Gracilis Muscle-Only Flap for Soft Tissue Coverage Following Oncologic Surgery of the Neck

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Outcome Objectives:
1) Describe the use of the gracilis muscle-only flap for the protection of neurovascular structures in the neck.

Methods: A review of records, imaging, and photographs was performed along with a review of the literature. Previous cases where the gracilis muscle was used for free tissue transfer were reviewed.

Results: A 13-year-old female was referred for management of a right-sided residual malignant peripheral nerve sheath tumor. The tumor was ipsilateral to her dominant hand, and the patient was an avid volleyball player and violinist. Imaging demonstrated the tumor diffusely infiltrating structures of the carotid sheath, sternocleidomastoid muscle (SCM), and levels II – IV in the neck.

The patient underwent surgical resection of the tumor and the ipsilateral SCM, carotid artery, jugular vein, vagus nerve, hypoglossal nerve, and cervical sympathetic chain. The carotid artery, vagus, and hypoglossal nerves were reconstructed with grafts. Postoperative radiation was planned, necessitating protection of the underlying grafts. A portion of the right gracilis muscle was harvested and sutured to the mastoid tip and clavicle. Vascular anastomoses were performed to nearby vessels. The patient experienced no flap donor or recipient site complications. Symmetry was excellent postoperatively.

Conclusions: This novel use of the gracilis muscle for soft tissue coverage following ablative surgery in the neck resulted in negligible donor site morbidity and an excellent aesthetic outcome in both the neck and the inner thigh.