Oculoplastics Disorders
Primary Acquired Nasolacrimal Duct Obstruction
Orbital Inflammatory Syndrome

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Dear Colleagues,

As ophthalmologists, one of the most exciting facets of our profession is our role as problem-solvers. Some of our patients have typical complaints and clear signs pointing to their pathologies, while others have complex, multifactorial problems, often connected to underlying systemic conditions that require all of our clinical skills and knowledge to accurately diagnose and treat.

In this issue of eye Insights, we take a close look at two common oculoplastics disorders seen in ophthalmology practice: primary acquired nasolacrimal duct obstruction (PANDO) and orbital inflammatory syndrome (OIS). Inside, you’ll find key information about how PANDO and OIS are diagnosed and treated, guidance on when to refer a patient, and further reading.

Keep in mind that ophthalmic plastic surgery is a unique specialty that relies on a surgeon’s technical ability and artistic skill. For a list of doctors that specialize in this type of surgery, please visit the website for the American Society of Ophthalmic Plastic & Reconstructive Surgery.

We hope you find this issue of eye Insights useful in your practice. Back issues are available online at masseyeandear.org. If you have questions or comments, please email us at eyeinsights@meei.harvard.edu.

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TWO COMMON OCULOPLASTICS DISORDERS

Primary Acquired Nasolacrimal Duct Obstruction (PANDO)

• PANDO is a condition in which chronic inflammation and scarring block the tear drainage system without another identifiable cause for the obstruction, such as trauma, tumor, etc. Patients with PANDO usually seek help when tears overflow. Patients with obstructions are also at risk for infection of the nasolacrimal system.

Orbital Inflammatory Syndrome (OIS)

• OIS refers to noninfectious inflammation of the orbital tissues—the lacrimal gland (dacryoadenitis), extraocular muscles (myositis), and sclera (scleritis)—or diffuse inflammation and/or a combination of any of these tissues. The inflammation may be idiopathic or may be secondary to a bona fide inflammatory condition, such as sarcoidosis, granulomatosis with polyangiitis, IgG4-related disease, and others.

• Patients with OIS often seek help because their eyelids and the area around their eyes are red, swollen, and painful. The eye may be protruding. Vision problems, including double vision and a decrease of vision, can occur.
• The gold standard for diagnosis is irrigation of saline through the tear drainage system as a lacrimal cannulization through the conjunctiva into the nasal cavity confirms that the system is patent. Failure from the opposing punctum indicates an obstructions.

• Diagnosis of acute or chronic infection of the tear drainage system confirms a diagnosis of PANDO. This is diagnosed by visualizing an enlarged and inflamed lacrimal sac or discharge coming from the puncta where pressure is applied on the lacrimal sac.

• Manifestotic CT scan is considered for certain cases—such as young adults with a history of maxillofacial trauma and those with sinogenic or chronic sinusitis—according to the presence of sinus surgery may be appropriate.

• Nasoendoscopy may reveal problems in the nasal cavity requiring surgery, such as a deviated nasal septum, chronic rhinosinusitis, or concha bullosa (air pocket in the middle concha), tumor, or scarring.

• Another test for PANDO is to trace the movement of dye through the lacrimal drainage system in one of two ways: 1) dacryography, where dye is injected in the tear duct and traced with X-ray and/or CT scan, or 2) dacryoscintigraphy, where a radionuclide eye drop is placed in the conjunctival cul-de-sac and dye movement is followed with a gamma camera imaging.

PANDO

DIAGNOSIS

• As part of a thorough history, it’s important to ask about the use of medications associated with DSS, such as biophosphonates taken for the treatment of osteoporosis.

• A comprehensive ophthalmic evaluation is performed. Pain can be an important symptom of DSS, particularly in maxillary and dacryocystitis. It’s important to rule out infectious or orbital causes, which are the vast majority of cases originate from paranasal sinus.

• Most often an orbital CT scan with contrast will clearly image the orbit and paranasal sinuses and aid in the diagnosis. A CT scan is typically preferred as the initial imaging modality of choice as it is quickly obtained, has high useful resolution, and shows bone anatomy in detail that is important in cases of infection or malignancy. MRI can subsequently be obtained if needed to augment the workup.

• An orbital biopsy helps to confirm the diagnosis of DSS in cases in which other etiologies are not found with laboratory testing or other less invasive testing. The histopathology may demonstrate specific signs, such as granulomatous inflammation (as in either sarcoidosis or granulomatosis with polyangiitis) or a high number of IgG plasma cells (as in IgG4-related disease).

• To rule out infection or systemic diseases, physicians might coordinate tests at a clinic:

  - A complete blood count and basic metabolic panel
  - Thyroid studies: free T4, T3, thyroid peroxidase antibody (TP) thyroid-stimulating hormone (TSH), thyroid stimulating immunoglobulin (TSI), and thyrotropin-binding inhibitor immunoglobulin (TBI)
  - Tests for antineutrophil antibodies, antineutrophil cytoplasmic antibodies, angiotensin converting enzyme, rapid plasma reagent, rheumatoid factor, and speckled factor (1 spot) to rule out tuberculosis.

TREATMENT OPTIONS

• In very mild cases, observation may often be the first choice.

• Oral NSAIDs are commonly used as first-line therapy in mild cases.

• Systemic corticosteroid therapy (oral prednisone) is used in many cases of typical dacryoadenitis or myopathy. A taper is typically performed, especially for right-side patients, and is tailored to the patients’ improvement in signs and symptoms.

• Second-line immunosuppressive therapies (cyclosporine, cyclophosphamide, azathioprine) are used for patients with severe disease unresponsive to systemic corticosteroids as well as for sclerosing DSS.

• Other options include orbital radiation therapy and, very rarely, surgical debulking.

REFERRAL GUIDELINES

• All patients diagnosed with PANDO should be referred to an otolaryngologist and ophthalmologist in lacrimal surgery. Optometrists are also encouraged to refer PANDO suspects who require advanced testing for an accurate diagnosis.

• Any patient with sclerosing inflammation should be referred to an otolaryngologist. Treatment can be complex, encompassing therapies for systemic disease, as well as corticosteroids, surgery, and radiation.

• The orbit specialist typically coordinates care with other specialties, such as rheumatology, to meet all of the patient’s needs.

FURTHER READING


