The basic oculoplastic examination

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Introduction

As ophthalmologists, our typical examination routine is to test visual acuity, measure the intraocular pressure, and examine the patient with the slit lamp. However, in oculoplastic surgery, much of the examination occurs prior to placing the patient at the slit lamp. Here, I will outline my basic routine for eyelid, lacrimal, and orbital examinations. I modify this protocol depending on the symptoms and complaints of the patient and expand investigations if necessary.

Eyelid examination

A basic eyelid examination is useful in many situations to get an overview of the oculoplastic problem.

1. Note the position of the eyebrows, and whether there is activation of the frontalis muscle trying to compensate for a ptosis or dermatochalasis that obscures vision. When the eyebrows are lifted to the appropriate position, is there residual dermatochalasis?
2. Evaluate the upper eyelid shape and height. Normally the upper eyelid covers 1–2mm of the upper limbus. Deviation from this is documented with measurement of the margin-reflex distance (MRD1) (**Figure 1**).
3. Evaluate the levator function (LF) by measuring the distance of the upper eyelid margin from down gaze to up gaze. The eyebrow should be immobilized to get an accurate measurement.
4. Note if the lower eyelid sits at the lower limbus. Otherwise, measure the scleral show.
5. Are the eyelids in a normal position against the globe, or is there a malposition present?
6. Examine eyelid laxity and note if the canthal tendons are lax or if there is a reduced elasticity of the tarsal plates, such as in floppy eyelid syndrome.
7. Look for conjunctival changes, for example, trachomatous scars or cicatricial changes.
8. Finally, take a step back and look at the whole face. Is there a skin condition that may affect the eyelids, remaining facial weakness, or aberrant innervation after facial nerve paralysis? Does the patient have a heavy or underdeveloped midface that might pull the lower eyelids down?
9. In case of an eyelid mass, document the location, size, and whether it is mobile or attached to the surrounding tissues.

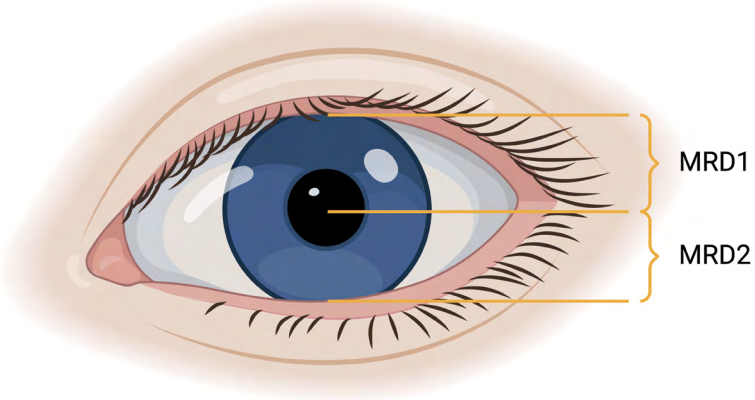

Figure 1. Marginal reflex distance (MRD) is measured between the pupillary light reflex to the upper eyelid margin (MRD1) and the lower eyelid margin (MRD2). MRD1 is normally 4-5mm and MRD2 5mm. Created by Tanya Cross using BioRender.com.

Lacrimal examination

This is performed when the patient complains of tearing, and there is no suspicion of an acute infection (dacryocystitis or canaliculitis). I never use the Jones I and II tests, dacryocystography, or dacryoscintigraphy. Epiphora refers to an overflow of tears caused by a tear drainage malfunction as opposed to lacrimation, which is a watery eye caused by increased tear secretion (reflex tearing).

1. Look at the patient when entering the room. Are there visible tears running down the cheek, and is there eczema on the lower eyelids indicating that the area is constantly wet? Does the patient always carry a tissue to wipe the tears?
2. Rule out causes of lacrimation such as eyelid malposition, trichiasis, blepharitis, and conjunctival or corneal problems.
3. Examine if there is an increased laxity of the eyelids, as this may cause reduced function in the active tear drainage.
4. Note the height of the tear meniscus and the presence of any conjunctivochalasis that may disturb it.
5. Look specifically at the puncta and whether they are positioned to allow the tears to drain, or if there is a medial lower eyelid ectropion, megalocaruncle, or kissing puncta.
6. Palpate over the lacrimal sac. If discharge can be expressed from the sac, a nasolacrimal duct obstruction is present. If there is a mass that extends superior to the medial canthal tendon, a lacrimal sac tumor or a sinus lesion is suspected, and imaging should be ordered.
7. Perform lacrimal irrigation and note if there is easy passage of fluid into the nose, if pressure must be applied (partial obstruction), or if there is reflux with or without debris (complete obstruction, proximal or distal to the sac).

Orbital examination

This is the most thorough examination routine and is used when the patient's history and symptoms indicate a possible orbital problem, if an orbital lesion has been incidentally found on imaging, or to follow the clinical course of a known orbital disease. Depending on the findings, often complimented by imaging, visual field testing, Optical Coherence Tomography (OCT) with examination of ganglion nerve cell layer, and/or laboratory tests, the following is performed.

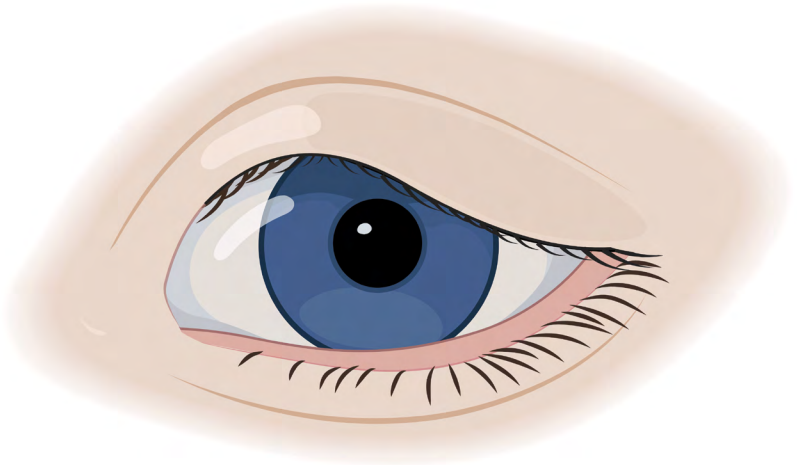

Figure 2. Illustration of S-shaped upper eyelid deformity commonly seen in lacrimal gland lesions. Created by Tanya Cross using BioRender.com.

1. Start with visual acuity, the red desaturation test, and pupillary reaction to get a feeling of the health of the optic nerve and visual pathway.
2. Check ocular motility and areas of perceived double vision to investigate whether the disease affects the extraocular muscles or restricts movement.
3. Measure proptosis (with an exophthalmometer) or other directions of globe displacement. This gives a clue as to where in the orbit the pathological change would be expected to be found.
4. Note any eyelid or periocular changes such as a lateral flare in thyroid eye disease, S-shaped ptosis in lacrimal gland lesions (**Figure 2**), edema, or signs of inflammation.
5. Palpate the eyelids and periocular region to detect any masses. If such is found, determine its size, shape, and position, and whether it is mobile or fixed to surrounding tissues. Also, note if there are any pulsations of the orbit.
6. Palpate the lymph nodes in the head and neck if a malignancy is suspected.
7. Finally, position the patient in the slit lamp. Examine the entire surface of the conjunctiva (don't skip everting the eyelids!), the anterior and posterior segments.