

# International Conference on Eye Disorders and Treatment

July 13-15, 2015 Baltimore, USA

## Incidence of squamous neoplasia in pinguecula and pterygium : Survey in a low ultraviolet exposure area

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**Purpose:** Pinguecula and pterygium (P/PT) are usual, surgically removed conjunctival lesions mainly related to sunlight exposure. Ocular surface squamous neoplasia (OSSN) represents a broad spectrum of lesions starting as dysplasia and evolving into squamous cell carcinoma of the conjunctiva. The incidence of OSSN features in P/PT has been described in some high ultraviolet (UV) light exposure areas, including Sydney, Australia (5%) and Florida, USA (1.8%). The aim of this study is to determine the incidence of unsuspected OSSN and melanocytic lesions (ML) in P/PT in a low UV area (Montreal, Canada).

**Methods:** All cases received between 1993 and 2013 with a clinical diagnosis of P/PT from the Henry C. Witelson Ocular Pathology Lab, McGill University, Montreal, Canada were reviewed. Demographic data were retrieved to correlate with the histopathological diagnosis. Identified OSSN and ML in P/PT were evaluated according to the Armed Forces Institute of Pathology (AFIP) classification.

**Results:** Two hundred and seventeen cases were clinically diagnosed as PT (91.13%) and 21 as P (9.87%); 56.54% of all P/PT patients were male. The average age at diagnosis was  $53.4 \pm 15.54$  years. The overall incidence of OSSN in these P/PT cases was 6.65% (P: 19.04% PT: 5.55%); 56.25% of this cohort were female. The average age of patients with P/PT and OSSN was similar to non-OSSN P/PT patients ( $P > 0.05$ ). The OSSN were diagnosed as conjunctival intraepithelial neoplasia (CIN) I (68.75%), CIN II (12.5%), CIN III (12.5%), and actinic keratosis (6.25%). ML included one primary acquired melanosis without atypia and one with mild atypia (a 41-year old woman and a 60-year old male, respectively).

**Conclusion:** An unexpectedly high association of ocular surface squamous neoplasia with pinguecula and pterygium was identified. No correlation with age was found with respect to this finding. The relatively high rate of dysplasia in a low UV index area challenges the concept that UV is the main cause of this disease. This finding also indicates that all P/PT samples should be submitted to histopathology for final diagnosis.

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