Shoulder Droop Following Excision of Malignant Melanoma on the Posterior Neck

William Scharpf, BS,* Laura F. Sandoval, DO,** Jonathan Stuart Crane, DO, FAOCD***

*Medical Student, 2nd year, Campbell University School of Osteopathic Medicine, Buies Creek, NC
**Dermatology Resident, 2nd year, Sampson Regional Medical Center Dermatology Residency Program, Clinton, NC
***Dermatologist, Demone, Wilmington, NC; Program Director, Sampson Regional Medical Center Dermatology Residency Program, Clinton, NC

Abstract

A patient with malignant melanoma on his left posterior neck underwent a wide local excision in the left posterior triangle. Surgical procedures within this region can lead to severing or stressing of the spinal accessory nerve (SAN), which provides muscle innervation to the trapezius and sternocleidomastoid (SCM) muscles. Subsequent paralysis of these muscles will cause the shoulder on the affected side to droop downward. Chance of permanent disability is remarkably increased with failure to recognize signs and symptoms following surgery. While there are immediate treatments available for this condition, the best form of care remains prevention and proper awareness. We present a case of iatrogenic injury to the SAN as a result of a malignant melanoma excision in the left posterior triangle of the neck.

Introduction

In surgery of the skin, familiarity with anatomy such as important vessels and nerves is key. In cases of invasive melanoma and invasive squamous cell carcinoma that meet guidelines, sentinel lymph node biopsy may be recommended, possibly along with lymph node dissection. For skin cancers of the head or neck there is greater concern for metastases to nearby lymph nodes. However, performing procedures in these areas can be associated with significant morbidities, the most common of which is shoulder dysfunction via injury of spinal accessory nerve.

Case Report

A 69-year-old male with a history of malignant melanoma presented for skin cancer surveillance and further evaluation of various skin lesions. At rest, the patient’s left shoulder and clavicle were noticeably lower than those on the right side (Figure 1), with notable supraclavicular depressions due to trapezius and sternocleidomastoid atrophy (Figure 2). He had received a sentinel lymph node biopsy and a wide local excision to remove a malignant melanoma from his left posterior neck six years prior. Directly after the operation, the patient experienced “nerve issues and numbness” over the left side of his neck and shoulder. He has since had skin grafting performed by a plastic surgeon and was evaluated by a neurologist for the numbness.

Discussion

The anatomical pathway of the SAN leaves it especially vulnerable to stress whenever operating on the lateral neck. The nerve crosses the jugular foramen beside cranial nerves IX and X before traveling obliquely downward to innervate the SCM and trapezius muscles. Along this course, the SAN passes superficially through the posterior triangle, made up of the SCM muscle anteriorly, the trapezius muscle posteriorly and the middle third of the clavicle below. The nerve’s point of entry into this region lies in the middle of the posterior edge of the sternocleidomastoid muscle, at Erb’s point. Here, branches of the cervical plexus disperse across the neck, providing sensory and motor innervation to the back of the head and neck. The only structure separating this delicate region from the skin is a layer of deep cervical fascia. Thus, an extreme level of caution is required during a radical neck dissection.

Conclusion

In the example of this case study, the patient had already lost function in his left trapezius and SCM. Because the surgery was so long ago, it is unknown whether or not the SAN was fully cut initially, or simply injured but never acted upon. Ultimately, iatrogenic injury is avoidable, and caution should be used anytime a physician operates. When operating in the posterior triangle, the physician should be on the lookout for significant landmarks so as not to damage the accessory nerve. If an injury does occur, it should be managed with periodic inspection and physical therapy if applicable.
References

Correspondence: Laura Sandoval, DO; 1099 Medical Center Dr., Wilmington, NC 28401; Ph: 910-251-9944; F: 910-763-4666; lsandovaldo10@gmail.com