Disclosures

Paid consultant for:
Maculogix: Honoraria-Advisory Board
Sun Pharmaceuticals: Advisory Board/Speakers Bureau
Agenda

- Benign vs. Malignant lesions
- Benign Eyelid Lesions
  - Various types
  - Diagnostic criteria and differentials
  - Treatment and management options
- Malignant Eyelid Lesions
  - Various types
  - Diagnostic criteria and differentials
  - Treatment and management options

Eyelid Lumps and Bumps

- 15-20% of periocular skin lesions are malignant
- Benign vs malignant:
  - Benign lesions are:
    - Well circumscribed and possibly multiple
    - Slow growing
    - Less inflamed
    - Look “stuck on” instead of invasive and deep
Benign Eyelid Lesions

- Most common types of benign eyelid lesions include:
  - Squamous papillomas (skin tags) - most common
  - Hordeola/chalazia
  - Epidermal inclusion cysts
  - Seborrheic keratosis
  - Apocrine hidrocystoma
  - Capillary hemangioma (common vascular lesion of childhood)

Is it Benign?

- H: loss of hair bearing structures?
- A: asymmetrical?
- A: abnormal blood vessels (telangectasia’s)?
- B: borders irregular?
- B: bleeding reported?
- C: multicolored?
- C: change in the size or color of the lesion?
- D: overall diameter > 5 mm?
Benign Eyelid Lesions: Squamous Papilloma

- Most common benign lesion of the eyelid
- Also known as fibroepithelial polyp or skin tag
- Single or multiple and commonly involve eyelid margin

- Flesh colored and maybe:
  - sessile (no stalk) or pedunculated (with a stalk)

- Differentials:
  - seborrheic keratosis,
  - verruca vulgaris and intradermal nevus

- Treatment is excision at the base of the lesion.
  - Radiosurgery: Ellman
  - Cryotherapy
  - Chemical removal e.g. TCA
Radiofrequency (RF) Surgery

- Radiosurgery is the passage of high frequency radiowaves through soft tissue to cut, coagulate, and/or remove the target tissue
- Cuts and coagulates at the same time
- Nearly bloodless field
- Minimal biopsy artifact damage
- Quick and easy (to do and to learn)
  - Pressureless & bacteria-free incisions
- Minimal lateral heat
- Minimal Post-op pain
- Rapid healing
- Fine control with variety of tips

Benign Eyelid Lesions: Seborrheic Keratosis

- Also known as senile verruca
- Common and may occur on the face, trunk and extremities
- Usually affect middle-aged and older adults, occurring singly or multiple, greasy, stuck on plaques
Benign Eyelid Lesions: Seborrheic Keratosis

- Color varies from tan to brown and are not considered premalignant lesions
- Differentials include skin tags, nevus, verruca vulgaris, actinic keratosis and pigmented BCC
- Simple excision for biopsy or cosmesis or to prevent irritation.

Benign Eyelid Lesions: Hordeola

- Acute purulent inflammation
  - Internal occurs due to obstruction of MG
  - External (stye) from infection of the follicle of a cilium and the adjacent glands of Zeiss or Moll
- Painful edema and erythema,
Benign Eyelid Lesions: Hordeola

- Typically caused by Staph and often associated with blepharitis
- Treatment includes:
  - hot compresses (e.g. Bruder)
  - topical antibiotics (?)
  - possibly systemic antibiotics
    - Augmentin 875 mg BID x 7 days
    - Keflex 500 mg TID-QID x 7 days
- Treat concurrent blepharitis

ARMOR

- Antibiotic Resistance Monitoring in Ocular Microorganisms (ARMOR)
- Approximately 42% of isolates were determined to be MRSA
- Newer fluoroquinolones have better activity than earlier generations
- Besivance has the lowest MIC values of all the fluoroquinolones
- Vancomycin is drug of choice if MRSA present
- Azithromycin had very poor activity against Staph
Demodex

- Demodex is a natural part of human microbiome
- *Demodex folliculorum* live in hair follicles, primarily on the face, as well as in the meibomian glands of the eyelids;
- *Demodex brevis* live in the sebaceous glands of the skin.

Demodex

- *Demodex folliculorum* frequently occur in greater numbers in those with rosacea and this overabundance is thought to trigger an immune response or possibly certain bacteria associated with the Demodex
Treatments for Demodex

<table>
<thead>
<tr>
<th>Table 1 Summary of lid cleansers for Demodex</th>
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<tbody>
<tr>
<td>Cleanser</td>
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<tr>
<td>Cliradex® and Cliradex® Light (towelettes and foam)</td>
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<tr>
<td>OUST™ Demodex® Swabstick™ and OUST™ Demodex® Cleaner (premoistened pads)</td>
</tr>
<tr>
<td>OCuSOFT® Lid Scrub Plus (premoistened pads, Swabstick) and Avenova®</td>
</tr>
</tbody>
</table>


Preseptal Cellulitis

- Infection and inflammation located anterior to the orbital septum and limited to the superficial periorbital tissues and eyelids.
- Usually follows sinus infection or internal hordeolum (possibly trauma)
- Eyelid swelling, redness, ptosis, pain and low grade fever.
Differentiating Orbital vs. Preseptal

<table>
<thead>
<tr>
<th>FINDING</th>
<th>ORBITAL</th>
<th>PRESEPTAL</th>
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<tbody>
<tr>
<td>Visual Acuity</td>
<td>Decreased</td>
<td>Normal</td>
</tr>
<tr>
<td>Proptosis</td>
<td>Marked</td>
<td>Absent</td>
</tr>
<tr>
<td>Chemosis and Hyperemia</td>
<td>Marked</td>
<td>Rare/Mild</td>
</tr>
<tr>
<td>Pupils</td>
<td>RAPD</td>
<td>Normal</td>
</tr>
<tr>
<td>Pain and Motility</td>
<td>Restricted and Painful</td>
<td>Normal</td>
</tr>
<tr>
<td>IOP</td>
<td></td>
<td>Normal</td>
</tr>
<tr>
<td>Temperature</td>
<td>102 - 104</td>
<td>Normal/mild elevation</td>
</tr>
<tr>
<td>HA and Assoc. Symptoms</td>
<td>Common</td>
<td>Absent</td>
</tr>
</tbody>
</table>

Treatment: Orals for Preseptal, Often IV for Orbital

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Preseptal Cellulitis

- **Tx:**
  - Clavulin *(Augmentin)* 500 mg TID or 875 mg BID for 5-7 days
  - *Keflex* 500 mg QID 5-7 days
  - or if moderate to severe IV Fortaz (ceftazidime) 1-2 g q8h.
  - If MRSA possible, consider Bactrim/Septra
Penicillins: Augmentin

- **Augmentin** is amoxicillin with potassium clavulanate (clavulanic acid 125 mg).
- Clavulanate is a β-Lactamase inhibitor which reduces a bacteria’s ability to negate the effect of the amoxicillin by inactivating penicillinase (enzyme that inactivates the antibiotic affect).
- Dicloxacillin can also be used in infections due to penicillinase-producing staph.

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Penicillins: Augmentin

- **Augmentin** is very effective for skin and skin structure infections such as:
  - dacryocystitis,
  - internal hordeola,
  - pre-septal cellulitis.
- Treatment of:
  - otitis media,
  - sinusitis,
  - lower respiratory and urinary infections.
- Given prophylactically to dental surgery patients.
Penicillins: Augmentin

- It has **low**:
  - GI upset,
  - allergic reaction and anaphylaxis.
- Serious complications include:
  - anemia,
  - pseudomembranous colitis and
  - Stevens-Johnson syndrome.

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Penicillins: Augmentin.

**Adults:**
- 250-500 mg tab q 8hr (tid) (also available in chewable tablets and suspension)
- or 875 mg q 12hr (bid)
- 1000 mg XR: q12 hr and not for use in children <16

**Peds:**
- <3 mos 30mg/kg/day divided q12hrs using suspension
- >3 mos 45-90mg/kg/day divided q12hrs (otitis media 90mg for 10 days)
Cephalosporins

- Closely related structurally and functionally to the penicillins,
  - have the same mode of action,
  - affected by the same resistance mechanisms.
  - tend to be more resistant to B-lactamases.
- classified as 1st, 2nd, 3rd, 4th and now 5th generation based largely on their bacterial susceptibility patterns and resistance to B-lactamases.
- Typically administered IV or IM, **poor oral absorption**.

1st generation: cefadroxil (Duricef), cefazolin (Ancef), cephalexin (Keflex), and cephalothin
2nd generations: cefaclor (Ceclor), cefprozil, cefuroxime (Zinacef), cefotetan, cefoxitin
3rd generation: cefdinir (Omnicef), cefixime, cefotaxime (Claforan), ceftazidime (Fortaz), cefotibuten, ceftizoxime, ceftriaxone (Rocephin IM/IV).
4th generation: cefepime

**Omnicef, Keflex, Ceclor** (all orally administered) are effective against most gram positive pathogens and especially good for skin and soft tissue infections.
Cephalosporins

- **Keflex (cephalexin):**
  - treatment of respiratory, GI, skin and skin structure, and bone infections as well as otitis media
  - Adults: 250-1000 mg every 6 hours
    - typical dosing 500 every 6 hours
  - Children: 25-100 mg/kg/day divided 6-8 hours

Co-Trimoxazole (Bactrim/Septra)

- Combination of trimethoprim and sulfamethoxazole
  - shows greater antimicrobial activity than equivalent quantities of either drug alone.
  - Has broader spectrum of action than the sulfa’s and is effective in treating:
    - UTIs and respiratory tract infections
    - often considered for treatment of MRSA skin infections
Co-Trimoxazole (Bactrim/Septra)

Available:

- **Bactrim/Septra tablets:**
  - contains 80 mg trimethoprim and 400 mg sulfamethoxazole
  - dosing 2 tablets every 12 hours
- **Bactrim DS/Septra DS (Double Strength)**
  - contains 160 mg trimethoprim and 800 mg sulfamethoxazole
  - Dosing 1 tablet every 12 hours

Benign Eyelid Lesions: Chalazia

- Focal inflammatory lesion resulting from obstruction of a meibomian or Zeis gland
- Results in a chronic lipogranulomatous inflammation
Benign Eyelid Lesions: Chalazia

- May drain spontaneously or persist as a chronic nodule
- Recurrent lesions need to exclude a sebaceous gland carcinoma
- Treatment varies from:
  - hot compresses/massage,
  - intralesional steroid injection (triamcinolone (Kenalog®) or
  - surgical drainage
- **Latest:** IPL (Intense Pulsed Light)

Benign Eyelid Lesions: Capillary Hemangioma

- Most common vascular lesion in childhood (5-10% of infants)
- Females 3:2
- Periorbital may appear as a superficial cutaneous lesion, subcutaneous, deep orbital or combination
- 1/3 visible at birth, remainder manifest by 6 months
- 75% regress to some extent by 7 years
Benign Eyelid Lesions: Capillary Hemangioma

- Classic superficial lesion
  - strawberry lesion, appears as a red, raised, nodular mass which blanches with pressure
- Most common ocular complication is amblyopia
- regression is common, treatment is reserved for patients who have specific ocular, dermatologic or systemic indications for intervention.

Mainstay treatment includes the use of oral propranolol
- Recent protocols include use of topical timolol 0.25% for superficial hemangiomas
Benign Eyelid Lesions: Pyogenic Granuloma

- Most common acquired vascular lesion to involve the eyelids
- Usually occurs after trauma or surgery as a fast growing, fleshy, red-to-pink mass which readily bleeds with minor contact
Benign Eyelid Lesions: Xanthelasma

- Typically occurs in middle-aged and older adults as soft, yellow plaques on the medial aspect of the eyelids
- Hyperlipidemia is reported to occur in approx 50% of patients therefore screening recommended

Benign Eyelid Lesions: Xanthelasma

- Composed of foamy, lipid-laden xanthoma cells clustered around blood vessels and adnexal tissue within the superficial dermis
- Treatment includes:
  - surgical excision,
  - CO2 ablation and
  - topical trichloroacetic acid.
- Recurrence is common.
Benign Eyelid Lesions: Molluscum Contagiosum

- Common viral skin disease caused by a large DNA pox virus
- Infection usually from direct contact in children and sexually transmitted in adults
- Typical lesion appears as a raised, shiny, white-to-pink nodule with a central umbilication filled with cheesy material

Benign Eyelid Lesions: Molluscum Contagiosum

- Eyelid lesions may produce a follicular conjunctival reaction
- Patients with AIDS may have a disseminated presentation (30-40 each eyelid or a confluent mass)
- Usually spontaneously resolves 3-12 months but maybe treated to prevent spread by excision, incision and curettage, cryosurgery and electrodesiccation.
Which of the following lid nevi have the greatest chance to convert to a malignant melanoma?

1.

2.

3.

4.

Lid Nevi

- **Lid nevi:**
  - congenital or acquired
  - occur in the anterior lamella of the eyelid and can be visualized at the eyelid margin.

- The **congenital eyelid nevus** is a special category with implications for malignant transformation.

- With time, slow increased pigmentation and slight enlargement can occur.

- An **acquired nevus** generally becomes apparent between the ages of 5 and 10 years as a small, flat, lightly pigmented lesion.
Congenital Nevus

- The nevus is generally well circumscribed and not associated with ulceration.
- The congenital nevus of the eyelids may present as a "kissing nevus" in which the melanocytes are present symmetrically on the upper and lower eyelids.
  - Presumably this nevus was present prior to eyelid separation.

- Most nevi of the skin are not considered to be at increased risk of malignancy.
  - However, the large congenital melanocytic nevus appears to have an increased risk of malignant transformation of 4.6% during a 30 year period.
Acquired Lid Nevi

- Acquired nevi are classified as:
  - junctional (involving the basal epidermis/dermis junction), typically flat in appearance
  - intradermal (involving only the dermis), tend to be dome shaped or pedunculated
  - compound (involving both dermis and epidermis) tend to be dome shaped

Pre-Malignant Eyelid Lesions: Keratoacanthoma

- Appears as a solitary, rapidly growing nodule on sun exposed areas of middle-aged and older individuals
- Nodule is usually umbilicated with a distinctive crater filled with keratin
- Lesion develops over weeks and undergoes spontaneous involution within 6 mo to leave an atrophic scar
Pre-Malignant Eyelid Lesions: Keratoacanthoma

- Lesion on the eyelids may produce mechanical problems such as ectropion or ptosis.
- Differential SCC, BCC, verruca vulgaris and molluscum
- Many pathologists consider it a type of low grade SCC
- Complete excision is recommended as there are invasive variants

Pre-Malignant Eyelid Lesions: Actinic Keratosis

- Also known as solar or senile keratosis
- Most common pre-malignant skin lesion
- Develops on sun-exposed areas and commonly affect the face, hands and scalp (less commonly the eyelids)
- Predominately white males
Pre-Malignant Eyelid Lesions: Actinic Keratosis

- Appear as multiple, flat-topped papules with an adherent white scale.
- Development of SCC in untreated lesions as high as 20%.
- Management is surgical excision or cryotherapy (following biopsy).

Malignant Eyelid Lesions: Basal Cell Carcinoma (BCC)

- Most common malignant lesion of the lids (85-90% of all malignant epi eyelid tumors).
- 50-60% of BCC affect the lower lid followed by medial canthus 25-30% and upper lid 15%.
- Metastases is rare but local invasion is common and can be very destructive.
Malignant Eyelid Lesions: Basal Cell Carcinoma

- Diagnosis is initially made from its clinical appearance, especially with the noduloulcerative type with its raised pearly borders and central ulcerated crater
  - categorized into two basic types: noduloulcerative and morpheaform
  - The morpheaform variant is typically diffuse, relatively flat with indistinct borders. This variant is more aggressive and can be invasive despite showing less obvious features.

Malignant Eyelid Lesions: Basal Cell Carcinoma

- Definitive diagnosis made on histopathological examination of biopsy specimens
  - loss of adjacent cilia is strongly suggestive of malignancy and occurs commonly with basal cell carcinoma of the eyelid
- Surgery is generally accepted as treatment of choice
  - Mohs’ surgery technique
Malignant Eyelid Lesions: Squamous Cell Carcinoma (SCC)

- Much less common than BCC on the eyelid but has much higher potential for metastatic spread
- Typically affects elderly, fair-skinned and usually found on the lower lid

Malignant Eyelid Lesions: Squamous Cell Carcinoma (SCC)

- Presents as an erythematous, indurated, hyperkeratotic plaque or nodule with irregular margins
- Lesions have a high tendency towards ulceration and tend to affect lid margin and medial canthus
Malignant Eyelid Lesions: Sebaceous Gland Carcinoma

- Highly malignant neoplasm that arises from the meibomian glands, Zeis and the sebaceous glands of the caruncle and eyebrow
- Aggressive tumor with a high recurrence rate, significant metastatic potential and notable mortality rate
  - rates of misdiagnosis have been reported as high as 50%

Malignant Eyelid Lesions: Sebaceous Gland Carcinoma

- Relatively rare, 3rd most common eyelid malignancy
- Uncommon in the Caucasian population and represents only 3% of eyelid malignancies,
  - most common eyelid malignancy in Asian Indian population, where it represents approximately 40% or more of eyelid malignancies
Malignant Eyelid Lesions: Malignant Melanoma

- MM of the eyelid accounts for about 1% of all eyelid malignancies.
- Risk factors include congenital and dysplastic nevi, changing cutaneous moles, excessive sun exposure and sun sensitivity, family history, age greater than 20 and white.
- History of severe sunburns rather than cumulative actinic exposure thought to be a major risk factor.

The ABCDEs of Detecting Melanoma

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymmetry</td>
<td>Border</td>
<td>Color</td>
<td>Diameter</td>
<td>Evolving</td>
</tr>
</tbody>
</table>

**NORMAL**
- Symmetrical
- Borders are even
- One color
- Smaller than 1/4 inch
- Ordinary mole

**MELANOMA**
- Asymmetrical
- Borders are uneven
- Multiple colors
- Larger than 1/4 inch
- Changing in size, shape and color