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Diagnosis of Acanthamoeba Corneal Infection by Impression Cytology

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Purpose: To describe three cases of corneal infection due to *Acanthamoeba* on which was possible to detect *Acanthamoeba* cysts by corneal impression cytology (IC) technique. **Methods:** Three patients referred to the External Eye Disease Laboratory in 2004 with superficial corneal alterations were submitted to corneal specimen's collection by IC filter paper to investigate the presence of *Acanthamoeba* cysts. Two IC samples were obtained from each patient and were stained by PAS, Hematoxylin and Papanicolaou. Routine microbiologic investigation and culture was also performed by corneal scraping. **Results:** Positive culture and IC for *Acanthamoeba* was observed in all patients while smears with Giemsa stain was positive in two. By IC *Acanthamoeba* cysts were observed among sheet of corneal epithelial cells and as an isolated cell. The organisms could be easily recognized because of their shape and double wall. Cysts were also found in the superficial epithelium in one of these patients after treatment while corneal scraping did not reveal any cyst. Histopathology revealed cysts in the epithelium and stroma in a transplanted cornea in one of these patients. **Conclusion:** The first description of IC as a diagnostic method for *Acanthamoeba* keratitis occurred recently. In this study corneal IC successfully detected *Acanthamoeba* spp cysts in these patients with only superficial involvement. IC as a non invasive technique can be used to facilitate early recognition of *Acanthamoeba* infection playing a useful role to follow-up of the disease.