Corneas and Cousins
Lessons from Saudi Arabia

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CONFLICT OF INTEREST

• I have no relevant conflict of interest to disclose
• Most of this presentation is off-label
WHAT CAN A WESTERNER TEACH (AND LEARN) IN SAUDI ARABIA?
KNOW THE LANDSCAPE-
EPIDEMIOLOGY MATTERS
DISEASES MORE COMMON IN ARAB WORLD COMPARED TO NORTH AMERICA

- Keratoconus
- VKC
- Congenital glaucoma
- Exfoliation syndrome
- Pigmentary retinopathies
- Diabetes
- Trachoma
IF NECESSITY IS THE MOTHER, STRESS IS THE MOTHER-IN-LAW OF INVENTION

Exposed Nylon Suture Tag After Secondary IOL
AUTOLOGOUS SCLERAL FLAP
WHAT HAPPENS WHEN YOU COMBINE INDIGENOUS PEOPLE AND WESTERN DIET?
DIABETIC RETINOPATHY - A COMING STORM

• DM Prevalence 23.9%

• Usual issues:
  – Access to care
  – Public education
  – Allocation of resources

• Obvious need for prevention, efficient screening and access to treatment
RETEVAL AS A FIRST LINE SCREENING TOOL FOR DIABETIC RETINOPATHY

- Hand-held flicker ERG
- 400 patients from the KKESH screening clinic
- Fundus photos as gold standard
- Sensitivity 95.4%
- Specificity 17.5%

OTHER UNINTENDED CONSEQUENCES OF CULTURAL CHANGE: HOW DO YOU TELL THE FELLOWS APART?
KERATOCONUS

• Frequently seen in younger patients
• Commonly with Vernal (VKC)
• Does VKC influence the response to crosslinking?
RETROSPECTIVE STUDY: CROSSLINKING IN VKC OR NON-VKC PEDIATRIC PATIENTS

- 87 eyes of 58 patients <18 years of age
- All with 2 or more years of followup
- Dresden protocol crosslinking
- No difference in adverse events
- No difference in rate of progression
- Overall higher rate of progression in children (17.2%), as reported by others
MORE KERATOCONUS

- Home of the Anwar Big Bubble technique
- Few locally-sourced donor corneas
- Penetrating vs. lamellar?
- Best lamellar technique?
  - Dissection technique
  - Size of graft
OBSERVATIONS ON KERATOPLASTY
(A SYNTHESIS OF THE LITERATURE AND
“THINGS I THINK I KNOW”)

• Death to surgery time always >7 days
• Larger graft = better refractive outcome
• Larger graft = fewer recurrences of KCN
• Big bubble = risk of conversion to PKP
• Large PKP = higher risk of rejection
• So the best keratoconus surgery?
  – Large lamellar graft with low rate of PKP
MANUAL LAMELLAR FRACTURING DISSECTION, OR “FRACKING”

- Goal of <100 microns recipient stroma
- Manual tension “fractures” the stroma, allowing Pre-Descemet’s dissection
- Large grafts with low rate of conversion to penetrating keratoplasty
MANUAL FRACTURING “FRACKING” KERATOPLASTY
“FRACKING” MANUAL FRACTURING LKP
TRACHOMA

• WHO “SAFE” Strategy
  – Surgery for trichiasis
  – Antibiotics
  – Facial cleanliness
  – Environmental improvement
ELIMINATION OF TRACHOMA IN KSA-“WHO” GETS THE CREDIT?

• 1970 Most Saudis lived in rural areas
• Trachoma was endemic
• Dramatic increase in GDP in 1970’s
  – Now 80% of Saudis live in urban areas
• 1980’s Trachoma eradication programs
• 1994 Prevalence of active disease 2.6%
• 2009 Elimination of trachoma in KSA

ODDS AND ENDS

• Review of the risks of cefuroxime prophylaxis for PCE
  – Safe in Penicillin allergic patients
  – Risks of TASS and compounding errors

• Given small absolute risk reduction, must minimize risks of intervention

• Corticosteroids for bacterial keratitis
• Primary data is the SCUT study
• Modest benefit if:
  – *Certain* that the organism is bacterial
  – Initiated within 4 days
• No increased risk of perforation or glaucoma

JUST BECAUSE SOMEONE SAYS SOMETHING IS TRUE DOES NOT MAKE IT SO

• Topical corticosteroids do NOT cause corneal thinning
• SCUT prospective data
• PRK, LASIK, Keratoplasty experience
• Corticosteroids + untreated infection lead to corneal thinning (HSV, bacterial, etc..)
SHUKRAN, AND
MAASALAAMA