Soft Tissue Tumors of the Neck

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KEYWORDS

• Soft tissue tumors • Neck • Neoplasms • Biopsy

KEY POINTS

- Navigation within the complex structures of the neck, particularly where distortion exists, can be difficult; knowledge of normal anatomy, specific tumor characteristics, and ablative requirements must be applied to achieve successful treatment results.
- Advances in free tissue transfer have enabled the ablation of previously inoperable tumors.
- Given the variability of tumors in this region and associated resection requirements, imaging and preoperative biopsy should be routine for all but the smallest and most superficial tumors.
- Successful treatment should be assured with careful follow-up, including imaging when indicated.

General principles

Management of soft tissue tumors of the neck requires a great deal of expertise, both in terms of anatomic understanding, and surgical skill. Navigation within the complex structures of the neck, particularly where distortion exists, can be difficult. Knowledge of normal anatomy, specific tumor characteristics, and ablative requirements must be applied to achieve successful treatment results. This article reviews the treatment of soft tissue neoplasms of the neck.

Ideal functional and cosmetic outcomes are achieved by using surgical approaches that portend to optimal outcomes, sparing structures that can be reasonably spared, and reconstructing removed tissue whenever possible and appropriate. Advances in free tissue transfer have enabled the ablation of tumors that previously were considered inoperable because of size or location. Neck reconstruction using a large number of pedicled flaps remains an easy viable option with distinct advantages in select cases. Regardless of the method of reconstruction, clean surgical margins are paramount, and the overall ablative requirements must be the priority.

The ability to circumnavigate the neck is often important, given that in some lesions, utilization of a posterior approach is preferred. Surgeons comfortable with anterior approaches and anatomy may not intrinsically transfer this knowledge to the posterior neck when this is an uncommon operative field.

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Benign tumors

Lipoma

Lipomas overall represent the most common soft tissue tumor of the neck. Most lesions are located superficially in either the subcutaneous or dermal soft tissue (Figs. 1–8). Treatment of lipomas of the neck is determined by a number of factors, including location, size, involvement of critical adjacent structures, and reconstructive needs to optimize functional and cosmetic outcomes. Prior to biopsy, imaging studies are often helpful in understanding the full extent of the lesion. Although computed tomography (CT), ultrasound, and MRI are all used, MRI generally represents the ideal imaging modality. Preoperative biopsy is generally recommended unless tumors are small and classic in radiographic appearance. Lipomatous tumors have been divided by the World Health Organization into the following categories: ordinary lipoma, lipomatosis, lipomatosis of nerve, lipoblastoma/lipoblastomatosis, angiolipoma, myolipoma of soft tissue, chondroid lipoma, spindle cell/pleomorphic lipoma, and hibernoma. Treatment variations exist based on the various tumor types, another rationale advocating preoperative biopsy. For the purposes of this section, the focus will remain on ordinary lipoma.

Ordinary lipoma is the most common soft tissue tumor in adults, accounting for upwards of 30% to 50% of all soft tissue tumors of the body, with an incidence estimated at 0.5 to 1 case per 1000 population.[1] It occurs over a wide age range, but is most commonly diagnosed between the ages of 40 and 60 years, being somewhat rare in children. Approximately 10% present with multiple lipomas, which are often familial in nature and especially common in males. Approximately 13% to

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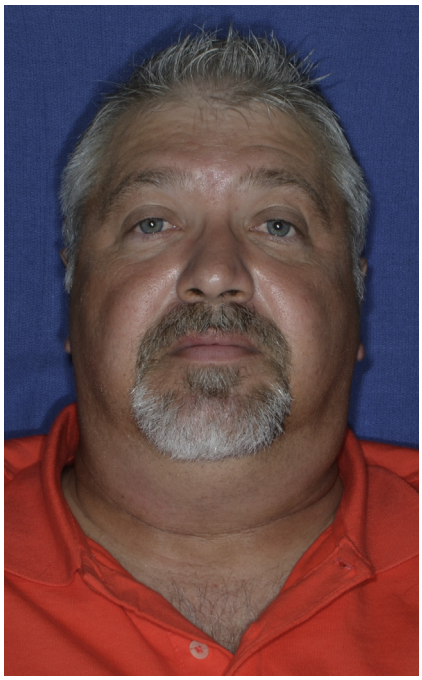

Fig. 1 46 year old man presented with a long-standing left neck mass. Patient concerned with recent growth of the mass and relatively new onset of pain.

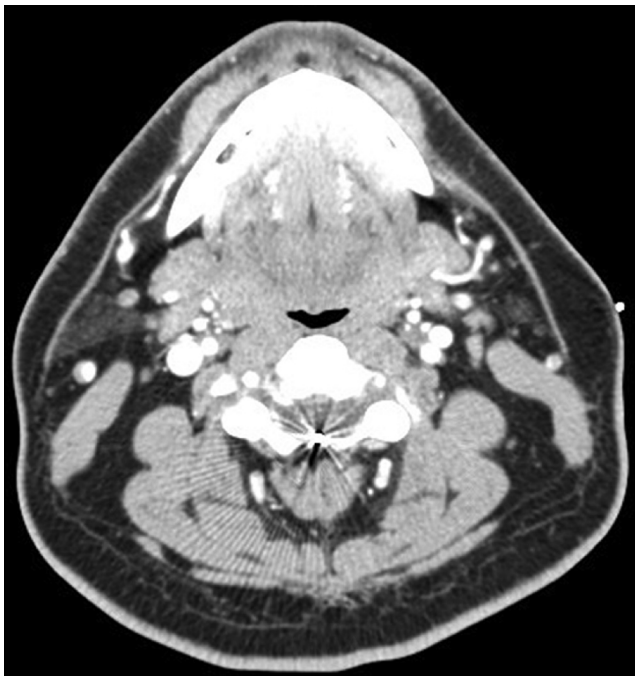

Fig. 3 Axial CT scan with contrast shows a mass superficial to the platysma whose density is similar to the adjacent subcutaneous fat.

17% of all lipomas are found in the head and neck region. They arise most frequently in the subcutaneous tissues and more rarely in deeper soft tissues. Most present as painless masses. Stable asymptomatic lesions less than 5 cm in size may be observed, although many are excised for cosmetic reasons. Simple excision is the treatment of choice, with a local recurrence rate of 4% to 5%.[2]

Peripheral nerve tumor (schwannoma or neurilemmoma)

Schwannomas are benign neoplasms of Schwann cell origin that surround peripheral nerves. Twenty-five percent to 45% of all schwannomas occur in the head and neck region extracranially.[3] They are most often solitary, well-encapsulated benign

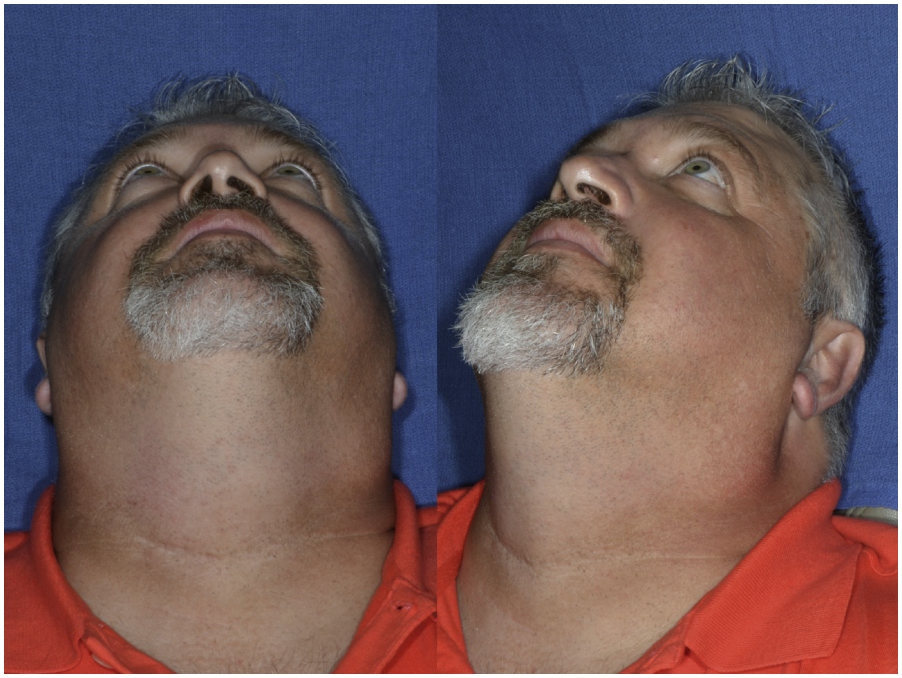

Fig. 2 Alternative views provide better visualization of the left neck mass.