

Orofacial pain and headaches associated with exfoliation glaucoma

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Glaucoma is the leading cause of blindness worldwide and is common among older adults.¹ Glaucoma is defined as elevated intraocular pressure (IOP) (> 22 millimeters of mercury) in association with ocular damage and is classified as open angle or closed angle, depending on the configuration of the anterior chamber angle.² Closed-angle glaucoma is a sight-threatening ophthalmic emergency. Patients typically have acutely painful red eyes, periocular headaches, vision loss, nausea, and vomiting, but extraocular symptoms and systemic manifestations such as headaches are the main symptoms in some patients.³ Pain is usually localized in the ocular region but may be referred to the temporal or hemifacial region, making the differential diagnosis somewhat difficult, as the pain may be similar to odontogenic, migrainous, and other forms of headaches, and to certain systemic disorders.⁴

Open-angle glaucoma, the most common type of glaucoma, is painless, usually does not cause headaches, nausea, or vomiting, and progresses slowly.⁵ Peripheral vision may begin to decrease, leading to blindness if the condition is not treated. Exfoliation syndrome (XFS) is a systemic, age-related ocular disease in which abnormal extracellular material is produced and accumulates in tissues.⁶ XFS is the most common identifiable cause of open-angle glaucoma. Exfoliation glaucoma may result in rapid elevation of IOP, which can cause headaches.⁷ In this article, we report a case of exfoliation glaucoma in a patient with orofacial pain.

ABSTRACT

Background and Overview. Exfoliation syndrome is the most common identifiable cause of open-angle glaucoma. The authors report a case of exfoliation glaucoma in a patient who had orofacial pain.

Case Description. A 77-year-old woman was treated at the orofacial pain clinic for left-sided facial pain and headaches of 7 months' duration. Her cataracts and open-angle glaucoma had been diagnosed approximately 3 years earlier. Her main symptoms were orofacial pain, eye redness, inflammation of the eyelids, and eyelid edema. Magnetic resonance imaging showed no evidence of intracranial or extracranial pathology. Hemicrania continua was considered as a possible diagnosis. Indomethacin was prescribed but did not affect her headaches. She then went to an ophthalmologist to rule out secondary headaches. Intraocular pressure was 13 millimeters of mercury in the right eye and 67 mm Hg in the left eye. The ophthalmologist made a diagnosis of exfoliation glaucoma, and the patient underwent surgical treatment for the glaucoma and cataracts. After surgery, she was free of symptoms, and intraocular pressure was 15 mm Hg in the left eye.

Conclusions and Practical Implications. During differential diagnosis, dentists need to consider intraoral and systemic conditions that can mimic odontogenic or orofacial pain disorders in the patient's medical history and that have a higher incidence associated with the patient's age.

Key Words. Exfoliation glaucoma; orofacial pain; intraocular pressure.

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CASE REPORT

A 77-year-old woman went to an orofacial pain clinic reporting left-sided maxillary molar pain, facial pain, and headaches of 7 months' duration. She reported eye

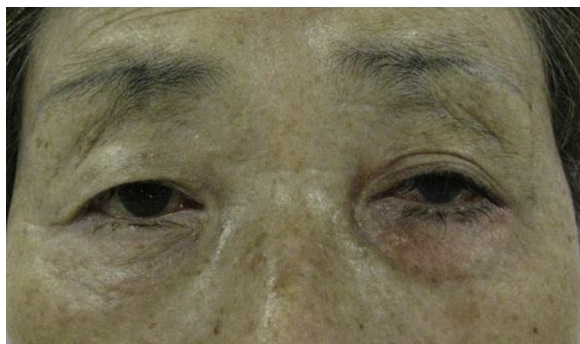


Figure 1. Extraoral examination revealing conjunctival injection, lacrimation, and eyelid edema in the left eye.

redness, inflammation of the eyelids, and eyelid edema on the left side during pain exacerbations. Three years earlier, her cataracts and open-angle glaucoma had been diagnosed. An ophthalmologist had prescribed glaucoma medications (bimatoprost eye drops and dorzolamide hydrochloride–timolol maleate ophthalmic solution) to be instilled in both eyes at bedtime. Bimatoprost reduces IOP by increasing the rate of aqueous humor flow. Dorzolamide hydrochloride–timolol maleate ophthalmic solution is a combination of a topical carbonic anhydrase inhibitor and a topical β -adrenergic receptor blocking agent, and it reduces IOP. The patient had been taking the medications for 3 years.

She later developed intermittent left facial pain and headaches and swelling in the infraorbital region. She consulted her dentist for treatment. The pain intensity was usually mild (2-3 on a numerical rating scale; maximum 10), but she reported occasional exacerbations of moderate intensity, accompanied by eyelid edema and ocular pain (5-6 on the same scale). Exacerbations of pain occurred 2 to 3 times per month and lasted from 3 to 5 days. During exacerbations, the pain changed to a sensation of pressure. An intraoral examination by a general dentist revealed no visible abnormality, and she was thus referred to our orofacial pain clinic.

On physical examination, her blood pressure was 140/80 mmHg, and her body temperature was 35.5°C. Examination of the temporomandibular joint revealed a painless active range of motion of 45 mm and no joint noises such as clicking or crepitation. Masticatory muscle palpation revealed no tenderness. The patient's medical history included diabetes mellitus, high cholesterol, and hypertension. She reported use of vildagliptin, olmesartan medoxomil and azelnidipine, and rosuvastatin calcium. Extraoral examination revealed mild conjunctival injection, lacrimation, and eyelid edema in the left eye, which the patient reported were ongoing for 5 months (Figure 1). Intraoral examination revealed no gingival tenderness on the edentulous sides of the maxillary left first or second molars and no percussion

sensitivity in the maxillary left second premolar. A panoramic radiograph showed no abnormal findings in the maxillary sinuses (Figure 2), and magnetic resonance imaging results showed no evidence of intracranial or extracranial pathology (Figures 3 and 4).

Hemicrania continua (HC) was considered, and her dentist prescribed indomethacin. However, her symptoms persisted, and 2 weeks later, she began to report eye mucus and blurred vision. Her left eye showed signs of progressive inflammation, and she visited the ophthalmology department again to rule out headaches secondary to an ophthalmic condition.

During the ophthalmologic examination, visual acuity was 30/50 for the right eye and 2/50 for the left eye, and IOP was 18 mm Hg in the right eye and 67 mm Hg in the left eye (normal IOP, ≤ 20 mm Hg). The ophthalmologist diagnosed exfoliation glaucoma and corneal edema from elevated IOP. The IOP immediately decreased to 41 mm Hg after administration of intravenous mannitol, and the pain subsided.

She used eye drops (bimatoprost, latanoprost, brimonidine tartrate, and dorzolamide hydrochloride salt plus timolol maleate) for 15 months, but the IOP in the left eye gradually increased. She underwent surgical treatment for glaucoma and cataracts, which she also had (cataracts are painless). After surgery, the patient report that she was free of symptoms. Postoperative IOP was 15 mm Hg in the left eye; visual acuity was 30/50 for the right eye and 30/50 for the left eye.

DISCUSSION

Compared with open-angle glaucoma, exfoliation glaucoma is associated with a worse clinical course and prognosis for several reasons.⁸ Mean IOP is higher in patients with XFS than in the general population and those with open-angle glaucoma. In addition, at a specific IOP, eyes with XFS are more likely to develop glaucomatous damage than are eyes without XFS. Optic nerve damage is more frequent and more severe at diagnosis, visual field damage and response to medications are worse, and surgical treatment is required more frequently.^{9,10}

Our patient's open-angle glaucoma was originally diagnosed. When she developed eye mucus and visual disturbances, with progressive inflammation of the left eye, she was again referred to the ophthalmology department, where exfoliation glaucoma was diagnosed.

Reports have described patients with orofacial pain secondary to closed-angle glaucoma. Hurwitz¹¹ reported a case of closed-angle glaucoma with conjunctivitis in a patient who had consulted a dentist for facial pain;

ABBREVIATION KEY. CH: Cluster headache. HC: Hemicrania continua. IOP: Elevated intraocular pressure. XFS: Exfoliation syndrome.

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