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Titel des Beitrags: A new modification of combining vacuum therapy and brachytherapy in large subfascial soft-tissue sarcomas of the extremities.

Abstract:

PURPOSE: To present a modification of a technique combining the advantages of brachytherapy for local radiation treatment and vacuum therapy for wound conditioning after resection of subfascial soft-tissue sarcomas (STS) of the extremities.

PATIENTS AND METHODS: Between January and May 2008, four patients with large (> 10 cm) subfascial STS of the thigh underwent marginal tumor excision followed by early postoperative HDR (high-dose-rate) brachytherapy (iridium-192) and vacuum therapy as part of their interdisciplinary treatment. The sponge of the vacuum system was used to stabilize brachytherapy applicators in parallel positions and to allow for a maximal wound contraction in the early postoperative phase, thus preventing seroma and deterioration of local dose distribution as optimized in computed tomography-(CT-)based three-dimensional conformal treatment planning. In three patients this was followed by external-beam radiotherapy. Acute wound complications and late effects according to LENT-SOMA after 4-8 months of follow-up were recorded.

RESULTS: The combination of vacuum and brachytherapy was applicable in all patients. CT scans from the 1st postoperative day showed the shrinkage of the sponge located in the tumor bed with the brachytherapy applicators in the intended position and easily visible.
15-18 Gy in fractions of 3 Gy bid prescribed to 5 mm tissue depth were applied over the next days with removal of the sponge and applicators on days 5-8. No early or late toxicity exceeding grade 2 was observed. The mean Enneking Score for functional outcome was 63% (perfect function = 100%).

CONCLUSION: The combination of vacuum and brachytherapy is applicable and safe in the treatment of large subfascial STS.

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