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Risk of amputation after unplanned excision

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Background: Unplanned excisions of soft tissue sarcoma may adversely affect local recurrence and overall survival. Tumor bed excisions are recommended after most cases of unplanned excision, although these procedures may be more extensive compared to planned excisions and skin grafting, muscle flaps or even amputation are applied for those patients. We compared patients who had tumor bed excision after unplanned excisions to those who had initial procedures in our institution. The type of surgical procedure was assessed. We expected a higher incidence of amputation and flap/skin grafts for those who had unplanned excisions.

Methods: Patients diagnosed with soft tissue sarcomas and who underwent surgical excision of tumor at the Cancer Institute Hospital in Tokyo between 1978 to 2009 were retrospectively reviewed. Age, histologic diagnosis, grade, tumor location, size, adjuvant treatments, surgical procedure (amputation, limb-sparing procedure) and flap or skin graft procedures were reviewed for each patient. We excised the tumor bed with 2cm of margins for high grade tumors and 1cm margins for low grade tumors. Muscle fascia was considered as a barrier when we excised a tumor. We used radiation only when a positive margin was detected after tumor bed excision. All variables were analyzed with Chi square test.

Results: 917 patients with a median age at diagnosis of 52-years were eligible for analysis. 76 % of patients had initial surgical excision in our hospital and 24 % of patients had tumor bed excision after unplanned excision elsewhere. Those who had unplanned excisions did not have an increased risk of having an amputation, but were more likely to require additional soft tissue coverage with muscle flaps or skin grafting ($p < 0.001$).

Conclusions: Unplanned excisions did not increase the risk of amputation probably because patients with larger tumors are more likely to be referred to cancer centers before intervention than smaller ones. Wounds following unplanned excisions were more likely to require additional soft tissue coverage with muscle flap or skin grafting than were those done as an initial tumor resection.

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