Abstract:
Focal choroidal excavation (FCE) is a choroidal anomaly that may produce reduced visual acuity. Meticulous imaging over the course of 5 years provides a means of discussion of the potential ocular associations.

I. Case History
- A 33 year old Asian female presented for follow up examination of a focal choroidal excavation OS with a clinical appearance of parafoveal pigmentary change.
- Ocular history was significant for strabismus surgery OD during childhood. Other ocular co-morbidities included lattice degeneration OU with a retinal hole OS, inferiorly, for which the patient was asymptomatic. Medical history was unremarkable.
- No systemic or ocular medications.

II. Pertinent findings
- Best corrected visual acuity was 20/20 OD and 20/25-2 OS. External examination and slit lamp evaluation was unremarkable. Tonometry OD 13mmHg, OS 12mmHg. Fundus examination revealed an enlarged foveal avascular zone. Ancillary testing included Amsler grid testing which showed no metamorphopsia in either eye.
- Additional radiological testing included Spectral Domain Ocular Coherence Tomography (SD-OCT) which revealed a focal area of choroidal ectasia inferior to the fovea with a stable appearance to findings from the initial evaluation 5 years ago. Additionally, the photoreceptor integrity line was scanned with a disrupted appearance. Record review from the initial encounter (6 years ago), the subsequent encounter (5 years ago), and from the most recent encounter reinforce the stable appearance with a disrupted ellipsoid line in addition to non-conforming photoreceptors and retinal pigment epithelium (RPE). Optos imaging with fundus autofluorescence also produced a single, focal area of hypoautofluorescence at the center.
- No additional Laboratory studies were indicated for this case.

III. Differential diagnosis
- Central Serous Choroidopathy (CSC)

IV. Diagnosis and discussion
• Focal choroidal excavation (FCE) is a choroidal depression confirmed by SD-OCT wherein the RPE is altered to fit the shape of the choroidal defect. It can be differentiated into two variations, non-conforming and conforming. In cases of conforming focal choroidal excavation, the photoreceptors follow the contours of the RPE and the excavation. Conversely, in cases of non-conforming FCE, the photoreceptors do not follow the contours of the RPE. In these cases, supposedly due to accumulated sub-retinal material and subsequent photoreceptor death, visual acuity suffers. It is currently believed that FCE presents first as conforming and later progresses to non-conforming, thereby resulting in a potential visual acuity decrease.

• Though CSC can serve as a differential diagnosis, it may also occur as a comorbid finding, likely self-resolving within 3-4 months or requiring treatment of low dose photodynamic therapy (PDT) in chronic cases.¹

• Type 2 neovascularization secondary to a serous retinal detachment had occurred in one case with FCE in the same eye. In such instances, medical co-management would be necessary with Anti-vascular endothelial growth factor (anti-VEGF) intervention.

V. Treatment, management

• Though there is no treatment for an isolated FCE, regular monitoring with SD-OCT is paramount to tracking its depth and progression, given the possibility of potentially serious sequelae. In the absence of CSC and neovascularization, FCE may transition from conforming to non-conforming with an associated potential change in visual acuity.

• In cases where CSC arises, treatment with PDT produced an adequate response and resultant visual acuity improvement. In one case involving FCE and CSC in the same eye, where type 2 neovascularization had also developed, anti-VEGF injection produced adequate response and improvement in visual acuity.¹²

• Sources:

VI. Conclusion

• FCE is a prime example of a diagnosis only able to be made through the use of new technology and imaging. Though an accurate and thorough clinical examination is necessary and beneficial, retinal imaging not only assists, but also is crucial to the formulation of an accurate diagnosis and treatment plan.