CLINICAL VIGNETTE

Retinal Detachment

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A 57-year-old male presented for a same day urgent care visit after noting visual changes for five days. He initially noted persistent right-sided black spot. One day prior, he lost sight in the lower half of his right visual field. The visual loss was accompanied by the presence of "little squiggly lines that would float in the air" in the same field. He noted very mild right ocular pain without erythema, discharge, pain with eye movement, headaches, or fever. There was no prior history of vison problems, including myopia and no head trauma. He had not sought medical attention for these symptoms until the present. His past medical history was significant for hypertension, hyperlipidemia, acid reflux, and depression. His current medications included aspirin, atorvastatin, hydrochlorothiazide, lisinopril, omeprazole, and sertraline. Social history was significant for past cigarette smoking and family history was noncontributory.

On exam, blood pressure was 124/79 mmHg, pulse 48 bpm, temperature was 97^{o}F, and body mass index was 23 kg/m^{2}. The patient was alert, and in no apparent distress. His eye exam showed clear conjunctiva without discharge, pupils were equal, round, and reactive to light, and external ocular eye muscles were intact. Visual confrontational exam revealed right-sided lower hemianopsia. The rest of the physical exam was unremarkable.

The patient was urgently referred and seen by Ophthalmology the same day, who diagnosed a superotemporal right retinal tear, and scheduled surgical repair the following day.

Discussion

Retinal detachment occurs when the neurosensory layer of the retina separates from the retinal pigment epithelium.[1] There are three pathogenetic types of retinal detachments. The most common type of retinal detachment is rhegmatogenous, which may occur when shrinkage of the vitreous humor leads traction on the retina. A retinal hole or tear then develops which allows liquefied vitreous gel to leak into the subretinal space, separating the neurosensory retina from the underlying retinal pigment epithelium.[1]

Exudative or serous retinal detachment occurs from accumulation of serous and/or hemorrhagic fluid in the subretinal space. It can result from hydrostatic factors, such as severe acute hypertension, or from sarcoid uveitis and similar inflammatory conditions. Treatment of the underlying disease can resolve this type of retinal detachment.

In tractional retinal detachment, a retinal tear results from the tractive force of fibrotic tissue, which may result from a previous hemorrhage, injury, surgery, or inflammation.[1] Surgical repair includes disengagement of scar tissue from the retina.

Risk factors for retinal detachment include aging, cataract surgery, focal retinal atrophy, myopia, and trauma. Less common associations include congenital eye disease, diabetic retinopathy, family history of detachment, prematurity, and uveitis.[1] When evaluating a patient with suspected retinal detachment they may describe seeing floaters. Floaters that are caused by posterior vitreous detachment in the presence of a retinal tear occur more abruptly and dramatically than typical floaters that occur throughout life.[1] Patients may describe floaters as fine dots, cobwebs, clouds, or strings in their visual field. Other associated symptoms include flashing lights and sudden visual field loss, usually in the periphery progressing toward the center over hours to weeks.[1] Patients may describe visual loss as a shadow or curtain. Diagnosis of retinal detachment is made by dilated fundoscopic exam. Tears may be visible, and/or indicated by elevation of the surrounding retina.[2] Diagnostic imaging is not necessary if there is good view of the fundus. Ocular ultrasound can be used to detect a retinal detachment when direct visualization is insufficient.[2]

Management includes immediate referral to an ophthalmologist. The primary treatment is laser photocoagulation to seal the retinal tear, then reattachment of the retina to the underlying retinal pigment epithelium.[2] Untreated patients risk permanent and severe vision loss. Subsequent visual acuity depends on whether the macula is attached at the time of diagnosis and intervention.[2] After definitive treatment, ongoing monitoring of the affected eye is required to detect proliferative vitreoretinopathy, which may cause a recurrent retinal detachment. One in four patients may develop retinal detachment in the contralateral eye, so monitoring of the unaffected eye is recommended.[2]

Conclusion

Retinal detachment should be suspected in patients who complain of sudden onset of floaters, visual field deficits or decrease visual acuity and flashing lights. Our patient had symptoms over five days prior to presentation. His physical

exam was significant for a visual field deficit. Immediate referral to ophthalmology is crucial as the primary treatment is surgical and time sensitive, as detachment may progress lead to a greater degree of vision loss.

REFERENCES

1. **Gariano RF, Kim CH**. Evaluation and management of suspected retinal detachment. *Am Fam Physician*. 2004 Apr 1;69(7):1691-8. PMID: 15086041.
2. **Gelston CD**. Common eye emergencies. *Am Fam Physician*. 2013 Oct 15;88(8):515-9. PMID: 24364572.