White-Light and Laser Confocal Microscopic Findings of Rabbit Conjunctiva


ABSTRACT

BACKGROUND AND OBJECTIVE: To report laser and white-light confocal microscopic findings of ex vivo rabbit conjunctiva to investigate the potential application of these confocal microscopes as diagnostic devices for normal and pathologic conjunctiva.

MATERIALS AND METHODS: Three male albino rabbits were killed and six eyeballs were removed with as much bulbar conjunctiva as possible. The bulbar conjunctiva approximately 5 mm away from the limbus was then subjected to an ex vivo laser and white-light confocal microscopic analysis.

RESULTS: Using laser confocal microscopy, conjunctival epithelial cells, subepithelial conjunctival vessels, and sclera were clearly observed. By contrast, white-light confocal microscopy yielded images of conjunctival epithelium, subepithelial layers, and sclera that were not clearly defined.

CONCLUSIONS: This study indicates that laser confocal microscopy has a superior ability to visualize ex vivo, non-fixed conjunctiva when compared with white-light confocal microscopy. It also suggests that the laser confocal microscope might be a useful, non-invasive, in vivo, quasi-cytological? device for observing and diagnosing the conjunctival condition in humans.