Early Complications of Planned Resection Versus Unplanned Excision of Sarcomas in the Distal Upper Extremity

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INTRODUCTION: Unplanned excisions are defined as excisions of malignant tumors performed without preoperative cross-sectional imaging or diagnostic biopsy, frequently resulting in residual disease and re-excision secondary to positive surgical margins. The purpose of this study was to compare the relative morbidity of planned versus unplanned upper-extremity sarcoma excisions.

METHODS: A single tertiary referral hospital pathology database was queried from January 2015 through 2022 for primary upper-extremity sarcomas (forearm, wrist, hand, and finger). Demographics, tumor features, survival characteristics, and outcomes were retrospectively reviewed.

RESULTS: Forty-two upper-extremity sarcoma patients were identified, two-thirds of whom had unplanned excisions. Those with unplanned excisions were more likely to be female (relative risk [RR]: 1.9; P =.002), undergo initial excision at a nonsarcoma center (RR: 14.0; P < .001), have masses distal to the forearm (RR: 1.6; P =.02), and have smaller masses (4.8 vs 7.4 cm, P =.03). 71.4% of tumors were high grade, and 60.7% less than 5 cm in size. Unplanned excisions had positive margins in 96.4% of cases and were more likely to undergo re-excision (odds ratio [OR]: 20.0; P =.001), more total resections (2.7 vs 1.4, P =.009), sacrifice of neurovascular structures (OR: 6.1; P =.04), adjuvant radiation therapy (OR: 4.5; P =.05), adjuvant systemic therapy (OR: 10.9; P =.03), or experience a complication (OR: 17.6; P =.002) at an average of 38.0 months of follow-up. Nearly half of all unplanned excision patients developed a local recurrence or metastatic disease. Six patients required an amputation versus one in the planned cohort (P =.17), and 26.5% of patients died at an average of 32.5 months from presentation.

DISCUSSION AND CONCLUSION: Distal upper-extremity sarcoma excisions are frequently unplanned, with high rates of morbidity compared with planned excisions. Surgeons should have a low threshold for cross-sectional imaging and core needle biopsy of atypical lesions, irrespective of size, with referral to a sarcoma center.