EVERYTHING EYELID

EVALUATION AND BIOPSY DIAGNOSTICS OF CLINICALLY SEEN EYELID LESIONS

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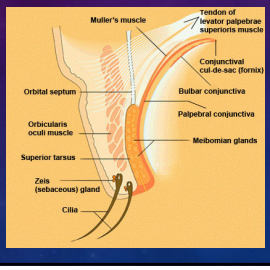
OBJECTIVES

- Review relevant lid anatomy
- Understand difference between incisional and excisional biopsy
- Review common special stains for pathology processing
- How do we classify eyelid tumors?
- Describe appearance and management of some clinically seen eyelid lesions

GENERAL EYELID ANATOMY

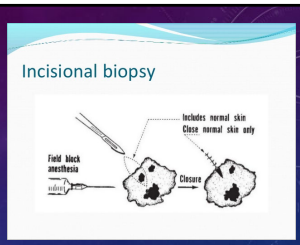


WILL I BIOPSY?

- Ulceration
- Bleeding
- Change in size, color, appearance
- Recurrence
- ? History of CA elsewhere

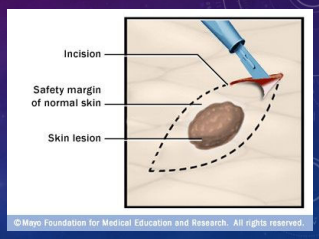
INCISIONAL BIOPSY

- Consists of portion of lesion sampled for diagnosis
- Usually performed on large lesions or
- Regions near small vital structures
- Shave biopsy is one type
- Only do shave biopsy if changes are in epithelium or superficial connective tissue
  - Ie seb keratosis or actinic keratosis

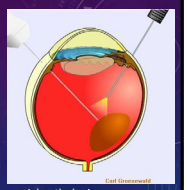


EXCISIONAL BIOPSY

- Includes the lesion and small rim of normal tissue
- Helps diagnostically and therapeutically
- Smaller lesions



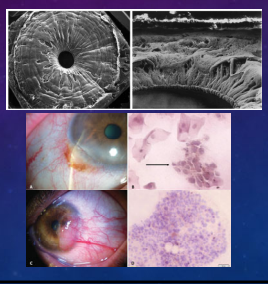
NEEDLE AND ENDOSCOPIC BIOPSIES



- Needle: Very small, thin core of tissue allows for prep of histopathologic material
- Drawbacks: Tumor seeding along path of needle, sampling error, limited material for special pathologic techniques
- Endoscopic: Limited in size, superficial, can contain crush and cautery induced artifacts

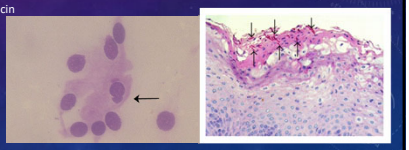
SPECIAL TECHNIQUES IN SPECIMAN PROCESSING

- Histochemical stains
- Cytology
- Electron Microscopy
- Cultures
  - Bacterial, fungal, viral
- Special fixation



SPECIAL HISTOPATHOLOGIC STAINS

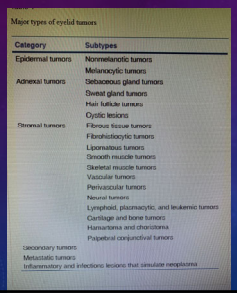
- Dimethylene blue (prev Alcian blue): mucin
- Fontana: melanin
- Giemsa: bacteria, mast cells
- PAS: fungi
- Ziehl-Neelsen: Acid-fast bacteria



EYELID TUMOR CLASSIFICATION

- As in other organs, tumors of eyelids can be classified by
- Tissue or cell of origin
- And as benign or malignant
- Table I on next page lists eyelid tumors according to their origin
- 85% of all eyelid tumors
  - Benign epithelial lesions, Basal cell carcinoma (BCC), cystic lesions, and melanocytic lesions
  - Squamous cell and melanoma are relatively rare (Thank goodness!)

TABLE I



Major types of eyelid tumors

Category	Subtypes
Epidermal tumors	Nonmelanocytic tumors
	Melanocytic tumors
Adnexal tumors	Sebaceous gland tumors
	Sweat gland tumors
	Hair follicle tumors
	Cystic lesions
Fibromal tumors	Fibrous tissue tumors
	Fibrohistiocytic tumors
	Lipomatous tumors
	Smooth muscle tumors
	Skeletal muscle tumors
	Vascular tumors
	Perivascular tumors
	Neural tumors
	Lymphoid, plasmacytic, and leukemic tumors
	Cartilage and bone tumors
	Hamartoma and choristoma
	Palpebral conjunctival tumors
Secondary tumors	
Metastatic tumors	
Inflammatory and infectious lesions that simulate neoplasms	

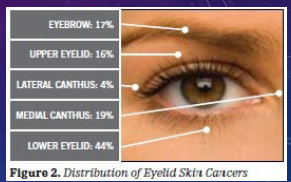
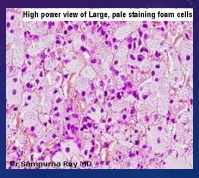


Figure 2. *Distribution of Eyelid Skin Cancers*

CLINICAL CASES

XANTHELASMA PALPEBRARUM (XP)

- 4% Prevalence
- Peak age 40s, 50s
- Localized accumulation of lipid deposits on eyelids
- Appear as soft, symmetrical yellow papules and plaques



XP

- 50% cases indicate underlying hyperlipidemia
- <40 y.o., r/o inherited disorders
- Presence=Risk of M.I., ischemic heart disease, severe atherosclerosis, death
- Arcus Senilis of cornea is not an independent predictor of risk

XP TREATMENT

- Multiple modalities described in literature
- TCA (trichloroacetic acid 70%) for smaller lesions
- Repeatedly can lead to scarring and pigmentation
- Radiofrequency ablation
- Laser ablation including CO_2 laser

XP TREATMENT

- Surgery still mainstay
- Recurrence does occur
- Depends on incomplete excisions
- Upper and lower lid involvement esp of
- Deep dermal layers

CLINICAL CASES

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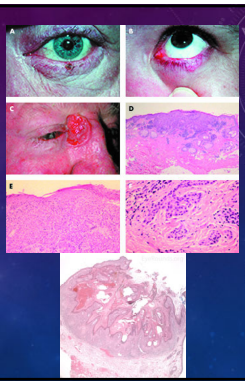
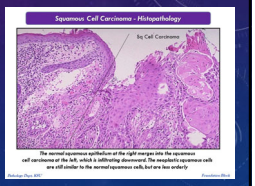
DIAGNOSIS

- Well-differentiated squamous cell carcinoma,
- Keratoacanthoma type extending to biopsy margins



SQUAMOUS CELL CA

- Invasive epithelial malignancy with keratinocytic differentiation
- Potentially lethal
- 5-10% of all eyelid malignancies
- 2nd most common behind Basal cell
- Very rare: .09-2.42 cases per 100,000

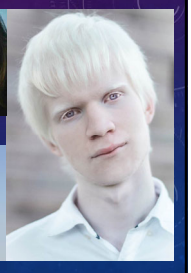


SQUAMOUS CELL CA

- Feature: Extension into underlying dermis
- Actinic keratosis, Bowen's disease, Radiation dermatoses are all precursors
- Usually lower lid
- Painless nodular or plaque-like lesions with irregular rolled edges, rough patches, fissuring or ulceration of skin
- Can mimic Basal Cell CA

SQUAMOUS CELL CA

- Extrinsic risks:
  - UV light/actinic damage
  - Exposure to arsenic, hydrocarbons, radiation, or immunosuppressive drugs
- Intrinsic risks:
  - Albinism
  - Preexisting chronic skin lesions
  - Genetic disorders (xeroderma pigmentosa)



SQUAMOUS CELL CA

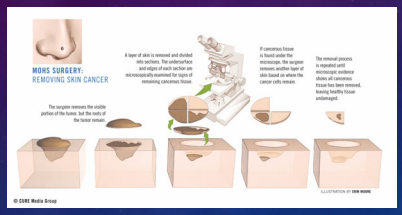
- Perineural spread needs post-op radiotherapy
- Orbital invasion is rare but needs exenteration (removal of eyeball and surrounding tissues—mm, nerves, fat) and radiation therapy
- Patient needs to be warned of risk of recurrence—same site or elsewhere

Figure 1: Orbital exenteration defect of the left side

SQUAMOUS CELL CA TREATMENT

- Planned excision with frozen-section control (of the margins)
- Moh's technique (see next slide)
- Both remove entire tumor along with safety zone of normal appearing tissue from the margins
- Cosmetic surgical repair to return eyelid function and cosmesis

MOH'S PROCEDURE



CLINICAL CASES

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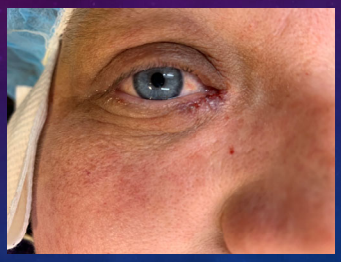
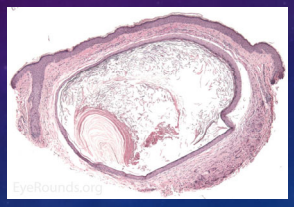


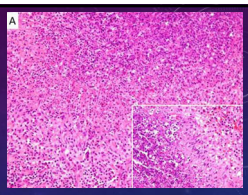
DIAGNOSIS

- Benign ductal cyst



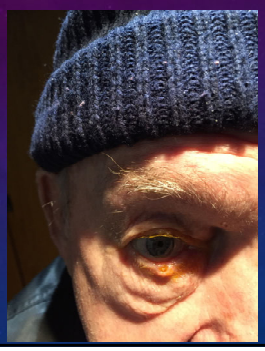
CLINICAL CASES

DIAGNOSIS



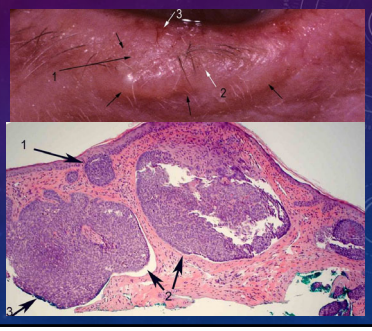
- Large irregular confluent necrotizing granulomas with surrounding histiocytes
- Stains for acid fast and fungal organisms negative
- No malignant features identified

CLINICAL CASES



DIAGNOSIS

- Basal Cell Cancer



BASAL CELL CA

- Originate as a neoplastic transformation of the basal cells of the epidermis
- 60-80 y.o., esp fair-skinned
- Most common form of skin cancer
- App 4.3 million cases of BCC are diagnosed in the U.S. each year
- BCC constitutes 90% of malignant eyelid tumors
- >50% on the lower lid (eyebrow may confer protection for upper lid)

BASAL CELL CA

- Localized nodular/noduloulcerative subtype is more classic
  - 75% of all BCC
  - Central crater with pearly rolled margins
- Less commonly seen: diffuse morpheaform or sclerosing type (no obvious ulceration)

BASAL CELL CA TREATMENT

- Planned excision with frozen section control of the margins
- Moh's technique
- Both remove entire tumor along with safety zone of normal appearing tissue from the margins
- Cosmetic surgical repair to return eyelid function and cosmesis
- Risk of recurrence
- If ignored, need more aggressive treatments (referring back to squamous cell slides—post-op radiotherapy and more)

CLINICAL CASES: THOUGHTS?

EVERYTHING EYELID

- Thank you for your attention. Questions?