Cavernous Hemangioma of the Carotid Sheath

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INTRODUCTION
Cavernous hemangiomas are rare benign tumors of the head and neck. A case of a large sclerosing cavernous hemangioma of the carotid sheath is presented. To our knowledge, this is the first report of such a case. Adding to the unique nature of this case is the tumor’s unusual presentation on radiographic imagining.

CASE REPORT
A 64 year old man was admitted to the hospital for a CHF exacerbation and was found to have a large 6cm right neck mass. Due to psychiatric comorbidities the patient was a poor historian. However, the patient was able to deny any pain, dysphagia, or dysphonia associated with the mass.

On physical examination of the neck, a firm 6cm by 6cm mass was palpable deep to the right sternocleidomastoid muscle. The mass was mobile in all directions, non tender, non-pulsatile, and without detectable bruits. No lymphadenopathy was palpated.

CT of the neck revealed a 5.1 by 4.0 by 5.5 cm well defined soft tissue mass medial to the right SCM. The mass was splaying the carotid artery and internal jugular vein. The right internal jugular vein was deviated and compressed along the anterior lateral aspect of the mass. An enhancing vessel was noted within the posterior aspect of this mass. There was a mild low density along the posterior lateral aspect of the mass suggesting either cystic change or necrosis.

This large, well defined right carotid space mass was suggestive of a schwannoma or neurofibroma. Furthermore, the nerve of origin was thought to be the vagal nerve because the great vessels were splayed. Lower on the differential diagnosis was paraganglioma because these tumors are usually more superiorly located. The non-enhancing nature of the mass made a hemangioma unlikely.

Excision of the mass was performed under general anesthesia. A transverse cervical incision was made and the SCM retracted posteriorly. The mass was located within the carotid sheath and dissected free of the carotid artery and internal jugular vein. Histopathological examination of the excised specimen revealed large cavernous vascular structures surrounded by a fibrous stroma. The histopathologic diagnosis was sclerosing cavernous hemangioma. Postoperatively the patient suffered no neurological deficits.

DISCUSSION
Hemangiomas are benign vascular tumors with malignant transformation occurring rarely, if at all. More than 50% appear in the head and neck, with 25% appearing on the trunk, and 15% appearing on the extremities. The majority of hemangiomas are superficial lesions, but they do occasionally occur deeply.1

This is the first report of a hemangioma arising in this location. Previous authors have reported atypical locations in the head and neck such as the tympanic membrane.2 Prior to this report, the closest hemangioma to the carotid sheath was an intramuscular hemangioma found in the sternocleidomastoid muscle.3

Hemangiomas have been known to cause high-output heart failure. This phenomenon is associated with giant cutaneous hemangiomas and hepatic hemangiomas which act as arterovenous shunts.4,5 Interestingly, the patient in question presented in heart failure. However, while the patient’s heart failure resolved with aggressive diuresis, this improvement did not temporally correlate with his surgery. Furthermore, he had a long history of untreated hypertension. It is therefore likely that his chronic untreated hypertension, not his neck mass, was responsible for his heart failure.

Angiography and embolization may also be used to treat hemangiomas. Embolization causes ischemia and necrosis within the lesion and expedites involution. Although embolization may be used preoperatively for deep hemangiomas, resection remains the mainstay of treatment. Preoperative embolization may not have been beneficial in this case because the lesion had already involuted. Furthermore, the hemangioma in question would have still required surgical excision. Embolization may be warranted when the lesion is hypervascular, especially in small children when blood volume may be limited. It is also indicated for life threatening hemangiomas, where mass reduction is required rapidly, and in instances of cardiac failure.6

References