Case presentation: (Prepared by: Lorice Mahfoud, MD)

RD, a 23 year old male patient, previously healthy, presented with a 2 month history of left posterior neck mass. He first noted the mass around 2 months prior to presentation, as a slowly growing painless mass. There was no history of associated skin changes, fever, hoarseness, or upper extremity weakness or numbness. He had no history of infection or trauma.

On physical exam the patient was found to have a left postero-lateral neck mass, 5x5 cm, non tender, soft, non mobile, non pulsatile and well circumscribed. No overlying skin changes were noted and normal muscle power in upper extremities and normal pulses was found. A fine needle aspirate was done that was found to be acellular. A total body PET-CT was done and was negative. An MRI of the neck revealed a 5x5cm, high signal lesion on T1 and T2, with heterogenous areas, enhancing on IV contrast.

Fig 1: MRI neck of the patient showing T1-high signal lesion in left posterior neck, within the neck muscles.

The patient was taken to the operating room where he underwent resection of the posterior neck mass. The mass was easily resected from the surrounding tissue.
The patient was discharged home the next day after removing the neck drain. The pathology revealed intramuscular angiolipoma.

**Diagnosis:** Intramuscular angiolipoma.

**Discussion:**
Lipomas are the most common soft-tissue tumors, but the head and neck region is a rare site of origin (1). Angiolipoma (AL) is a variant of lipoma, with a prominent vascular component, constituting only 6%-17% of all lipomas (2). Twenty AL cases have been reported in the head and neck region. Of these, only 4 cases have been reported in the neck, 3 of the infiltrative type (75%) (1,3). None of the other sites in the head and neck were infiltrative (3,4,5). ALs of the neck tend to be infiltrative in nature. They usually present as painful or tender subcutaneous masses in young adults. Infiltrating ALs also can lead to muscular pain and neural deficits (1,3).

Histopathologic characteristics of AL are described as follows:
1. gross evidence of tumor formation with or without a capsule;
2. microscopic evidence of 50% mature lipocytes in the tumor;
3. microscopic evidence of angiomatous proliferation in tumor (1,3).

ALs are divided into infiltrating and noninfiltrating types; histologically similar both with proliferation of blood vessels and lipocytes, but the infiltrating type have no identifiable capsule, and there may be pleomorphism, atypia, or mitotic figures (1,3).

Fig 2: Angiolipoma showing mature adipose tissue with numerous vascular channels (Hematoxylin and eosin stain, ×200) (1).
Differential diagnosis includes: hemangioma, lymphangioma, lipoma, Kaposi’s sarcoma, liposarcomas and angiosarcoma \(^1\).

The components of nonfatty regions in angiolipomas are small vessels and capillaries to a variable degree \(^6\); thus, they have hyposignal intensity on T1-weighted images, bright signal intensity on T2-weighted images, and are well enhanced after infusion of contrast media. The septa of well-differentiated liposarcoma are composed of muscle fiber, lipoblasts, vessels, and inflammatory cells; thus, the signal intensities of nonfatty regions of well-differentiated liposarcoma have been reported with similar findings to those of angiolipoma \(^7\). Angiolipomas may be more strongly enhanced than well-differentiated liposarcomas, however, because of the vascular structure of angiolipoma.

Treatment of ALs is complete surgical excision. The infiltrating type can create difficulty in excision, with high recurrence rate. In cases where adequate resection cannot be obtained, radiation therapy may be used \(^1\). A case of successful treatment with interferon alfa of a giant infiltrating angiolipoma also has been reported \(^8\).

References:
1- Enver Ozer, MD, and David E. Schuller, MD, Angiolipoma of the neck Otolaryngology–Head and Neck Surgery (2006) 135, 643-644