Surgical Treatment of Iatrogenic Steroid Injection-induced Myelomalacia

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Treatment of cervical radiculopathy often involves conservative measures including steroid injections.1–3 However, these procedures do carry associated risks.4 Here, we present a case of a 49-year-old woman who experienced immediate respiratory compromise and paralysis due to inadvertent intramedullary injection of steroid. Although she regained some degree of motor function of the left upper and lower extremities, there was decreased strength with pronation, supination, and wrist and finger extension with significant wasting of the intrinsic muscles on the right side. Furthermore, she also experienced persistent loss of sensation along the distribution of the right tibial and medial and lateral plantar nerves and the right anterolateral cutaneous nerves.

Serial radiographic imaging showed intramedullary contrast extending from the occiput to C7 and extension into the medulla. A magnetic resonance imaging performed 14 months later demonstrated degenerative changes and myelomalacia extending to the right dorsal medulla and cervical cord (Fig. 1). An electromyogram (EMG) suggested multilevel root dysfunction in the distribution of C5-T1 with decreased distal motor and sensory function of the right upper extremity.

The patient presented more than 2 years after the initial injury and underwent exploration and decompression of the right carpal tunnel, cubital tunnel, and Guyon’s canal and the right tarsal tunnel. Microneurolysis and epineurectomy was performed of the ulnar nerve of the arm and elbow and the nerve to the flexor carpi ulnaris. The tibial nerve, medial plantar nerve, and lateral plantar nerve were also serially released. The sural nerve was harvested from the bilateral lower extremities and used as grafts from the left greater auricular nerve and the left supraclavicular nerve to the right carpal tunnel, cubital tunnel, and Guyon’s canal with bilateral sural nerve harvest and contralateral grafting was successful. Certainly, evaluation and treatment by a multidisciplinary team with experience in reconstructive surgery with peripheral nerves and the brachial plexus are paramount in achieving optimal outcomes.

DISCLOSURE:
The authors have no financial interest to declare in relation to the content of this article. The Article Processing Charge was paid for by the authors.

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Fig. 1. Cervical spine magnetic resonance imaging T2-weighted sagittal (A) and axial (B) images demonstrating degenerative changes and myelomalacia extending to the right dorsal medulla and cervical cord.