Neuropathic Pain Following Surgery for Malignant Peripheral Nerve Sheath Tumors

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INTRODUCTION: Malignant peripheral nerve sheath tumors (MPNSTs) are aggressive soft tissue sarcomas that pose significant challenges in surgical management. This study aims to examine the anatomic distribution of MPNSTs, analyze survival rates and predictive factors for survival, and investigate the prevalence of neuropathic pain in patients who have undergone MPNST resection.

METHODS: A retrospective analysis of 119 patients who underwent MPNST resection was conducted. Additionally, a cross-sectional survey was administered and completed by 39 surviving patients to assess neuropathic pain prevalence using the NRS (0-10 scale) and the s-DN4 questionnaire, and quality of life (QoL) using the EQ-5D-5L index (0-1 scale).

RESULTS: MPNSTs most commonly occurred in the lower extremity (42.9%), followed by the upper extremity (21.0%), trunk (19.3%), head & neck (11.8%) and pelvis (5.0%). Female sex (OR: 0.25, 95% CI: 0.10-0.61) and absence of metastases (OR: 0.15, 95% CI: 0.05-0.52) were significantly associated with overall survival. Among survey respondents, 82.1% reported neuropathic pain following MPNST resection. The patients reported a mean EQ-5D-5L index score of 0.566 (±0.253) as compared to an EQ-5D-5L of 0.851 (±0.205) for the United States' general population.

DISCUSSION AND CONCLUSION: The high prevalence of neuropathic pain following MPNST resection and its significant impact on QoL highlights the need for improved pain management strategies. Nerve-sparing and/or nerve-reconstructive techniques during or after tumor resection should be considered. Future research should focus on identifying risk factors for neuropathic pain development and evaluating the efficacy of preventive measures to improve long-term pain outcomes for surviving MPNST patients.