

ABSTRACT

BACKGROUND:

associated with better adherence and a decreased risk of treatment failure. The use of clinician pill counts should be further studied as an adherence promoter through a randomized clinical trial.

OBJECTIVE:

To examine the reliability of clinical examination and in vivo confocal microscopy (IVCM) in distinguishing ocular surface squamous neoplasia (OSSN) from benign conjunctival lesions.

DESIGN:

Case-control study.

PARTICIPANTS:

Sixty individuals with conjunctival lesions (OSSN and benign) and 60 age-matched controls with normal conjunctiva presenting to Kilimanjaro Christian Medical Centre, Moshi, Tanzania.

METHODS:

Participants were examined and photographed, and IVCM was performed. Patients with conjunctival lesions were offered excisional biopsy with histopathology and a human immunodeficiency virus (HIV) test. The IVCM images were read masked to the clinical appearance and pathology results. Images were graded for several specific features and given an overall categorization (normal, benign, or malignant). A group of 8 ophthalmologists were shown photographs of conjunctival lesions and asked to independently classify as OSSN or benign.

MAIN OUTCOME MEASURES:

Comparison of the histopathology diagnosis with the clinical and IVCM diagnosis.

RESULTS:

Fifty-two cases underwent excisional biopsy with histopathology; 34 were on the OSSN spectrum, 17 were benign, and 1 was lymphoma. The cases and controls had comparable demographic profiles. Human immunodeficiency syndrome infection was more common in OSSN compared with benign cases (58.8% vs. 5.6%; odds ratio, 24.3, 95% confidence interval [CI], 2.8-204; $P = 0.003$). Clinically, OSSN lesions more frequently exhibited feeder vessels and tended to have more leukoplakia and a gelatinous appearance. Overall, the ophthalmologists showed moderate agreement with the histology result (average kappa = 0.51; 95% CI, 0.36-0.64). The masked grading of IVCM images reliably distinguished normal conjunctiva.

However, IVCN was unable to reliably distinguish between benign lesions and OSSN because of an overlap in their appearance ($\kappa = 0.44$; 95% CI, 0.32-0.57). No single feature was significantly more frequent in OSSN compared with benign lesions. The sensitivity and specificity of IVCN for distinguishing OSSN from benign conjunctival lesions were 38.5% and 66.7%, respectively.

CONCLUSIONS:

In East Africa, conjunctival pathology is relatively common and can present significant diagnostic challenges for the clinician. In this study, neither clinical examination nor IVCN was found to reliably distinguish OSSN from benign conjunctival pathology because of an overlap in the features of these groups. Therefore, IVCN cannot currently replace histopathology, and management decisions should continue to rely on careful clinical assessment supported by histopathology as indicated.