

The Utility of Intraoperative Ultrasound-guided Resection of Musculoskeletal Soft Tissue Tumors

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Background: One of the most important technical aspects of surgical excision of soft tissue tumors is localization. In cases where the tumor is not palpable, finding the tumor intraoperatively can be difficult. Though ultrasound has been used to localize soft tissue tumors for percutaneous biopsy its use intraoperatively has not been extensively studied.

Question/Purpose: To determine the value of intraoperative ultrasound (US)-guided localization prior to the excision of non-palpable soft tissue tumors in the extremities.

Patients and Methods: Clinical records, images and histopathology reports of 23 patients with non-palpable soft tissue tumors were retrospectively reviewed at a single institution. Ultrasound was used to identify the lesions in all cases. Perioperative, intraoperative and postoperative complications were noted. The primary outcome was successful localization and excision of the tumor with negative margins.

Results: Successful identification of the mass was achieved in 24 of 25 cases. The median time for US-guided localization and surgical excision was 39 minutes. Tumor was present within the surgical margins in 2 of 17 (12%) malignant tumor resections. There were no complications related to the intraoperative ultrasound technique.

Conclusion: Intraoperative US-guided localization allows effective and safe identification of nonpalpable soft tissue tumors prior to excision.