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Corneal Ulceration Caused by Penicillin-Resistant
Neisseria gonorrhoeae

To the Editor.—Corneal ulceration due to penicillin-resistant Neisseria gonorrhoeae is described. The organism demonstrated a slow growth pattern with high virulence. The bacteriologic workup is discussed in the context of currently available techniques.

Report of a Case.—A 21-year-old man presented to St Paul’s Eye Hospital, Liverpool, England, in June 1986 with purulent conjunctivitis in his right eye. The conjunctiva and eyelids were moderately chemosed and the cornea showed diffuse punctate epithelial keratitis. Bacterial, chlamydial, and herpes simplex virus swabs were taken. Gram’s stain showed occasional gram-negative cocci/bacilli and polymorphs. Haemophilus influenzae or Pseudomonas aeruginosa was tentatively thought to be the causative organism. Treatment was started with drops of gentamicin sulfate, 0.3%, and penicillin G sodium, 20,000 U/mL, in the right eye and flouxacinil sodium, 250 mg four times daily orally. The patient’s condition deteriorated, with the development of a central superficial corneal ulcer three days after the commencement of treatment and a crescentic supranasal marginal ulcer six days after the commencement of treatment.

Cultures indicated a slowly growing Neisseria organism that was not typical N gonorrhoeae. Treatment was changed to drops of trimethoprim, 1 mg/mL, polymyxin B sulfate, 10,000 U/mL, and chloramphenicol, 0.5%, in the right eye; administration of the topical penicillin was discontinued. After eight days of treatment, sugar fermentation studies confirmed that the organism was a slow-growing N gonorrhoeae. Sensitivity studies showed the organism to be resistant to penicillin but sensitive to chloramphenicol.

The marginal corneal ulcer had perforated at its base, and the patient underwent a corneal patch graft.

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Fig 2.—Photomicrograph of Propionibacterium acnes from an membrane culture plate showing dense accumulation of pleomorphic, rod-shaped organisms cultured directly from removed lens capsular sac material (Gram's stain, original magnification ×500).
Comment.—Neisseria gonorrhoeae is a gram-negative intracellular diplococcus that is differentiated from other Neisseria species by antigen and sugar fermentation studies.

 Conjunctival scrapes were inoculated directly onto blood and chocolate agar culture plates, which were incubated at 37°C. The chocolate agar plate was placed in a moist atmosphere containing 5% carbon dioxide. On pure subcultures of the gonococcus, sugar fermentation studies indicated that it only fermented glucose.

 The delay involved in obtaining pure subcultures has led to empirical treatment being started based on the results obtained from Gram's stains. In situations in which previous treatment has been instituted or inadequate culture material has been collected, Gram's stains may be both misleading and unreliable. Intracellular gram-negative diplococci could be Neisseria meningitidis, and extracellular gram-negative diplococci could be either pathogenic or nonpathogenic strains of Neisseria.

 Monoclonal antibody tests directed against the gonococcal outer-membrane proteins can be performed directly on smears taken from conjunctival discharge, providing a specific diagnosis in the same time it takes to perform Gram's stain.

 Sensitivity studies have become mandatory because of the increased prevalence of penicillin-resistant organisms.

 The high incidence of associated genital chlamydial infection in these patients makes full systemic bacteriologic investigation mandatory.

 The combined attributes of slow growth (it was eight days before antibiotic sensitivity results were available) and high virulence in this case are unusual and a cause for concern. Insufficient culture material was available to obtain antigenic studies on the conjunctival smear, which contributed to the delay in diagnosis. The rapid involvement of the cornea (four days from the onset of infection) meant that optimal antibiotic treatment could not be established (it was six days from the onset of ulceration to perforation).

 The presence of penicillin-resistant strains along with the emergence of highly virulent organisms showing slow growth patterns may make corneal involvement a more common event in the future.

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**Corneal Edema as a Complication of a Loose Retinal Tack**

To the Editor.—Retinal tacks represent a new technique of retinal fixation that is useful in complicated retinal detachments such as large tears and retinotomies. Tacks are made of plastic, nonmagnetic metallic alloy, or titanium. Little is known about side effects of tacks retained in human eyes. Intraoperative complications of tack insertion include retinal tears, choroidal and retinal hemorrhages at the site of penetration, and slippage of the tack. Tacks may dislodge up to nine months after insertion: three of 53 tacks became loose in one series.

 Postoperative complications from the intrusion of retinal tacks have included atrophy of the retinal pigment epithelium; retinal phlebitis; vitreous hemorrhage; focal corneal, iris, and retinal injuries; and mild corneal edema. We report a case of a free-floating tack complicated by severe corneal edema. The edema resolved after removal of the loose tack.

**Report of a Case.**—A 45-year-old man underwent repair of a giant supertemporal retinal tear in the right eye two months after an uncomplicated extracapsular cataract extraction. Pars plana vitrectomy and posterior capsulotomy were accomplished. Three tacks were placed at the 9-, 10-, and 12-o'clock positions to fixate the posterior flap of the tear over a 360° hard silicone buckle. A mixture of air and octafluoropropane was used to fill the vitreous cavity. Two weeks postoperatively, the tack at the 12-o'clock position had only the tip embedded in the retina. From three to eight weeks postoperatively, the tack was immobile and lying flat on the surface of the retina in the same location. Three months postoperatively, a small localized detachment around the tack at the 12-o'clock position was noted in the area of the buckle. The area was surrounded with laser marks and the detachment resorbed. Eight months postoperatively, the tack was still in the same position. The patient presented nine months postoperatively complaining of blurred vision and seeing the "shadow of a tack." His best corrected visual acuity was 20/60. Mild bedewing of the cornea and inferior folds in Descemet's membrane were noted. The patient was admitted for removal of the wandering tack, which assumed several positions, including the inferior part of the angle structures. Over the next day, the cornea decompensated with severe central stromal swelling and large folds in Descemet's membrane (Figure). Visual acuity was counting fingers. The tack was removed through a pars plana incision, and the cornea cleared gradually. The best corrected visual acuity was 20/80 four months after tack removal.

**Comment.**—Retinal tacks can provide a valuable means of intraocular mechanical retinal fixation during the repair of complicated retinal detachments. Severe corneal edema is yet another complication of loose retinal tacks and supports the contention that they should be removed at the conclusion of surgery if prolonged retinal fixation is not required.

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**Acanthamoeba Keratitis**

Masquerading as Corneal Homograft Rejection

To the Editor.—Acanthamoeba keratitis is a rare but increasingly recognized entity. This disease has been associated with trauma, soft contact lens wear, and use of homemade saline solution. The following case report represents Acanthamoeba keratitis occurring postoperatively in a corneal homograft that was associated with a Saturn-style contact lens.

**Report of a Case.**—A 38-year-old man who underwent uncomplicated penetrating keratoplasty...