

None.

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