HKJO Quiz

Answer

Chorioretinal folds caused by a left supero-lateral intra-orbital mass — adenocarcinoma of the left lacrimal gland (**Figure 2**).

(Question on page 30)

Discussion

Chorioretinal folds are undulations of the choroid, Bruch's membrane, pigment epithelium, and overlying retina. They develop secondary to mechanical stresses produced within these tissues.[1] On fundoscopic examination, choroidal folds appear as parallel grooves or striae of the posterior pole, that are most commonly horizontal but may be vertical, oblique, or irregular. They are usually situated temporally, rarely extending beyond the equator.[2] Their appearance on fundoscopic examination is characterized by the elevated portion (crests) of the fold appearing yellow and less pigmented, which is caused by stretching and thinning of the retinal pigmented epithelium, alternated with the valley (troughs) appearing darker, which is caused by retinal pigment epithelium compression. This retinal pigment epithelium distribution is responsible for the hyperfluorescence and hypofluorescence, respectively, seen on fluorescence angiography. Patients may be asymptomatic or present with visual disturbances, such as hyperopia or metamorphopsia.[3]

Known causes of chorioretinal fold include:[4]

- Idiopathic (associated with hypermetropia)
- Orbital disease
  - dysthyroid eye disease
  - orbital cellulitis
  - orbital tumor
- Ocular disease
  - scleral buckling procedures
  - scleritis
  - choroidal tumors
  - ocular hypotony
  - ocular trauma
  - papilledema

Since choroidal folds may be secondary to ocular or orbital diseases, it is necessary to perform imaging studies to diagnose treatable causes or to exclude potential serious conditions.

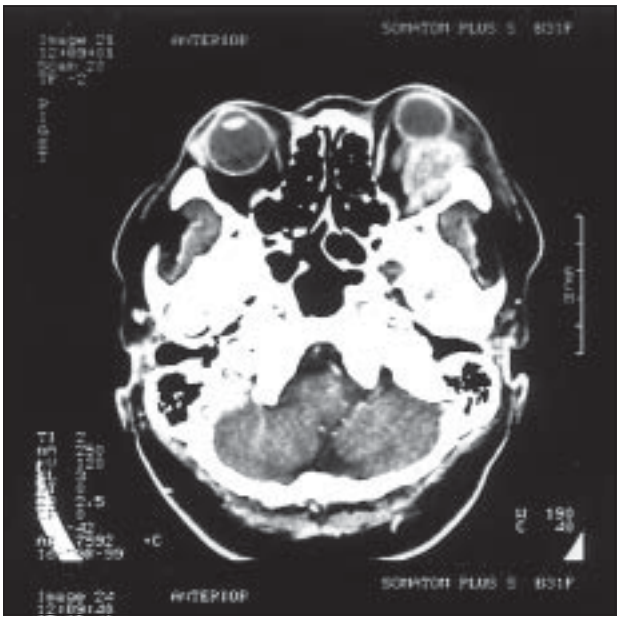

Figure 2. Computerized tomography image showing a left supero-lateral intra-orbital mass.

In this patient, chorioretinal folds related to hypotony was one of the differential diagnoses. However, the choroidal fold pattern was typically random in hypotony. In this fundus photo, the convex side of the folds was pointing towards the posterior pole and optic nerve and was typical of the extraconal orbital tumor fold pattern.

Together with a history of ptosis and decreased supraduction, imaging should be performed to rule out orbital tumor. In this patient, computed tomography and magnetic resonance imaging showed an intraorbital extraconal soft tissue tumor, which later was proven to be lacrimal gland adenocarcinoma.

References

1. *Friberg TR. Choroidal and retinal folds. In: Jakobeic FA, Albert DM, Robinson NL (editors). Principles and practice of ophthalmology: clinical practice. Vol 2. Philadelphia: WB Saunders; 1994.*
2. *Kanski JJ. Degenerations and dystrophies of the fundus. In: Clinical ophthalmology. 3rd ed. Oxford: Butterworth-Heinemann; 1995:404-405.*
3. *Griebel SR, Kosmorsky GS. Choroidal folds associated with increased intracranial pressure. Am J Ophthalmol 2000;129:513-516.*
4. *Khaw PT, Hughes DS, Kightley SJ, Waiters RF. Ophthalmology revision aid. London: BMJ Publishing Group; 1996:161.*