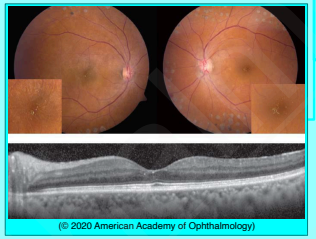
Systemic Drug-Induced Retinal Toxicity IV: Crystalline Retinopathy

Canthaxantine
- carotenoid to stimulate tanning
- crystalline maculopathy
  - after high dose therapy
  - asymptomatic
  - predilection for juxtapapillary region
  - doughnut pattern around macula
  - inner-retinal, glistening deposits
  - crystals resolve when drug stopped

Talc
- injected along with drugs such as methylphenidate
  - long-term intravenous drug abusers
- deposits
  - do not typically cause vision loss
  - embolize smaller-caliber perifoveal retinal arterioles
  - intravascular
  - refractile
  - rare
  - peripheral retinal neovascularization

Ethylene glycol / methoxyflurane anesthesia with renal dysfunction
- intravascular crystalline deposits of oxalate

West African crystalline maculopathy
- elderly persons from Igbo tribe of Nigeria
  - typically diabetic
  - other countries in that region
- inner-retinal refractile crystals of the fovea
  - yellow-green in color
  - no vision loss
- long-term ingestion of kola nuts



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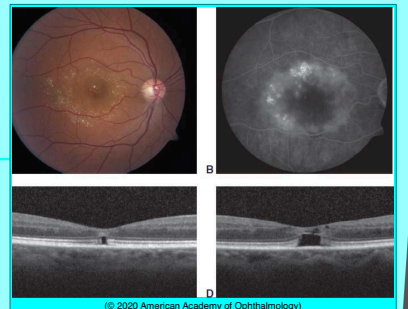
Nitrofurantoin

Systemic diseases
- Primary hereditary hyperoxaluria
- Cystinosis
- Secondary oxalosis
  - chronic renal failure
  - hemodialysis
- Sjogren-Larsson syndrome

Ocular diseases
- Bietti crystalline dystrophy
- Calcific drusen
- Gyrate atrophy
- Retinal telangiectasia

Tamoxifen
- antiestrogen agent
  - adjuvant therapy for breast cancer
  - high dose therapy
    - rare at standard doses
      - 20 mg/day
    - .>200 mg/day
    - .>100 g
- crystalline maculopathy
  - brilliant inner-retinal crystalline deposits
    - clustered around the fovea
  - ± CME
  - significant vision loss in severe cases
  - ± irreversible
  - rarely SD-OCT shows central loss of ellipsoid band after low-dose tamoxifen therapy, without visible crystals



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