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CASE REPORT

Recurrence of Benign Orbital Solitary Fibrous Tumor

Muhammad Awan, BS[1*], Lea Carter, DO[2], Heidi Mina, MD[2] and Jorge Agi, MD[3]

[1]*Alabama College of Osteopathic Medicine, Dothan, Alabama, United States of America*
[2]*University of South Florida Ophthalmology Residency Program, Tampa, Florida, United States of America*
[3]*USF Health Morsani Center for Advanced Healthcare, Tampa, Florida, United States of America*

***Corresponding author:** *Muhammad Awan, 445 Health Sciences Blvd, Dothan, AL 36303, USA, Tel +1 (321) 368-2340*

Abstract

Orbital solitary fibrous tumors are rare, accounting for less than 1% of all orbital tumors. These tumors are typically benign and surgical excision is curative, although recurrence of the neoplasm may occur after surgery. We report a case of a recurrent orbital solitary fibrous tumor in a 30-year-old female patient. The patient initially underwent an orbitotomy with partial resection for a right periorbital lesion in April 2024 but presented it to the clinic in September 2024 with worsening right upper eyelid inflammation and a palpable mass. Post-contrast T1-weighted imaging revealed a well-circumscribed enhancing mass in the right superomedial orbit. Right orbitotomy with complete tumor excision was performed, and histopathology of the ovoid nodule confirmed a recurrence of benign solitary fibrous tumor. Orbital solitary fibrous tumors, though rare, should be considered in the differential diagnosis of orbital masses. Complete excision and long-term follow-up are essential in preventing recurrence.

Keywords

Orbital solitary fibrous tumor, Recurrent tumor, Benign neoplasm, Orbitotomy, Histopathology

Abbreviations

CT: Computed Tomography; MRI: Magnetic Resonance Imaging; OD: Oculus Dexter; SFT: Solitary Fibrous Tumor

Introduction

Solitary fibrous tumor (SFT) is a rare mesenchymal neoplasm that may develop in any part of the body. These tumors are most commonly located in the thoracic cavity, with only 5% found in the head and neck, and less than 1% occurring in the orbit [1]. Manifestations of orbital solitary fibrous tumors include progressive proptosis, displacement of the eye, and a palpable mass on physical exam. Generally, SFTs are benign and exhibit excellent prognosis following surgical excision, although recurrence, invasion, and metastasis are still possibilities [2,3]. In this report, we present a rare case of recurrent solitary fibrous tumor of the orbit in a 30-year-old female patient that was successfully treated by right orbitotomy and tumor excision.

Case Presentation

A 30-year-old female presented to clinic for an orbital mass evaluation in September 2024. She had a previous orbitotomy with partial resection done in April 2024 for a lesion of the right orbit; however, she experienced recurrent right upper eyelid edema and inflammation since then. She presented with fullness along the right medial canthal region with a palpable mass mildly tender on exam. No overlying skin changes were appreciated. There was inferomedial dystopia of the orbit. Visual acuity was 20/20 OD and intraocular pressure was 22 mmHg. Post-contrast T1-weighted imaging revealed a discrete, well-circumscribed enhancing ovoid mass along the right superomedial orbit (Figure 1).

She underwent right orbitotomy with orbital tumor excision with an uncomplicated post-operative course. Gross surgical excision revealed a 1.5 x 1.4 x 1.3 cm tan-pink firm ovoid nodule with a mild amount of attached pink-tan-purple fibrous tissue (Figure 2). On pathology processing, the neoplastic cells demonstrated diffuse positivity for CD34 and STAT6. They were negative for S100, desmin, and DOG-1. The diagnosis was consistent with the recurrence of benign solitary fibrous tumor with a mitotic count deemed as low risk.

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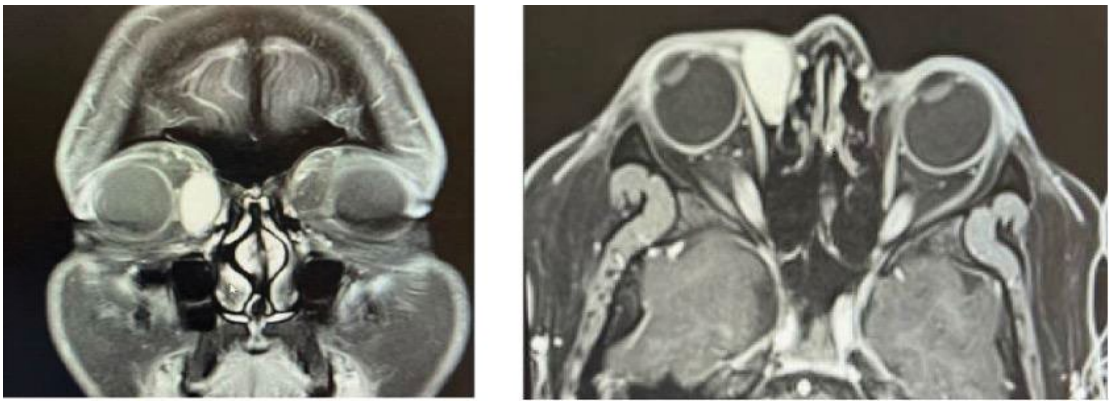

Figure 1: Coronal (**left**) and axial (**right**) post-contrast T1-weighted imaging revealing enhanced mass at the right superomedial orbit.

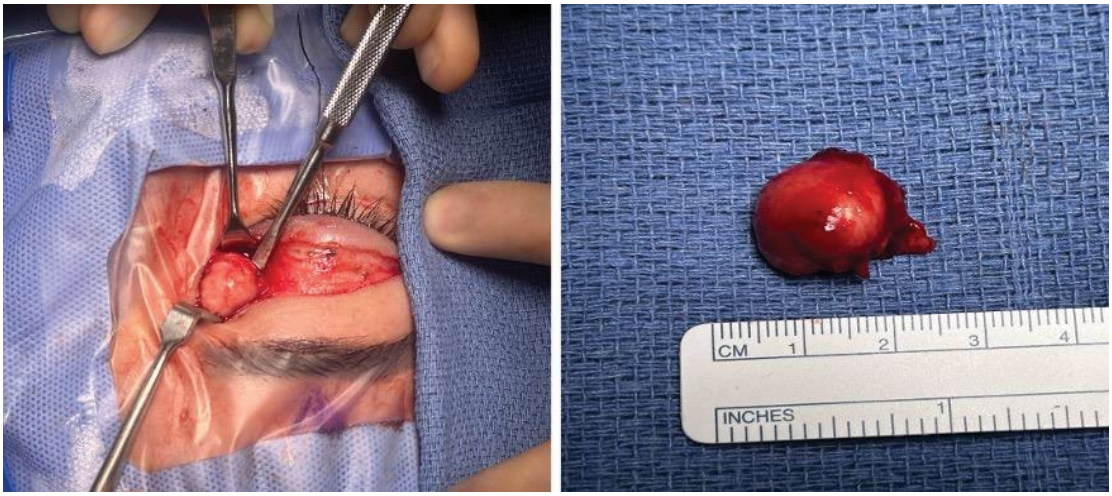

Figure 2: Intraoperative photos of excision of 1.5 x 1.4 x 1.3 cm ovoid nodule.

Discussion

Solitary fibrous tumors account for less than 1% of all orbital tumors [2]. These neoplasms generally arise spontaneously without any causative factor. Orbital SFTs occur equally in men and women and on average present around 50 years of age [1]. While these tumors are most often present in the superior region of the orbit, they can essentially develop in any part of the eye [2,4]. Patients typically present with the complaint of slowly progressive proptosis. Other symptoms may include periorbital edema, displacement of the eye, and a palpable mass on physical exam [4,5]. Orbital SFTs typically measure between 1 to 3 cm in size, are unilateral, well-circumscribed, solitary, and lobulated [2].

Solitary fibrous tumors are histologically characterized by their 'patternless pattern' appearance, demonstrating haphazard arrangements of fibroblasts with prominent vasculature and collagen dispersed between these cells [2,4]. SFTs also exhibit intense and uniform staining for CD34, differentiating this neoplasm from other orbital tumors of similar clinical presentation. For example, hemangiopericytomas demonstrate patchy CD34 staining, and fibrous histiocytomas are CD34 negative [3]. Additionally, solitary fibrous tumors overexpress CD99 and STAT6, and the fusion of the NAB2 and STAT6 genes at 12q13 serves as a critical diagnostic marker [1,6].

On CT imaging, orbital solitary fibrous tumors appear as iso-dense to hyper-dense ovoid lesions. Post-contrast scans reveal homogenous or heterogenous enhancement, a finding similar to that of the internal carotid artery, reflecting the high vascularity of the SFT [5,6]. In MRI studies, T1- weighted images of SFTs demonstrate homogenous iso-intense signal intensity, while T2- weighted images display heterogenous mixed iso-intensity to hypo-intensity [5,6].

Solitary fibrous tumors are generally benign, and prognosis is excellent for wholly resected neoplasms. Recurrence is possible, especially in cases of incomplete excision, as seen in this patient following prior orbitotomy for the lesion in April 2024. Most recurrent tumors are nonetheless benign, and complete excision significantly reduces the risk of further recurrence [3,5,6]. Due to the potential for distant metastasis, local invasion, or additional recurrences, long-term follow-up of patients is necessary regardless of the extent of resection of the orbital SFT.

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References

1. Abodunrin FO, Killeen RB (2024) Solitary Fibrous Tumors. In: StatPearls. Treasure Island (FL): StatPearls Publishing.
2. Alabdulrazaq ES, Gurnani B (2023) Orbital Solitary Fibrous Tumor. In: StatPearls. Treasure Island (FL): StatPearls Publishing.
3. Su GW, Perez N, Simons KB, Harris GJ (2007) Solitary Fibrous Tumor of the Sclera. Arch Ophthalmol 125: 1572-1574.
4. Russell D, Silkiss RZ, Seiff S (2024) Solitary fibrous tumor. Eyewiki. Rona Z Silkiss, MD FACS.
5. Luhar M, Sharma R, Balasubramanian S (2024) Solitary fibrous tumor of the orbit.
6. René C, Scollo P, O'Donovan D (2022) A review of solitary fibrous tumours of the orbit and ocular adnexa. Eye 37: 858-865.