

Abstract:

Propionibacterium acnes has been described as a causative agent of postoperative endophthalmitis. This gram-positive, immotile, non-spore-forming bacterium is highly pleomorphic and grows under conditions of low to no oxygen concentration. It is commonly found on the skin at the openings of sebaceous glands and on hairs. A near-symptomless postoperative endophthalmitis occurs particularly when Propionibacteria are enclosed in the capsular bag. We investigated to what extent the number of P. acnes in the conjunctival sac can be reduced by preoperative disinfection with polyvidone iodine (1%).

PATIENTS AND METHODS: A total of 261 patients with intrabulbar surgery had two conjunctival swabs taken: the first immediately prior to preoperative preparation in the operating theatre, following in-patient application of antibiotic eye drops (Polymyxin-B-sulfat, Neomycinsulfat and Gramicidin in combination); the second swab was taken after disinfection with polyvidone iodine before opening the conjunctiva.

RESULTS: Of the 261 swabs, 60 (23%) taken prior to polyvidone iodine application were positive for Propionibacterium acnes. Following polyvidone iodine treatment, a further 5 (1.9%) remained culture-positive. After disinfection, 55 (92%) of the 60 positive swabs for Propionibacterium acnes remained culture-negative.

CONCLUSIONS: We concluded that a significant reduction of P. acnes can be achieved by preoperative application of polyvidone iodine (1%) ($P < 0.001$).