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Postsurgical Inflammatory Neuropathy Should Be Considered in the Differential Diagnosis of Diaphragm Paralysis after Surgery

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Dear Editor

We read with interest the article by Kaufman *et al.* on the development of phrenic neuropathies after intraoperative scalene block[1]. While these cases are well-described and instructive in the role of adhesions contributing to phrenic neuropathy, this is but one potential mechanism by which inflammation may contribute to the development of perioperative neuropathies. Local or generalized inflammation of the microvessels in nerve and subsequent ischemic injury is observed in a variety of neuropathy conditions, including diabetic and nondiabetic asymmetrical neuropathies [2,3] and idiopathic and hereditary brachial plexus neuropathy[4], the latter of which is also reported to have a predilection for the phrenic nerve. These conditions may first become symptomatic perioperatively, and can have significant medicolegal implications.

We have previously reported on patients who developed a variety of neuropathies, including phrenic neuropathy, following surgeries[5]. In 21 of the 33 patients, superficial sensory nerves distant from the site of surgery were biopsied, and we observed abnormal amounts of nerve inflammation in all of these and signs of nerve microvasculitis in 71% of these. Our study found that immunotherapy with steroids often can improve the pain and weakness associated with these neuropathies. In summary, while Kaufman *et al.* have reported localized adhesions as one important cause of postsurgical phrenic neuropathy, clinicians should consider diverse potential etiologies of postsurgical neuropathies, including nerve microvasculitis.

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The authors declare no competing interests.

RE: Kaufman MR, Elkwood AI, Rose MI, Patel T, Ashinoff R, Fields R, Brown D: Surgical Treatment of Permanent Diaphragm Paralysis after Interscalene Nerve Block for Shoulder Surgery. Anesthesiology 2013; 119: 484-7

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