BACKGROUND: Carcinoma-associated retinopathy (CAR) is a rare paraneoplastic syndrome characterized by diffuse retinal photoreceptor degeneration in the presence of an epithelial tumor. We report on three patients, who developed paraneoplastic retinopathy in the presence of breast carcinoma and a cervical carcinoid tumor. MATERIALS AND METHODS: In addition to biomicroscopic, psychophysical, electrophysiological and angiographic examinations, serum samples were obtained for immunohistochemical staining of human retina. RESULTS: Ring-shaped visual field defects with statokinetic dissociation and abnormal rod and cone responses were found. Immunohistochemical findings included reactions at the level of the inner segments of the photoreceptors, the outer nuclear layer and the outer plexiform layer in absence of anti-recoverin antibodies. CONCLUSIONS: CAR should be considered in the differential diagnosis of visual loss in presence of tumors other than small-cell carcinoma of the lung. The presence of antiretinal antibodies is compatible with a tumor-induced immune response to epitopes shared by both the tumor and retinal tissue. Apparently, various retinal proteins may function as autoantigens.