Neurosurgical Consultation Decreases Risk of Percutaneous Biopsy for Peripheral Nerve Tumors

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INTRODUCTION

Patients with peripheral nerve tumors may first present to a multitude of providers, but are frequently referred for neurosurgical consultation. The diagnostic workup is complicated, and the decision to obtain a tissue diagnosis can be challenging. Determining whether radiologic and clinical findings warrant a biopsy may be more familiar to neurosurgeons than non-neurosurgical colleagues. Evaluation by a neurosurgeon prior to referral for a percutaneous biopsy may reduce unnecessary procedures, and minimize the risk of complications.

METHODS

Patients seen by a single surgeon from 2000-2018 and who underwent biopsy for a peripheral nerve tumor were reviewed.

Inclusion criteria were presence of a peripheral nerve tumor, biopsy at our institution, pathology report available, and follow-up documentation. Complications were defined as new onset pain, numbness/paresthesias or weakness.

RESULTS

159 patients met inclusion criteria. 104 (65.4%) were referred for biopsy after neurosurgical consultation. 55 (34.6%) were referred for biopsy by a non-neurosurgeon, and were subsequently seen in our clinic. Of the 104 patients referred by a neurosurgeon for biopsy, 5 (4.81%) had complications. Of the 55 patients referred by non-neurosurgeons 8 (14.5%) had complications. This difference in complication rate was statistically significant (p = 0.0036).

CONCLUSIONS

Patients referred for biopsy by a non-neurosurgeon had a significantly higher risk of biopsy-related complications. Patients with peripheral nerve tumors are likely to be referred for neurosurgical consultation, and our results suggest patient care may be improved by delaying percutaneous biopsy of peripheral nerve tumors until after a neurosurgical evaluation.

Figure 1. Complication rate of image-guided percutaneous biopsy of peripheral nerve tumors in patients referred by a neurosurgeon versus a non-neurosurgeon. The difference in complication rate was statistically significant (p=0.0036)