Atypical Presentation of Charles Bonnet Syndrome in the Presence of Visual Neglect after Stroke

Emily Guo, O.D.
Veterans Affairs Palo Alto Health Care System

Background

Visual field defects and visual neglect are common findings after stroke. This case examines a unique presentation of Charles Bonnet Syndrome in the presence of visual neglect and good central visual acuity after a right parietal and occipital lobe stroke.

Charles Bonnet is a condition that manifests as visual hallucinations secondary to damage along the visual pathway. Formal diagnosis typically requires an interdisciplinary approach to rule out other causes of hallucinations such as neurological disorders, psychiatric conditions, illicit drug use and certain medications. Although typically associated with loss of central visual acuity, cases reports have examined patients with Charles Bonnet syndrome to visual field loss in glaucoma and side vision loss after stroke.

Case Report

75-year-old Caucasian male with a history of type 2 diabetes, hypertension, hyperlipidemia, atrial flutter and obesity presented to the emergency room with left upper and lower extremity weakness. MRI revealed acute infarcts of the right parietal and occipital lobe regions.

The patient was admitted to a Polytrauma Rehabilitation Center 1-week post-acute stroke. Observation of the patient revealed poor attention to his left side. On ophthalmology examination the patient presented with complaints of visual disturbances in his left side vision only, onset after his stroke. These visual disturbances started off as colored lights like Christmas tree lights that then progressed to human shaped lights. On future examinations, the patient noted visual hallucinations restricted to this left side vision described as people or school children walking, a dog running, and window blinds shifting. The patient denied any noise with the hallucinations nor any interaction with them and was aware that they were not real.

Examination

- Snellen acuity: OD: 20/20, OS: 20/20
- Slipped letters on left side of chart
- Pupils: EERL, J AJP
- EOGs: full range of motion OU
- More difficulty looking left

Confrontational Visual Field: OD/OS: unable to see fingers on left side

- Line Bisection: Midline shifted towards right side

Ocular Health Findings:
- Significant dermatochalasis OU
- Mild cataracts OU
- Healthy, perfused optic nerves OU
- Macula within normal limits OU
- Few scattered dot/blot hemorrhages in posterior pole OU

- Mild shift to the right side

Neuropsychology Assessment
- Repeat Line Bisection: Only filled in numbers on right side, omitted 3 o'clock
- Clock Drawing: Incomprehensible
- Reading numbers on a clock: Able to read clockwise 12 through 7, leaving out 8-11.
- Reading printed daily schedule: Only read information in columns on right side of page.
- He stated that he knew there should be numbers on the page to indicate the times of his appointments, but he was unable to locate them.

Motor Assessment
- Finger-to-nose-finger task: intact with target in right visual field, but difficulty locating target in left visual field
- No evidence of impairment in consciousness or psychosis

Ocular Health Findings:
- Significant dermatochalasis OU
- Mild cataracts OU
- Healthy, perfused optic nerves OU
- Macula within normal limits OU
- Few scattered dot/blot hemorrhages in posterior pole OU

Visual Field and Visual Neglect Testing

- Test for visual field defects: Humphrey visual field 30-2 Sita Standard done 1-month post-stroke revealing non-homonymous ST defects OU and IT defects OS not correlating with patient's history of right parietal and occipital lobe infarcts.
- Visual acuity testing revealed acuity OU.
- MRI with and without contrast revealed acute infarcts of the right parietal and occipital lobe regions.

Case Discussion

This case of Charles Bonnet Syndrome is described as visual hallucinations secondary to damage along the visual pathway. Diagnosis of CBS must rule out other causes of visual hallucinations such as neurological disorders, psychiatric conditions, illicit drug use and certain medication side effects. Patients with CBS are aware that the visual hallucinations are not real, and these hallucinations can be on a scale of simple to complex images. Although commonly associated with central vision loss, many case reports have examined patients with visual field loss but with good central acuity presenting with Charles Bonnet Syndrome. The case series by Kößel evaluated 120 patients with homonymous hemianopsias and found 16 who experienced Charles Bonnet visual hallucinations.

The diagnosis of Charles Bonnet Syndrome with visual neglect is a curious one. Given the nature of visual neglect, it seems unlikely that a patient with visual neglect would be aware of visual hallucinations in the affected hemi-space. Although uncommonly reported, this is not the first case of CBS in a patient with neglect. A case report by Ruggeri et al. described a patient who had a left hemianopsia and mild left visual neglect with Charles Bonnet Syndrome.

References