

Complicated cataract

Definition

Cataract resulting from disturbance of the nutrition of the lens due to inflammatory or degenerative disease of the other parts of the eye

Etiology

- Iridocyclitis
- Ciliary body tumours
- Choroiditis
- Degenerative myopia
- Anterior segment ischemia
- Retinitis pigmentosa
- Gyrate atrophy
- Retinal detachment

Types

- A non-descript opacification appears throughout the cortex which usually progresses and matures rapidly following anterior segment inflammation
- In inflammations and degenerations affecting the posterior segment a characteristic opacification commences in the posterior part of the cortex in the axial region- posterior subcapsular cataract

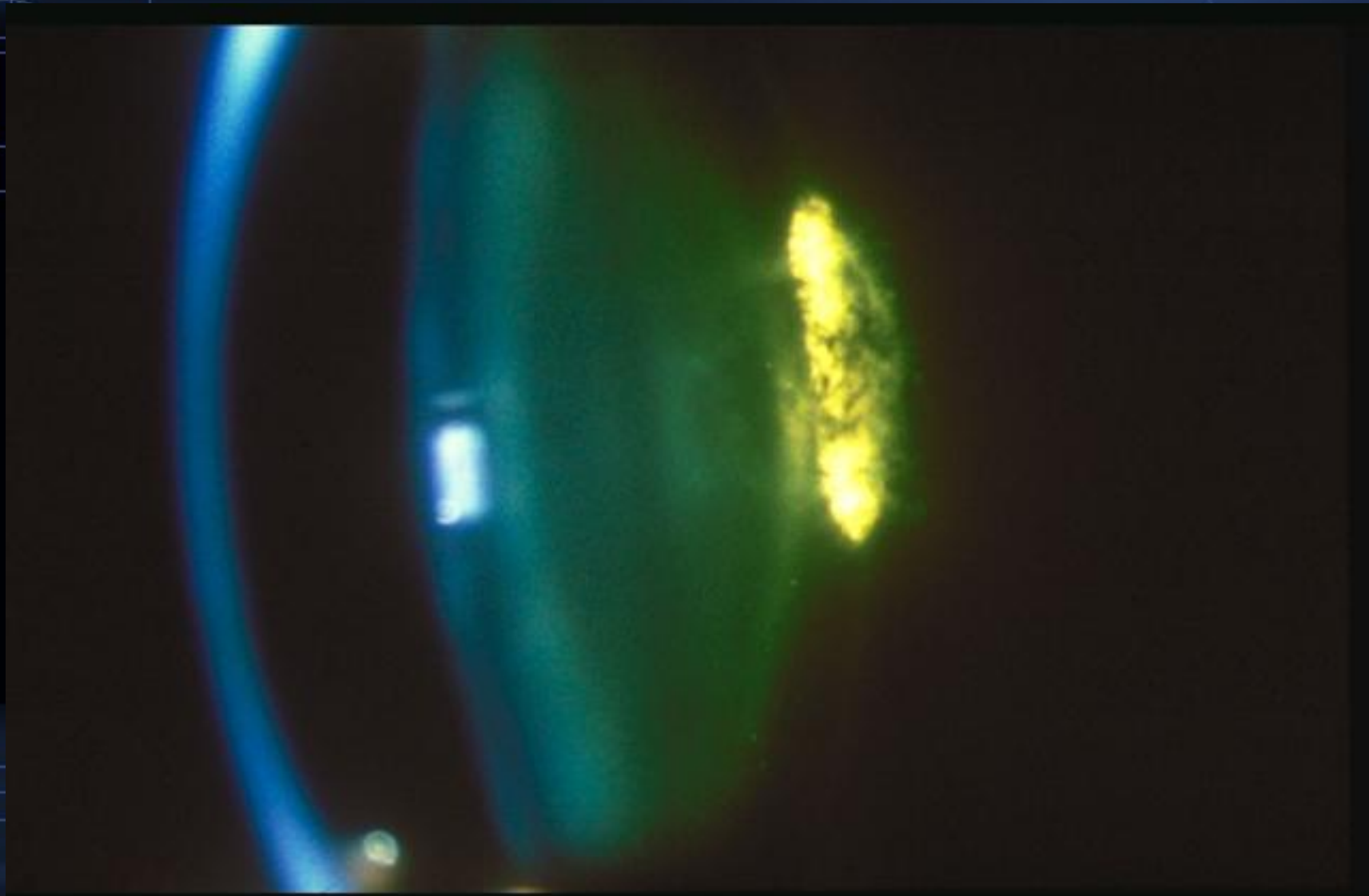
Posterior subcapsular cataract

Symptoms:

Vision is affected early owing to the position of the cataract close to the nodal point

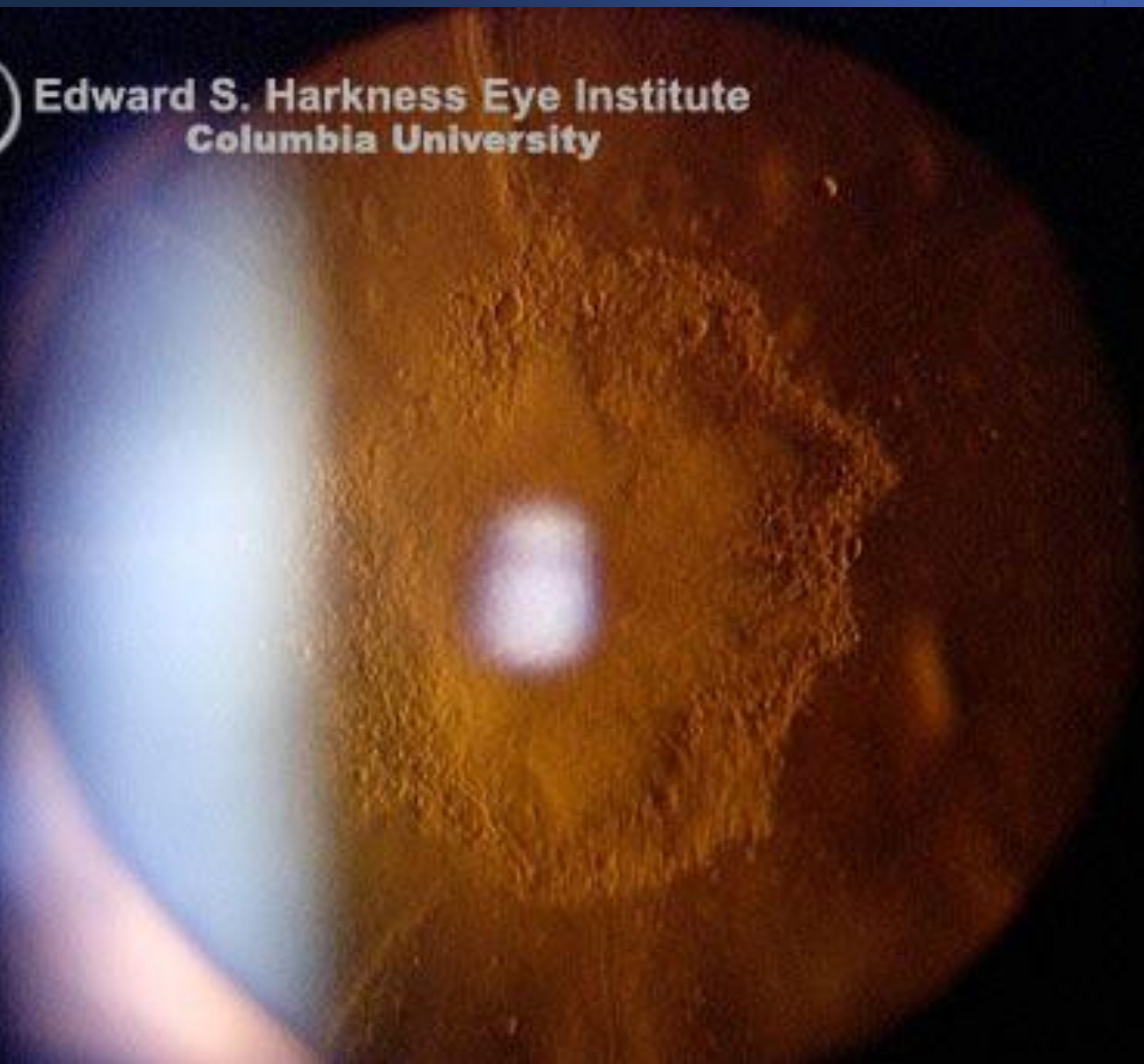
Signs:

- Slit lamp examination:
 - Bread crumb appearance
 - Polychromatic luster
- Ophthalmoscopically:
 - Opacity with irregular borders
 - Extend diffusely towards the equator and axially forwards towards the nucleus which may finally involve the entire lens
 - Soft and uniform appearance





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Treatment

- Treat the cause
- ECCE with IOL implantation

Cataract associated with systemic diseases

- Diabetes
- Parathyroid tetany
- Myotonic dystrophy
- Galactosemia
- Down's syndrome
- Atopic dermatitis

Diabetic cataract

Senile cataract:

- Develops at an earlier age
- Mechanism: glycation, carbamylation of crystallins and increased oxidative damage

True diabetic cataract (snow flake cataract):

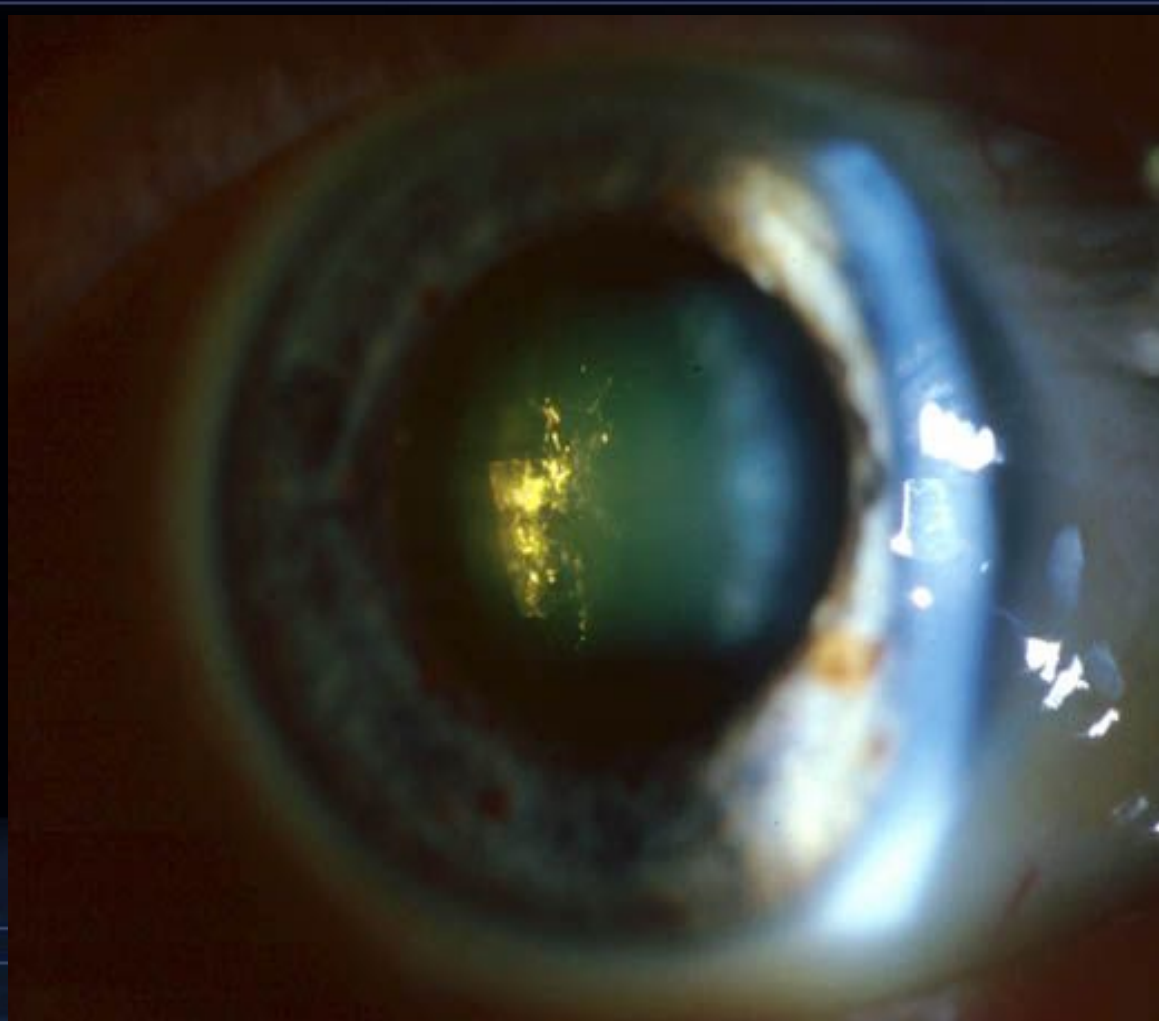
- Young adults
- Mechanism: Acute hyperglycemia resulting in osmotic imbalance
- Fluid vacuoles underneath anterior and posterior capsules initially, later bilateral snowflake like opacities in the anterior and posterior cortex. Sometimes, fine needle shaped polychromatic cortical opacities result.

Parathyroid tetany

- Mechanism: hypocalcemia resulting from atrophy or inadvertent removal of parathyroid gland during thyroidectomy
- Children: lamellar cataract
- Adults: anterior or posterior punctate subcapsular opacities- progress to form large glistening crystalline flakes- finally, total opacification

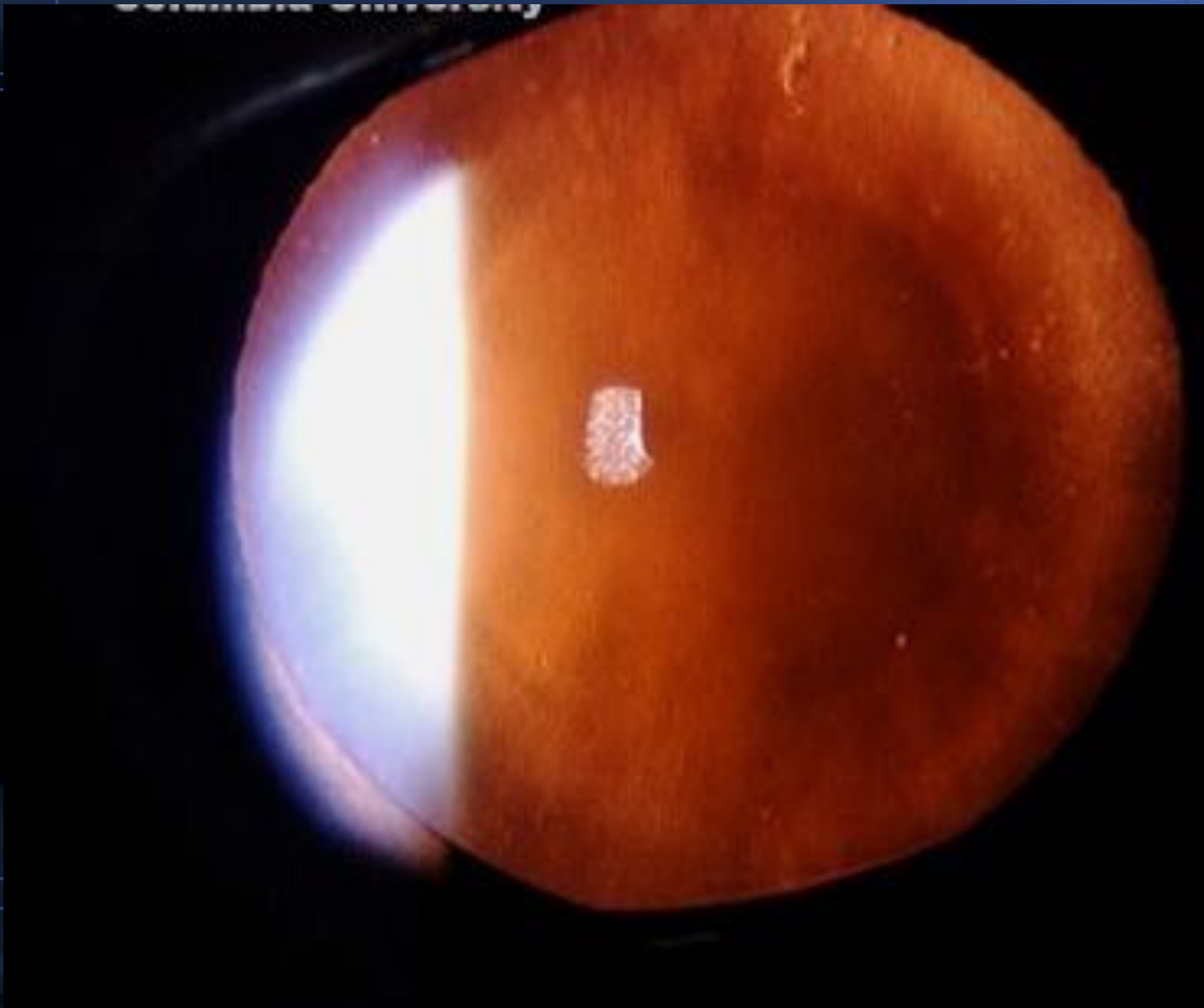
Myotonic dystrophy

- Christmas tree cataract: fine dust like opacities interspersed with tiny iridescent spots in the anterior and posterior subcapsular cortex
- May progress to form a characteristic stellate opacity at the posterior pole of the lens



Galctosemia

- Galactokinase deficiency-> accumulation of galactitol in the lens-> osmotic swelling of lens fibres
- Bilateral lens changes
- Zonular or nuclear opacity with increased refractive power of the nuclear portion causes an "oil droplet" appearance on retroillumination
- Lenticular myopia
- May progress to total opacification of the lens if the systemic condition is left untreated



Down's syndrome

- Punctate subcapsular cataract

Atopic dermatitis

- Atopic cataract: involves anterior capsular and subcapsular area



Miscellaneous causes of cataract

- Heat (infrared) cataract:
 - May be experimentally induced in animals or may clinically occur in industry (glassworkers and iron workers)
 - Mechanism: absorption of heat by pigments in iris and ciliary body indirectly affecting lens fibres
 - “Glass blower’s cataract”: discoid posterior subcapsular cataract which may later involve the entire cortex. In addition, true exfoliation of anterior lens capsule may occur in large sheets which may curl up in the pupillary area

Radiation cataract

- X-rays, gamma rays, neutrons
- Mechanism: direct action of radiation on the dividing cells and developing lens fibres
- Initial changes involve the equatorial lens fibres which slowly migrate posteriorly so that earliest clinical evidence seen is a posterior subcapsular cataract only after a period of one to two years following which maturation of cataract occurs fairly rapidly
- Appearance similar to heat cataract

Electric cataract

- Develops following passage of powerful electric current through the body as from a flash of lightning, or short circuiting of high voltage current
- Starts as punctate subcapsular opacities which mature rapidly

Toxic cataract

- Corticosteroids: PSC
- Miotics: anterior subcapsular granular cataract
- Amiodarone
- Chlorpromazine
- Busulphan
- Gold