A 66 yo WM is found to have a conjunctival lesion OS suspicious for CIN. Diagnosis is confirmed, and recession of the lesion is tracked with the aid of anterior segment spectral domain OCT.

I. Case History:

- Patient Demographics: 66 yo WM
- Chief Complaint: New patient presenting for diabetic eye exam.
- Ocular History: No h/o ocular trauma, surgery, or malignancy
- Medical History
  - Type II Diabetes Mellitus
  - Hypertension
  - No h/o skin cancer
  - No h/o smoking
- Medications: Metformin, HCTZ/Triamterene, Atenolol

II. Pertinent Clinical Findings

- Clinical
  - Anterior segment exam OS reveals a gelatinous conjunctival lesion inferotemporally with large feeder vessels and obscured anatomy below, mobile over sclera, 3.5mmVx4.5mmH with 0.5mm corneal involvement, hairpin vessels at leading edge
- Imaging:
  - Spectral Domain Anterior segment OCT reveals a thickened, hyperreflective limbal lesion inferotemporally extending onto the cornea localized to the epithelial layer and not invading bowman's layer. The abnormal epithelial layer abruptly changes to normal epithelium outside the lesion. OCT was used on successive exams to monitor recession of the lesion with treatment
  - Anterior segment slit lamp photography as well as IR photos with OCT were utilized to aid in diagnosis and f/u of the lesion

III. Differential Diagnosis

- Primary:
  - Conjunctival Intraepithelial Neoplasia
- Secondary:
IV. Diagnosis and Discussion

Conjunctival intraepithelial neoplasia (CIN) is characterized clinically as an elevated, gelatinous, papilliform limbal lesion that is freely mobile over the sclera and has characteristic tufts of blood vessels. Often the cornea is involved revealing a thickened, opaque epithelium. This dysplasia is limited to the epithelial layer of the ocular surface, not invading the layers below. It is found most commonly in older males and is associated with fair skin, UV radiation, as well as a history of actinic skin lesions.

Unique Features in this Case:

Before the advent of anterior segment OCT, CIN was diagnosed clinically and confirmed with histopathologic examination of excised tissue, revealing a thickened epithelial layer with an abrupt transition from abnormal to normal epithelium. OCT allows for high definition, cross sectional imaging of these lesions that are comparable to histopathologic specimens, as described in this case. In addition, subclinical, microscopic disease may be missed on clinical exam and biopsy if not included in the excised tissue. Biopsy also runs the risk of conjunctival scarring and limbal stem cell deficiency. In this case, diagnosis was confirmed and post treatment resolution was tracked with anterior segment OCT, avoiding any invasive procedures and allowing for high resolution imaging of the lesion.

V. Treatment and Response to Treatment

Dramatic improvement and resolution was seen using topical interferon alfa-2B 1MU/ML four times a day over a 6 month period of time. Anterior segment OCT was utilized to track the regression of the lesion as well as serial slit lamp photography. At 6 months, anterior segment OCT reveals a normal epithelial layer at the location of the lesion indicating successful treatment.

References:


VI. Conclusions

Anterior segment SD OCT allows for lesions such as CIN to be accurately diagnosed and managed in a non-invasive way within an optometric setting. Specific features of CIN can be visualized with anterior segment OCT, and have been shown to correlate well with histopathologic specimens, allowing for CIN to be distinguished from other malignancies. In addition, it can identify small, residual areas of neoplasia that clinical exam and biopsy might miss, allowing for proper treatment and management of the condition.