



## Angioleiomyoma of the Nasolacrimal Duct: Case Report and Literature Review

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### Abstract

Angioleiomyomas are benign tumors composed of smooth muscle and vascular endothelium. While infrequent in overall prevalence, they are exceptionally rare in the head and neck. Herein, we describe the case of a 65-year-old female who was found to have an angioleiomyoma of the right nasolacrimal duct. Endoscopic excision of the lesion along with medial maxillectomy and dacryocystorhinostomy were performed without complication. The current report is one of few reported cases of angioleiomyomas of the lacrimal drainage system.

### Introduction

Angioleiomyomas are rare and benign smooth muscle tumors that originate in the tunica media of the vasculature. They can occur anywhere in the body, and can be found in the dermis, subcutaneous fat, and fascia [1]. Morimoto categorized angioleiomyomas according to three histological subtypes (solid, venous, and cavernous) as well as two anatomical subtypes: A larger group of tumors conventionally found in the extremities (most commonly the lower extremities), and a smaller group of tumors typically found in the head. The larger group is usually of the solid type and is tender, while the smaller groups is usually of the venous type and are painless [2]. Angioleiomyomas of the head and neck comprise about 10% of all those found in the body [3]. In this case report, we present a case of an angioleiomyoma found to be the cause of a nasolacrimal ductal obstruction in a symptomatic 65-year-old female. Collection and evaluation of protected patient health information were HIPAA compliant.

### Case Presentation

A 65-year-old female presented to a tertiary-care Otolaryngology - Head and Neck Surgery clinic for a nasolacrimal duct lesion found incidentally when receiving dental implants recently prior to presentation. She reported a history of chronic lower right eyelid edema, epiphora, and frequent styes. Computed tomography of the orbits without contrast revealed a well-defined mass in the right nasolacrimal duct, suggestive of a low-grade neoplasm or polyp. Magnetic resonance imaging of the head demonstrated a mass expanding the right nasolacrimal canal, suggestive of a dacryocystocele. Endoscopy was also performed, which visualized a right deviated septum. The patient subsequently underwent endoscopic excision of the right nasolacrimal duct lesion, medial maxillectomy, septoplasty, and dacryocystorhinostomy. Intraoperative biopsy of the lesion determined that it was not cystic and that it was a solid tumor. Consistent with imaging, the walls of the lesion were smooth with no evidence of bony invasion or aggressive features. On frozen section pathology, it was noted to be a benign vascular tumor and final pathology revealed an angioleiomyoma. The procedure was completed without surgical complication and the patient did well postoperatively.

### Discussion

Neoplastic causes of nasolacrimal duct obstruction are uncommon and include papillomas, lymphomas, squamous cell carcinomas, and melanomas. In the current report, the pathologist determined the mass to be an angioleiomyoma, describing well circumscribed fascicles of smooth muscle cells surrounding vascular lumens lined by normal endothelium but lacking an elastic lamina. Upon comprehensive review of the literature, ophthalmologic manifestations of this tumor are extremely rare.

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They have been described as arising from the region of the lacrimal gland, causing painless edema of the affected upper eyelid [4,5], while others have been reported elsewhere such as the orbital apex, causing proptosis of the globe [6,7]. Korn et al. [8] described a case of a 50-year-old male who presented with epiphora and swelling of the right medial canthus and was found to have an angioleiomyoma of the right lacrimal sac. To our knowledge, only one other case has thus far been reported to be found in the nasolacrimal duct [9].

A number of angioleiomyomas have also been reported in the nasal cavity and paranasal sinuses, at a seemingly higher frequency than those arising from the lacrimal drainage or orbital systems. These tend to cause nasal obstruction, epistaxis, and facial pain upon presentation. All of the reports mentioned were managed with surgical excision of the tumor, and both tumor recurrence and malignant transformation were deemed unlikely.

## Conclusion

Obstruction of the nasolacrimal duct can occur as either a primary congenital phenomenon or secondary to a wide range of etiologies. If the obstruction is confirmed to be secondary to a neoplasm, careful attention and consideration should be executed on the part of the surgeon, as various neoplastic origins may dictate various prognoses.

Angioleiomyomas are themselves rare neoplasms found in the body, with only two cases reported to involve the nasolacrimal duct. If presented with this rarity, the authors recommend surgical excision as the first-choice method of treatment, followed by serial examination to monitor for recurrence, which is unlikely if surgical margins are negative.

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